

8336242



THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

January 17, 2023

**THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE
RECORDS OF THIS OFFICE OF THE FILE WRAPPER AND CONTENTS
OF:**

APPLICATION NUMBER: 14/656,942

FILING DATE: *March 13, 2015*

PATENT NUMBER: 9039580

ISSUE DATE: *May 26, 2015*



Certified by

Kathi

Performing the Functions and Duties of the
Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name: Douglas G. Bayerlein

Title: MANUAL TREADMILL
AND METHODS OF
OPERATING THE SAME

Prior Appl. No.: 14/243716

Prior Appl. Filing
Date: 4/2/2014

Examiner: Not yet assigned

Art Unit: Not yet assigned

CONTINUING PATENT APPLICATION
TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Transmitted herewith for filing under 37 C.F.R. § 1.53(b) is a:

☒ Continuation ☐ Division ☐ Continuation-In-Part (CIP)

of the above-identified copending prior application in which no patenting, abandonment, or termination of proceedings has occurred. Priority to the above-identified prior application is hereby claimed under 35 U.S.C. § 120 for this continuing application. The entire disclosure of the above-identified prior application is considered as being part of the disclosure of the accompanying continuing application and is hereby incorporated by reference therein.

☒ Applicant claims small entity status under 37 CFR 1.27.

Enclosed are:

- [X] Description, Claim(s), and Abstract (56 pages).
- [X] Formal drawings (20 sheets, Figures 1-38).
- [X] Executed Declaration (7 pages).
- [X] Information Disclosure Statement (2 pages).
- [X] Form PTO-SB08 with copies of 0 listed reference(s) (5 pages).
- [X] Application Data Sheet (37 CFR 1.76) (9 pages).
- [X] PTO/SB/424 - Request for Prioritized Examination (2 pages).

The adjustment to the number of sheets for EFS-Web filing follows:

Number of Sheets		EFS-Web Adjustment	Number of Sheets for EFS-Web
76	x	75%	57

The filing fee is calculated below at the small entity rate:

	Number Filed	Included in Basic Fee	Extra		Rate	Fee Totals
Basic Filing Fee					\$70.00 =	\$70.00
Search Fee					\$300.00	\$300.00
Examination Fee					\$360.00	\$360.00
Size Fee	57	- 100	= 0	x	\$200.00	\$0.00
Total	26	- 20	= 6	x	\$40.00 =	\$240.00
Claims:						
Independents	4	- 3	= 1	x	\$210.00 =	\$210.00
:						
If any Multiple Dependent Claim(s) present:				+	\$390.00 =	\$0.00
Surcharge under 37 CFR 1.16(e) for late filing of Executed Declaration or late payment of filing fee				+	\$70.00 =	\$0.00
Prioritized Examination fee (Track I) under 37 C.F.R. § 1.17 (c)						\$2,000.00
Processing Fee (Track I) under 37 C.F.R. § 1.17 (i)						\$70.00
TOTAL FILING FEE:					=	\$3,250.00
Assignment Recordation Fee:				+	\$40.00 =	\$0.00
Processing Fee under 37 CFR 1.17(i) for Late Filing of English Translation of Application:				+	\$70.00 =	\$0.00
Publication Fee						\$0.00
TOTAL FEE					=	\$3,250.00

The above-identified fees of \$3,250.00 are being paid by credit card via EFS-Web.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Please direct all correspondence to the undersigned attorney or agent at the address indicated below.

Respectfully submitted,

Date: March 13, 2015

By: /R.J. McKenna/

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (414) 297-5723
Facsimile: (414) 297-4900

Richard J. McKenna
Attorney for Applicant
Registration No. 35,610

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: March 13, 2015

(use as many sheets as necessary)

Complete if Known

Application Number	Not yet assigned
Filing Date	Herewith
First Named Inventor	Douglas G. Bayerlein
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	097208-0204

Sheet 1 of 5

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	A1	2002/0147079-A1	10-10-2002	KALNBACH	
	A2	2006/0003871	01-05-2006	HOUGHTON ET AL.	
	A3	2006/0003872	01-05-2006	CHILES ET AL.	
	A4	2006/0287165-A1	12-21-2006	PASQUALIN	
	A5	2008/0287266-A1	11-20-2008	SMITH, ARLAN R.	
	A6	2009/0170666-A1	07-02-2009	CHIANG, YUNG-CHANG	
	A7	2009/0215589-A1	08-27-2009	SCHOENENBERGER, WILLI	
	A8	2009/0280960	11-12-2009	TIAN, PENG FENG	
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Examiner
SignatureDate
Considered

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>				Application Number	Not yet assigned
				Filing Date	Herewith
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	Not yet assigned
				Examiner Name	Not yet assigned
Sheet	2	of	5	Attorney Docket Number	097208-0204

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Application Document Serial Number-Kind Code ² <i>(if known)</i>	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ - Kind Code ⁵ <i>(if known)</i>	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	A43	JP-03-148743	06-25-1991	CASIO COMPUTER CO. LTD.		
	A44	DE-1020050 09 414	09-14-2006	SCHÖNBORN-OLEK, JÜRGEN		
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	A46	KR-2009007043	01-16-2009	KONYANG UNIVERSITY INDUSTRIAL COOPERATION GROUP		
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	A51	JP-3148743	02-26-2009	CAI		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
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	A53	BRUGHELLI ET AL., Effects of Running Velocity on Running Kinetics and Kinematics, Journal of Strength and Conditioning Research, April 2011, 7 pages.	
	A54	Complaint for Declaratory Judgment of Patent Invalidity and Correction of Inventorship, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), June 13, 2013, 6 pages.	
	A55	Curvature, http://en.wikipedia.org/wiki/Curvature , March 3, 2010, 1 page.	
	A56	Decision and Order Denying Defendant's Motion to Dismiss or to Transfer and Staying Case Pending Decision from Eastern District New York District Court, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), December 18, 2013, 7 pages.	
	A57	Docket Report, Speedfit LLC and Aurel A. Astilean v. Douglas G. Bayerlain, Civ. Dkt. No. 2:13-cv-01276-KAM-AKT (E.D.N.Y.), December 19, 2013, 8 pages.	
	A58	Docket Report, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), December 19, 2013, 3 pages.	

Examiner Signature		Date Considered	
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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>		Application Number	Not yet assigned
		Filing Date	Herewith
		First Named Inventor	Douglas G. Bayerlein
		Art Unit	Not yet assigned
		Examiner Name	Not yet assigned
Sheet	3	of	5
		Attorney Docket Number	097208-0204

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A59	EMS-Grivory Grivory GV-5H Black 9915 Nylon Copolymer, 50% Glass Fiber Filled, As Conditioned, believed to be publically available before September 16, 2011, 2 pages.	
	A60	First Amended Complaint (Jury Trial Demanded), Speedfit LLC and Aurel A. Astilean v. Douglas G. Bayerlein, Civ. Dkt. No. 2:13-cv-01276-KAM-AKT (E.D.N.Y.), June 17, 2013, 16 pages.	
	A61	HALL, The Rotary TREADWHEEL, available at least as early as November 2011, 1 page.	
	A62	HERSHER, Perfect Landing, http://news.harvard.edu/gazette/story/2010/01/different-strokes/ , January 27, 2010, 5 pages.	
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	A71	International Search Report and Written Opinion for Application No. PCT/US2010/027543, mail date May 12, 2010, 10 pages.	
	A72	Introducing the New Force 3 Treadmill Advanced Analysis Package, www.fittech.com.au , believed to be publically available before September 16, 2011, 3 pages.	
	A73	LIEBERMAN ET AL., Running Barefoot, Forefoot Striking & Training Tips, http://www.barefootrunning.fas.harvard.edu/5BarefootRunning&TrainingTips.html , February 26, 2010, 5 pages.	
	A74	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strike, http://www.barefootrunning.fas.harvard.edu/4BiomechanicsOfFootStrike.html , February 26, 2010, 6 pages.	
	A75	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strikes & Applications to Running Barefoot or in Minimal Footwear, http://www.barefootrunning.fas.harvard.edu/index.html , February 26, 2010, 2 pages.	

Examiner Signature		Date Considered	
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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>		Application Number	Not yet assigned
		Filing Date	Herewith
		First Named Inventor	Douglas G. Bayerlein
		Art Unit	Not yet assigned
		Examiner Name	Not yet assigned
Sheet	4	of	5
		Attorney Docket Number	097208-0204

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
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	A91	Woodway, Curve 3.0 Specification, May 25, 2011, 1 page.	
	A92	Woodway, Curve Specification, May 24, 2011, 1 page.	

Examiner Signature		Date Considered	
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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>				Application Number	Not yet assigned
				Filing Date	Herewith
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	Not yet assigned
				Examiner Name	Not yet assigned
Sheet	5	of	5	Attorney Docket Number	097208-0204

NON PATENT LITERATURE DOCUMENTS			
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	A93	Woodway, Curve Specification, May 25, 2011, 1 page.	
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	A95	Woodway, Force Specification, April 8, 2008, 1 page.	
	A96	Woodway, Force Specification, May 2, 2011, 1 page.	
	A97	Woodway, Force Specification, May 2, 2012, 1 page.	
	A98	Woodway's Opposition to Defendant's Notice of Motion and Motion to Dismiss Case and Transfer Litigation to EDNY, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WERC (E.D. WI), October 18, 2013, 22 pages.	

Examiner Signature		Date Considered	
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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		
First Named Inventor/Applicant Name:		Douglas G. Bayerlein		
Filer:		Richard J. McKenna/Michele Mathes		
Attorney Docket Number:		097208-0204		
Filed as Small Entity				
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Request for Prioritized Examination	2817	1	2000	2000
Pages:				
Claims:				
Claims in excess of 20	2202	6	40	240
Independent Claims in Excess of 3	2201	1	210	210

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous-Filing:				
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				3250

Electronic Acknowledgement Receipt

EFS ID:	21760113
Application Number:	14656942
International Application Number:	
Confirmation Number:	5409
Title of Invention:	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Richard J. McKenna/Michele Mathes
Filer Authorized By:	Richard J. McKenna
Attorney Docket Number:	097208-0204
Receipt Date:	13-MAR-2015
Filing Date:	
Time Stamp:	12:11:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 3250
RAM confirmation Number	9066
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	097208-0204_Transmittal.pdf	96204	no	4
			4b31f3565359ac92618e5380a7920fb007a15362		
Warnings:					
Information:					
2	TrackOne Request	097208-0204_Request_Prioritized_Exam.pdf	113991	no	2
			0a99afb9605b6e657880e700f1aad7237d7b0f00		
Warnings:					
Information:					
3	Oath or Declaration filed	097208-0193_Declarations.pdf	214052	no	7
			65bef31165a63bcfa006aacb52504108d3aefc31		
Warnings:					
Information:					
4	Application Data Sheet	097208-0204_ADS.pdf	1894929	no	9
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Warnings:					
Information:					
5		097208-0204_Con_Specification.pdf	224247	yes	56
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	49	
	Claims		50	55	
	Abstract		56	56	
Warnings:					
Information:					
6	Drawings-only black and white line drawings	097208-0204_Con_Figures_Processed.pdf	1236004	no	20
			42e46e18751723eb2ed37f42d2995ec5ccf185b5		

Warnings:					
Information:					
7	Transmittal Letter	097208-0204_IDS.pdf	100033 53bbad4edb0ca2eea19bc15621213eb657f78223	no	2
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	097208-0204_SB08.pdf	114804 ee8e19e2d4c77b665dc28ccdee6b7ce318263408	no	5
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
9	Fee Worksheet (SB06)	fee-info.pdf	43570 55f354098fe211e1319eae726e5b4d876fc67e60	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			4037834		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e) (Page 1 of 1)**

First Named Inventor:	Douglas G. Bayerlein	Nonprovisional Application Number (if known):	Not yet Assigned
Title of Invention:	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:
 - I. ☒ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**
 - i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
 - ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.
 - II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature	/R.J. McKenna/	Date	03-13-2015
Name (Print/Typed)	Richard J. McKenna	Practitioner Registration Number	35,610

Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*

☐ *Total of _____ forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN
APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

097208-0193

**Title of
Invention**

MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

As the below named inventor, I hereby declare that:

This declaration
is directed to:



The attached application, or



United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Matthew J. Zank

Date (Optional): _____

Signature: _____

Matthew J. Zank

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN
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LEGAL NAME OF INVENTOR

Inventor: Scott D. Hoerig

Date (Optional): _____

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Vance E. Emons

Date (Optional): 4/2/2014

Signature: Vance E Emons

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Nicholas A. Oblamski

Date (Optional): _____

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Douglas G. Bayerlein

Date (Optional): _____

Signature: Douglas G. Bayerlein

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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097208-0193

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LEGAL NAME OF INVENTOR

Inventor: Robert L. Zimpel

Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SD/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN
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097208-0193

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LEGAL NAME OF INVENTOR

Inventor: Joel W. Richards

Date (Optional): 4-2-14

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Douglas	G.	Bayerlein			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Oconomowoc	State/Province	WI	Country of Residence i	US	

Mailing Address of Inventor:

Address 1	34675 Bartlett Road					
Address 2						
City	Oconomowoc	State/Province	WI			
Postal Code	53066	Country i	US			

Inventor 2					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Vance	E.	Emons			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Hartland	State/Province	WI	Country of Residence i	US	

Mailing Address of Inventor:

Address 1	N79 W28251 Tourmaline Court					
Address 2						
City	Hartland	State/Province	WI			
Postal Code	53029	Country i	US			

Inventor 3					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Nicholas	A.	Oblamski			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		097208-0204	
		Application Number			
Title of Invention		MANUAL TREADMILL AND METHODS OF OPERATING THE SAME			

City	Waukesha	State/Province	WI	Country of Residence i	US
-------------	----------	-----------------------	----	-------------------------------	----

Mailing Address of Inventor:

Address 1	W271N525 Jills Dr.				
Address 2					
City	Waukesha	State/Province	WI		
Postal Code	53188	Country i	US		
Inventor 4				Remove	
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Scott	D.	Hoerig		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Brookfield	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	15755 Sky Cliff Drive				
Address 2					
City	Brookfield	State/Province	WI		
Postal Code	53005	Country i	US		
Inventor 5				Remove	
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Matthew	J.	Zank		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Milwaukee	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	4677 N. 41st Street				
Address 2					
City	Milwaukee	State/Province	WI		
Postal Code	53209	Country i	US		
Inventor 6				Remove	
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Robert	L.	Zimpel		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Menomonee Falls	State/Province	WI	Country of Residence i	US

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

Mailing Address of Inventor:

Address 1	N55 W21289 Logan Dr.		
Address 2			
City	Menomonee Falls	State/Province	WI
Postal Code	53051	Country i	US
Inventor 7			<input type="button" value="Remove"/>
Legal Name			
Prefix	Given Name	Middle Name	Family Name
	Joel	W.	Richards
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service			
City	Wauwatosa	State/Province	WI
		Country of Residence i	US

Mailing Address of Inventor:

Address 1	2145 N. 65th St.		
Address 2			
City	Wauwatosa	State/Province	WI
Postal Code	53213	Country i	US
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. <input type="button" value="Add"/>			

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
<input type="checkbox"/> An Address is being provided for the correspondence Information of this application.	
Customer Number	26371
Email Address	IPDocketing@foley.com <input type="button" value="Add Email"/> <input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		
Attorney Docket Number	097208-0204	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	20	Suggested Figure for Publication (if any)	1

Filing By Reference :

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has **not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	26371		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
This Application	Continuation of	14/243716	2014-04-02
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
14/243716	Continuation of	13/235065	2011-09-16
Prior Application Status		Remove	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13/235065	Continuation in part of	PCT/US10/27543	2010-03-16
Prior Application Status			<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
PCT/US10/27543	Claims benefit of provisional	61/161027	2009-03-17
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

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☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

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☒ Authorization to Permit Access to the Instant Application by the Participating Offices

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

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<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117	<input type="radio"/> Joint Inventor	
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If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/>			
If the Applicant is an Organization check here. <input checked="" type="checkbox"/>			
Organization Name	Woodway USA, Inc.		
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City	Waukesha	State/Province	WI
Country ⁱ	US	Postal Code	53186
Phone Number		Fax Number	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		
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If the Assignee or Non-Applicant Assignee is an Organization check here.			<input checked="" type="checkbox"/>
Organization Name	Woodway USA, Inc.		
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City	Waukesha	State/Province	WI
Country i	US	Postal Code	53186
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Signature	/R.J. McKenna/			Date (YYYY-MM-DD)	2015-03-13
First Name	Richard J.	Last Name	McKenna	Registration Number	35610
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	097208-0204
		Application Number	
Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME		

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

CROSS-REFERENCE TO RELATED PATENT APPLICATIONS

[0001] This application claims the benefit of priority as a continuation of U.S. Patent Application No. 14/243,716, filed April 2, 2014, which is a continuation of U.S. Patent Application No. 13/235,065, filed September 16, 2011, which is a continuation-in-part of prior international Application No. PCT/US10/27543, filed March 16, 2010, which claims priority to U.S. Provisional Application Serial No. 61/161,027, filed March 17, 2009, all of which are incorporated herein by reference in their entireties.

BACKGROUND

[0002] The present invention relates generally to the field of treadmills. More specifically, the present invention relates to manual treadmills. Treadmills enable a person to walk, jog, or run for a relatively long distance in a limited space. It should be noted that throughout this document, the term “run” and variations thereof (e.g., running, etc.) in any context is intended to include all substantially linear locomotion by a person. Examples of this linear locomotion include, but are not limited to, jogging, walking, skipping, scampering, sprinting, dashing, hopping, galloping, etc.

[0003] A person running generates force to propel themselves in a desired direction. To simplify this discussion, the desired direction will be designated as the forward direction. As the person’s feet contact the ground (or other surface), their muscles contract and extend to apply a force to the ground that is directed generally rearward (i.e., has a vector direction substantially opposite the direction they desire to move). Keeping with Newton’s third law of motion, the ground resists this rearwardly directed force from the person, resulting in the person moving forward relative to the ground at a speed related to the force they are creating.

[0004] To counteract the force created by the treadmill user so that the user stays in a relatively static fore and aft position on the treadmill, most treadmills utilize a belt that is driven by a motor. The motor operatively applies a rotational force to the belt, causing that portion of the belt on which the user is standing to move generally rearward. This force must

be sufficient to overcome all sources of friction, such as the friction between the belt and other treadmill components in contact therewith and kinetic friction, to ultimately rotate the belt at a desired speed. The desired net effect is that, when the user is positioned on a running surface of the belt, the forwardly directed velocity achieved by the user is substantially negated or balanced by the rearwardly directed velocity of the belt. Stated differently, the belt moves at substantially the same speed as the user, but in the opposite direction. In this way, the user remains at substantially the same relative position along the treadmill while running. It should be noted that the belts of conventional, motor-driven treadmills must overcome multiple, significant sources of friction because of the presence of the motor and configurations of the treadmills themselves.

[0005] Similar to a treadmill powered by a motor, a manual treadmill must also incorporate some system or means to absorb or counteract the forward velocity generated by a user so that the user may generally maintain a substantially static position on the running surface of the treadmill. The counteracting force driving the belt of a manual treadmill is desirably sufficient to move the belt at substantially the same speed as the user so that the user stays in roughly the same static position on the running surface. Unlike motor-driven treadmills, however, this force is not generated by a motor.

SUMMARY

[0006] One embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame having a front end and a rear end opposite the front end, a front shaft rotatably coupled to the treadmill frame at the front end, a rear shaft rotatably coupled to the treadmill frame at the rear end, a running belt including a curved running surface upon which a user of the treadmill may run, and a one-way bearing assembly coupled to at least one of the front shaft and the rear shaft, wherein the one-way bearing assembly prevents rotation of at least one of the front shaft and the rear shaft in one direction and permits rotation of at least one of the front shaft and the rear shaft in the opposite direction to restrict rotation of the running belt in a single direction. The running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running surface of the running belt to move from the front shaft toward the rear shaft. The

treadmill is configured to allow the user to manually control the speed of the running belt and to facilitate maintenance of a contour of the curved running surface.

[0007] Another embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame, a front shaft rotatably coupled to the treadmill frame, a rear shaft rotatably coupled to the treadmill frame, a running belt including a contoured running surface upon which a user of the treadmill may run, wherein the running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running belt to rotate about the front shaft and the rear shaft without the rotation of the running belt being generated by a motor, and a one-way bearing assembly configured to prevent rotation of the running surface of the running belt in one direction.

[0008] Another embodiment of the disclosure relates to a manually operated treadmill comprising a frame supported on a substantially horizontal surface, a front shaft assembly supported by the frame and comprising a front shaft and at least one front running belt pulley supported by the front shaft, a rear shaft assembly supported by the frame a spaced distance from the front shaft and comprising a rear shaft and at least one rear running belt pulley supported by the rear shaft, a running belt supported at least in part by the front shaft assembly and the rear shaft assembly, and a one-way bearing assembly cooperating with one of the front shaft and the rear shaft to permit rotation of said one of the front shaft and the rear shaft in only one direction. The running belt includes a front portion adjacent the front shaft assembly, a rear portion adjacent the rear shaft assembly, and a central portion intermediate the front portion and the rear portion, the front portion and the rear portion being positioned vertically higher than a lowest point found in the central portion to form a non-planar running surface upon which a user of the treadmill may walk or run, wherein gravitational force acting upon weight of the user's body on the running belt relative to the lowest point of the running belt causes rotation of the running belt, front shaft, and the rear shaft without the aid of a motor.

[0009] Another embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame having a front end and a rear end opposite the front end, a front shaft rotatably coupled to the treadmill frame at the front end, a rear shaft rotatably coupled to

the treadmill frame at the rear end, and a running belt including a curved running surface upon which a user of the treadmill may run. The running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running surface of the running belt to move from the front shaft toward the rear shaft. The treadmill is configured to control the speed of the running belt to facilitate the maintenance of the contour of the curved running surface.

[0010] Another embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame, a front support member rotatably coupled to the treadmill frame, a rear support member rotatably coupled to the treadmill frame, a running belt including a curved running surface upon which a user of the treadmill may run, wherein the running belt is supported by the front support member and the rear support member, and a synchronizing system configured to cause the front support member and the rear support member to rotate at substantially the same speeds. The force generated by the user causes rotation of the front support member and the rear support member and also causes the running belt to rotate relative to the treadmill frame.

[0011] Another embodiment of the disclosure relates to manually operated treadmill comprising a treadmill frame, a running belt including a running surface upon which a user of the treadmill may run, a front support member rotatably coupled to the treadmill frame, the front support member comprising the forwardmost support for the running belt, a rear support member rotatably coupled to the treadmill frame, the rear support member comprising the rearwardmost support for the running belt. The running surface comprises at least in part a complex curve located intermediate the front support member and the rear support member and incorporating a minimum of two geometric configurations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a perspective view of an exemplary embodiment of a manual treadmill having a non-planar running surface.

[0013] FIG. 2 is a left-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0014] FIG. 3 is a right-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0015] FIG. 4 is a perspective view of the right-hand side of the manual treadmill of FIG. 1 with a portion of the rear of the treadmill cut-away to show a portion of the arrangement of elements.

[0016] FIG. 5 is a cross-sectional view of a portion of the manual treadmill taken along line 5-5 of FIG. 1.

[0017] FIG. 6 is an exploded view of a portion of the manual treadmill of FIG. 1 having the side panels and handrail removed.

[0018] FIG. 7a is a side schematic view of the profile of the running surface of the manual treadmill according to an exemplary embodiment.

[0019] FIGS. 7b-7j are side schematic views of alternative profiles of the running surfaces of manual treadmills according to alternative exemplary embodiments.

[0020] FIG. 8 is a partially exploded, perspective view of a bearing rail for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0021] FIG. 9 is a side elevation view of the bearing rail of FIG. 6.

[0022] FIG. 10 is a top elevation view of a front shaft assembly for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0023] FIG. 11 is a top elevation view of a rear shaft assembly for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0024] FIG. 12 is a partial, cross-sectional view of the manual treadmill taken along line 12-12 of FIG. 1.

[0025] FIG. 13 is an alternative exemplary embodiment of the partial, cross-sectional view of the manual treadmill similar to FIG. 12.

[0026] FIG. 14 is a perspective view of an alternative embodiment of a synchronizing system integrated into a manual treadmill.

[0027] FIG. 15 is a partial, cross-sectional view of a manual treadmill including an exemplary embodiment of a braking system taken along line 15-15 of FIG. 4.

[0028] FIG. 16 is a partial, cross-sectional view of a manual treadmill including another exemplary embodiment of a braking system taken along line 16-16 of FIG. 4.

[0029] FIG. 17 is a perspective side view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1 including a plurality of rollers used in place of bearing rails.

[0030] FIG. 18 is a side perspective view of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0031] FIG. 19 is a detail view of the track system of FIG. 18 taken along line 19-19.

[0032] FIG. 20 is a partial cross-sectional view of the track system of FIG. 18 taken along line 20-20.

[0033] FIG. 21 is a detail view of the track system of FIG. 20 taken along line 21-21.

[0034] FIG. 22 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0035] FIG. 23 is a detail view of the track system of FIG. 22 taken along line 23-23.

[0036] FIG. 24 is a partial cross-sectional view of the track system of FIG. 18 taken along line 24-24.

[0037] FIG. 25 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured

to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0038] FIG. 26 is a detail view of the track system of FIG. 25 taken along a line 26-26.

[0039] FIG. 27 is a partial cross-sectional view of the track system of FIG. 25 taken along line 27-27.

[0040] FIG. 28 is a detail view of the track system of FIG. 27 taken along line 28-28.

[0041] FIG. 29 is a partially exploded, right-hand perspective view of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0042] FIG. 30 is a detail view of the track system of FIG. 29 taken along line 30-30.

[0043] FIG. 31 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0044] FIG. 32 is a detail view of the track system of FIG. 31 taken along a line 32-32.

[0045] FIG. 33 is a partial cross-sectional view of the track system of FIG. 31 taken along a line 33-33.

[0046] FIG. 34 is a detail view of the track system of FIG. 32 taken along a line 34-34.

[0047] FIG. 35 is a perspective view of an exemplary embodiment of a manual treadmill according to another embodiment having a substantially planar running surface.

[0048] FIG. 36 is a perspective view of a one-way bearing for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0049] FIG. 37 is a left-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1 including an incline adjustment system.

[0050] FIG. 38 is a perspective view of a one-way bearing for the manual treadmill shown in FIG. 1, according to another embodiment.

DETAILED DESCRIPTION

[0051] Referring to FIG. 1, a manual treadmill 10 generally comprises a base 12 and a handrail 14 mounted to the base 12 as shown according to an exemplary embodiment. The base 12 includes a running belt 16 that extends substantially longitudinally along a longitudinal axis 18. The longitudinal axis 18 extends generally between a front end 20 and a rear end 22 of the treadmill 10; more specifically, the longitudinal axis 18 extends generally between the centerlines of a front shaft and a rear shaft, which will be discussed in more detail below.

[0052] A pair of side panels 24 and 26 (e.g., covers, shrouds, etc.) are preferably provided on the right and left sides of the base 12 to effectively shield the user from the components or moving parts of the treadmill 10. The base 12 is supported by multiple support feet 28, which will be described in greater detail below. A rearwardly extending handle 30 is provided on the rear end of the base 12 and a pair of wheels 32 are provided at the front of the base 12, however, the wheels 32 are mounted so that they are generally not in contact with the ground when the treadmill is in an operating position. The user can easily move and relocate the treadmill 10 by lifting the rear of the treadmill base 12 a sufficient amount so that the multiple support feet 28 are no longer in contact with the ground, instead the wheels 32 contact the ground, thereby permitting the user to easily roll the entire treadmill 10. It should be noted that the left and right-hand sides of the treadmill and various components thereof are defined from the perspective of a forward-facing user standing on the running surface of the treadmill 10.

[0053] Referring to FIGS. 2–6, the base 12 is shown further including a frame 40, a front shaft assembly 44 positioned near a front end 48 of the frame 40, and a rear shaft assembly 46 positioned near the rear end 50 of frame 40, generally opposite the front end 48. Specifically, the front shaft assembly 44 is coupled to the frame 40 at the front end 48, and the rear shaft

assembly 46 is coupled to the frame 40 at the rear end 50 so that the frame supports these two shaft assemblies.

[0054] The frame 40 comprises longitudinally-extending, opposing side members, shown as a left-hand side member 52 and a right-hand side member 54, and one or more lateral or cross-members 56 extending between and structurally connecting the side members 52 and 54 according to an exemplary embodiment. Each side member 52, 54 includes an inner surface 58 and an outer surface 60. The inner surface 58 of the left-hand side member 52 is opposite to and faces the inner surface 58 of the right-hand side member 54. According to other exemplary embodiments, the frame may have substantially any configuration suitable for providing structure and support for the manual treadmill.

[0055] Similar to most motor-driven treadmills, the front shaft assembly 44 includes a pair of front running belt pulleys 62 interconnected with, and preferably directly mounted to, a shaft 64, and the rear shaft assembly 46 includes a pair of rear running belt pulleys 66 interconnected with, and preferably directly mounted to, a shaft 68. The front and rear running belt pulleys 62, 66 are configured to facilitate movement of the running belt 16. The running belt 16 is disposed about the front and rear running belt pulleys 62, 66, which will be discussed in more detail below. As the front and rear running belt pulleys 62, 66 are preferably fixed relative to shafts 64 and 68, respectively, rotation of the front and rear running belt pulleys 62, 66 causes the shafts 64, 68 to rotate in the same direction. The front and rear running belt pulleys 62, 66 are formed of a material sufficiently rigid and durable to maintain shape under load.

Preferably, the material is of a relatively light weight so as to reduce the inertia of the pulleys 62, 66. The pulleys 62, 66 may be formed of any material having one or more of these characteristics (e.g., metal, ceramic, composite, plastic, etc.). According to the exemplary embodiment shown, the front and rear running belt pulleys 62, 66 are formed of cast aluminum. According to another embodiment, the front and rear running belt pulleys 62, 66 are formed of a glass-filled nylon, for example, Grivory® GV-5H Black 9915 Nylon Copolymer available from EMS-GRIVORY of Sumter, SC 29151, which may save cost and reduce the weight of the pulleys 62, 66 relative to metal pulleys. To prevent a static charge due to operation of the treadmill 10 from building on a pulley 62, 66 formed of electrically insulative materials (e.g.,

plastic, composite, etc.), an antistatic additive, for example Antistat 10124 from Nexus Resin Group of Mystic, CT 06355, maybe may be blended with the GV-5H material.

[0056] As noted above, the manual treadmill disclosed herein includes a force translation system that incorporates a variety of innovations to translate the forward force created by the user into rotation of the running belt and permit the user to maintain a substantially static fore and aft position on the running belt while running. One of the ways to translate this force is to configure the running belt 16 to be more responsive to the force generated by the user. For example, by minimizing the friction between the running belt 16 and the other relevant components of the treadmill 10, more of the force the user applies to the running belt 16 to propel themselves forward can be utilized to rotate the running belt 16.

[0057] Another way to counteract the user-generated force and convert or translate it into rotational motion of the running belt 16 is to integrate a non-planar running surface, such as non-planar running surface 70. Depending on the configuration, non-planar running surfaces can provide a number of advantages. First, the shape of the non-planar running surface may be such that, when a user is on the running surface, the force of gravity acting upon the weight of the user's body helps rotate the running belt. Second, the shapes may be such that it creates a physical barrier to restrict or prevent the user from propelling themselves off the front end 20 of the treadmill 10 (e.g., acting essentially as a stop when the user positions their foot thereagainst, etc.). Third, the shapes of some of the non-planar running surfaces can be such that it facilitates the movement of the running belt 16 there along (e.g., because of the curvature, etc). Accordingly, the force the user applies to the running belt is more readily able to be translated into rotation of the running belt 16.

[0058] As seen in FIGS 1 and 4-5, the running surface 70 is generally non-planar and shown shaped as a substantially complex curve according to an exemplary embodiment. The running surface can be generally divided up into three general regions each having a particular geometric configuration, the front portion 72, which is adjacent to the front shaft assembly 44, the rear portion 74, which is adjacent to the rear shaft assembly 46, and the central portion 76, which is intermediate the front portion 72 and the rear portion 74. In the exemplary embodiment seen in FIGS 1 and 4, the running surface 70 includes a substantially concave

curve 80 and a substantially convex curve 82. At the front portion 72 of the running surface 70, the relative height or distance of the running surface 70 relative to the ground is generally increasing moving forward along the longitudinal axis 18 from the central portion 76 toward the front shaft assembly 44. This increasing height configuration provides one structure to translate the forward running force generated by the user into rotation of the running belt 16. To initiate the rotation of the running belt 16, the user places her first foot at some point along the upwardly-inclined front portion 72 of the running surface 70. As the weight of the user is transferred to this first foot, gravity exerts a downward force on the user's foot and causes the running belt 16 to move (e.g., rotate, revolve, advance, etc.) in a generally clockwise direction as seen in FIGS 1 (or counterclockwise as seen in FIG. 4). As the running belt 16 rotates, the user's first foot will eventually reach the lowest point in the non-planar running surface 70 found in the central portion 76, and, at that point, gravity is substantially no longer available as a counteracting source to the user's forward running force. Assuming a typical gait, at this point the user will place her second foot at some point along the upwardly-inclined front portion 72 of the running belt 16 and begin to transfer weight to this foot. Once again, as weight shifts to this second foot, gravity acts on the user's foot to continue the rotation of the running belt 16 in the clockwise direction as seen in FIG. 1. This process merely repeats itself each and every time the user places her weight-bearing foot on the running belt 16 at any position vertically above the lowest point of central portion 76 of the running surface 70 of the running belt 16. The upwardly-inclined front portion 72 of the running belt 16 also acts substantially as a physical stop, reducing the chance the user can inadvertently step off the front end 20 of the treadmill 10.

[0059] A user can generally utilize the force translation system of the treadmill 10 to control the speed of the treadmill 10 by the relative placement of her weight-bearing foot along the running belt 16 of the base 12. Generally, the rotational speed of the running belt 16 increases as greater force is applied thereto in the rearward direction. The generally upward-inclined shape of the front portion 72 thus provides an opportunity to increase the force applied to the running belt 16, and, consequently, to increase the speed of the running belt 16. For example, by increasing her stride and/or positioning her weight-bearing foot vertically higher on the front portion 72 relative to the lowest portion of the running belt 16, gravity will exert a greater and greater amount of force on the running belt 16 to drive it rearwardly. In the configuration of

the running belt 16 seen in FIG 1, this corresponds to the user positioning her foot closer to the front end 20 of the treadmill 10 along the longitudinal axis 18. This results in the user applying more force to the running belt 16 because gravity is pulling her mass downward along a greater distance when her feet are in contact with the front portion 72 of the running surface 70. As a result, the relative rotational speed of the running belt 16 and the relative running speed the user experiences is increased. Accordingly, the force translation system is adapted to convert a variable level of force generated by the user into a variable speed of rotation of the belt.

[0060] FIG. 5 illustrates a number of possible locations where a user may position her feet. A-C indicate locations along the front portion 72 of the running surface 70 where a user may place their weight bearing foot. When the user positions her weight bearing foot at location A, she will be running with greater speed than if her weight bearing foot was positioned at locations B or C based upon the fact that the force of gravity is able to have a greater effect as the user's weight bearing foot moves from location A towards the rear of the non-planar running surface 70 as the running belt 16 rotates. At location A, gravity is able to have the greatest impact on the user so that the greatest amount of force is translated into rotation of the running belt 16. A user can decrease her relative running speed by positioning her weight bearing foot at locations B or C. As location B is relatively higher along the front portion 72 than C, gravity is able to exert a greater force on the user and the running belt 16 than if the user's weight bearing foot was positioned at location C.

[0061] Another factor which will increase the speed the user experiences on the treadmill 10 is the relative cadence the user assumes. As the user increases her cadence and places her weight-bearing foot more frequently on the upwardly extending front portion 72, more gravitational force is available to counteract the user-generated force, which translates into greater running speed for the user on the running belt 16. It is important to note that speed changes in this embodiment are substantially fluid, substantially instantaneous, and do not require a user to operate electromechanical speed controls. The speed controls in this embodiment are generally the user's cadence and relative position of her weight-bearing foot on the running surface. In addition, the user's speed is not limited by speed settings as with a driven treadmill.

[0062] In the embodiment shown in FIGS. 1-6, gravity is also utilized as a means for slowing the rotational speed of the running belt. At a rear portion 74 of the running surface 70, the distance of the running surface 70 relative to the ground generally increases moving rearward along the longitudinal axis 18 from the lowest point in the non-planar running surface 70. As each of the user's feet move rearward during her stride, the rear portion 74 acts substantially as a physical stop to discourage the user from moving too close to the rear end of the running surface. To this point, the user's foot has been gathering rearward momentum while moving from the front portion 72, into the central portion 76, and toward the rear portion 74 of the running surface 70. Accordingly, the user's foot is exerting a significant rearwardly-directed force on the running belt 16. Under Newton's first law of motion, the user's foot would like to continue in the generally rearward direction. The upwardly-inclined rear portion 74, interferes with this momentum and provides a force to counter the rearwardly-directed force of the user's foot by providing a physical barrier. As the user's non-leading foot moves up the incline (see position D in FIG. 5), the running surface 70 provides a force that counters the force of the user's foot, absorbing some of the rearwardly-directed force from the user and preventing it from being translated into increasing speed of the running belt 16. Also, gravity acts on the user's weight bearing foot as it moves upward, exerting a downwardly-directed force on the user's foot that the user must counter to lift their foot and bring it forward to continue running. In addition to acting as a stop, the rear portion 74 provides a convenient surface for the user to push off of when propelling themselves forward, the force applied by the user to the rear portion 74 being countered by the force the rear portion 74 applies to the user's foot.

[0063] One benefit of the manual treadmill according to the innovations described herein is positive environmental impact. A manual treadmill such as that disclosed herein does not utilize electrical power to operate the treadmill or generate the rotational force on the running belt. Therefore, such a treadmill can be utilized in areas distant from an electrical power source, conserve electrical power for other uses or applications, or otherwise reduce the "carbon footprint" associated with the operation of the treadmill 10.

[0064] A manual treadmill according to the innovations disclosed herein can incorporate one of a variety of shapes and complex contours in order to translate the user's forward force into rotation of the running belt or to provide some other beneficial feature or element. FIG. 7a

generally depicts the curve defined by the running surface 70 of the exemplary embodiment shown in FIG 1, specifically, substantially a portion of a curve defined by a third-order polynomial. The front portion 72 and the central portion 76 define a concave curve and the rear portion 74 of the running surface 70 defines a convex curve. As the central portion 76 of the running surface 70 transitions to the rear portion 74, the concave curve transitions to the convex curve. In the embodiment shown, the curvature of the front portion 72 and the central portion 76 is substantially the same; however, according to other exemplary embodiments, the curvature of the front portion 72 and the central portion 76 may differ. Please note, the description of the running surfaces as concave and convex provided herein is related to the relative curve which the user's foot would experience on the running surface 70.

[0065] FIGS. 7b-7h illustrate the side profiles of some exemplary non-planar, contoured running surfaces according to the innovations disclosed herein, each including a front portion, a central portion, and a rear portion. Each portion has a particular geometric configuration that is concave, convex, or linear; collectively, the portions define the non-planar running surface. For example, FIG. 7b shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 100, a concave central portion 102, and a concave rear portion 104 according to an exemplary embodiment. In this embodiment, the front portion 100, central portion 102, and rear portion 104 each have different curvatures. According to other exemplary embodiments, one or more of the front, central, and rear portions may have the same curvature.

[0066] FIG. 7c shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 110, a concave central portion 112, and a concave rear portion 114 according to an exemplary embodiment. Once again, this embodiment incorporates a smooth transition between the different curvatures of the front, central, and rear portions.

[0067] FIG. 7d shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 120, a concave central portion 122, and a convex rear portion 124 according to an exemplary embodiment. In this embodiment, the front portion 120 and the rear portion 122 have different curvatures, but these curvatures may be the same according to other exemplary embodiments.

[0068] FIG. 7e shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 130, a convex central portion 132, and a convex rear portion 134 according to an exemplary embodiment. In this embodiment, the front portion 130, the central portion 132, and the rear portion 134 each have the same convex curvature, but the curvature of one or more of the front portion 130, the central portion 132, and the rear portion 134 may differ according to other exemplary embodiments.

[0069] FIG. 7f shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 140, a convex central portion 142, and a convex rear portion 144 according to an exemplary embodiment. In this embodiment, the central portion 142 and the rear portion 144 having the same curvatures, but these curvatures may differ from each other according to other exemplary embodiments.

[0070] FIG. 7g shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 150, a convex central portion 152, and a concave rear portion 154 according to an exemplary embodiment. In this embodiment, the front portion 150 and the central portion 152 having the same curvatures, but these curvatures may differ from each other according to other exemplary embodiments.

[0071] FIG. 7h shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 160, a convex central portion 162, and a concave rear portion 164 according to an exemplary embodiment. In this embodiment, the front portion 160 and the rear portion 164 have different curvatures, but these curvatures may be the same according to other exemplary embodiments.

[0072] According to one exemplary embodiment, the non-planar running surface of the manual treadmill 10 is substantially curved, but that curve integrates one or more linear portions (e.g., that replace a “curved portion” or the curve or that are added/inserted into the curve). The linear portions may be substantially parallel to the longitudinal axis 18 or disposed at an angle relative thereto. FIG. 7i illustrates the profile of a non-planar surface wherein a substantially linear portion 170 has been integrated with a concave curve having a first concave portion 174 to one side of the linear portion 170 and a second concave portion 176 to the opposite side of the linear portion 170 according to an exemplary embodiment. In addition to

the linear portion 170, the first concave portion 174 and the second concave portion 176, the profile further includes a fourth portion shown as a convex portion 178. According to another exemplary embodiment, a linear portion may replace all or a portion of the curve. Alternatively, multiple linear portions may be included in a profile of a non-planar surface.

[0073] FIG. 7j illustrates a linear portion 180 provided at the front of the running surface which transitions into a concave curve 182 which then transitions into a convex curve 184.

[0074] According to an exemplary embodiment, the non-planar running surface of the manual treadmill 10 may include (or be so defined as to include) more or less than three portions. For example, FIG. 7g could be interpreted as defined two portions, the first portion including the front portion and the central portion, which comprise a convex curve having the same curvature throughout the front portion 150 and the central portion 152, and the second portion including the rear portion 154 which generally comprises a concave curve. According to some exemplary embodiments, some non-planar running surfaces include at least three or more portions.

[0075] According to an exemplary embodiment, the profile defined by the non-planar running surface is substantially a portion of a curve defined by any suitable second-order polynomial, but, as clearly demonstrated in FIGS. 7a-j, the profile defined by the non-planar running surface can be a portion of a curve that is a third-order polynomial or a fourth-order polynomial. According to yet another exemplary embodiment, the running surface profile can be substantially defined by a first-order polynomial, in other words, the running surface is substantially planar. An exemplary embodiment of a manual treadmill including a planar running surface will be discussed in more detail below (see e.g., FIG. 35).

[0076] According to an exemplary embodiment, the relative length of each portion of the running surface may vary. In the exemplary embodiment shown, the central portion is the longest. In other exemplary embodiments, the rear portion may be the longest, the front portion may be shorter than the intermediate portion, or the front portion may be longer than the rear portion, etc. It should be noted that the relative length may be evaluated based on the distance the portion extends along the longitudinal axis or as measured along the surface of the running belt itself. One of the benefits of integrating one or more of the various curves or contours into

the running surface is that the contour of the running surface can be used to enhance or encourage a particular running style. For example, a curve integrated into the front portion of the running surface can encourage the runner to run on the balls of her feet rather than having the heel strike the running belt 16 first. Similarly, the contour of the running surface can be configured to improve a user's running biomechanics and to address common running induced injuries (e.g., plantar fasciitis, shin splints, knee pain, etc.). For example, integrating a curved contour on the front portion of the running surface can help to stretch the tendons and ligaments of the foot and avoid the onset of plantar fasciitis.

[0077] One of the difficulties associated with using a running surface that has a non-planar shape is inducing the running belt 16 to assume the non-planar shape and then maintaining the running belt 16 in that non-planar shape when the treadmill is being operated. In addition to discussing this difficulty in more detail below, a number of running belt retention systems providing ways to induce and maintain a belt in a desired non-planar shape to define the running surface are discussed below. Generally, these running belt retention systems are adapted to control the relative contour of the running belt so that the running belt substantially follows the contour of the running surface

[0078] One embodiment of a running belt retention system used to induce the running belt 16 to take-on the non-planar shape and then maintaining that shape, as shown in FIG. 5, is discussed in reference to FIGS. 5-6 and 8-11 in which base 12 is shown further including a pair of opposed bearing rails 200 to support the running belt 16 along with a front synchronizing belt pulley 202, a rear synchronizing belt pulley 204, and a synchronizing belt 206 all of which are interconnected to the running belt 16. The front rear synchronizing belt pulleys 202, 204 may be formed of the same or different materials as the front and rear running belt pulleys 62, 66.

[0079] Referring to FIGS. 6 and 8-9, in particular, the bearing rails 200 are shown including a plurality of bearings 208 and an upper or top profile 210, shown shaped as a complex curve, according to an exemplary embodiment. The bearing rails 200 shown are supported by and preferably mounted to the frame 40 substantially between the front shaft assembly 44 and the rear shaft assembly 46, the support members or elements about which the running belt 16 is

disposed. One bearing rail 200 is coupled to one or more of the cross-members 56 proximate to the inner surface 58 of the left-hand side member 52 and the other bearing rail 200 is coupled to one of more of the cross-members 56 proximate to the inner surface 58 of the right-hand side member 54 thereby fixing the position of the bearing rails 200 relative to the frame 40.

[0080] The bearing rails 200 are preferably configured to facilitate movement of the running belt 16. In the exemplary embodiment seen in FIGS. 8–9, the running belt 16 moves substantially along the top profile 210 of the bearing rails 200. The running belt 16 contacts and is supported in part by the bearings 208 of the bearing rails and bearing 208 are configured to rotate, thereby decreasing the friction experienced by the running belt 16 as the belt moves along the top profile 210. The bearing rails 200 are configured to help achieve the desired shape of the running surface. The shape of the top profile 210 of the bearing rails 200 at least partially corresponds to the desired shape for the running surface 70. The at least somewhat flexible running belt 16 substantially assumes the shape of top profile 210 of the bearing rails 200 by being maintained substantially thereagainst, as will be discussed in more detail later. Accordingly, the running surface 70 has a shape that substantially corresponds to the shape of the top profile 210 of the bearing rails 200. It should be noted that the front and/or rear running belt pulleys may also help define a portion of the shape of the running surface. Also, other suitable shape-providing components may be used in combination with the bearing rails.

[0081] FIG. 9 provides a side view of one of the bearing rails 200 to more clearly show the top profile 210 according to an exemplary embodiment. Similar to the running surface 70, discussed above, the top profile 210 of the bearing rails 200 can be generally divided up into three general regions, the front portion 212 which is adjacent to the front shaft assembly 44 (see e.g., FIG. 5), the rear portion 214 which is adjacent to the rear shaft assembly 46 (see e.g., FIG. 5), and the central portion 216, intermediate the front portion 212 and the rear portions 214. The central portion 216 is shown as a concave curve 218 that has a radius of curvature R_1 . The front portion 212 is further shown as a continuation of the concave curve 218 of the central portion 216, and, thus, also has a radius of curvature of R_1 . The rear portion 214 is shown as a convex curve 220 that has a radius of curvature R_2 . The front portion 212 is shown disposed substantially tangential to the central portion 216, providing a smooth transition therebetween, and helping provide a smooth shape for the running surface 70. The shape of the rear portion

214 also helps provide a smooth transition for the running belt 16 from the bearing rails 200 onto the rear running belt pulleys 66, which helps ensure as much contact as possible between the running belt 16 and the rear running belt pulleys 66. As the shape of the running surface substantially corresponds to the shape of top profile the bearing rails, the shape of the top profile of the bearing rails can necessarily be any of the shapes and/or have any of the variations (e.g., in length of portions, etc.) discussed above in FIGS. 7a through 7j with reference to possible shapes of the running surface.

[0082] According to an exemplary embodiment, each portion of the top profile is disposed substantially tangential to the portions adjacent thereto. According to other exemplary embodiments, less than all of the adjacent portions are disposed substantially tangential to the portions adjacent thereto, meaning the profile does not have an entirely smooth contour.

[0083] According to an exemplary embodiment shown in FIG. 9, R_1 is approximately 7.26 feet. However, it is understood that a radius anywhere from 5 feet to 100-plus feet can be used. The size of the radius which can be used is typically a function of the length of the treadmill which can be accommodated. The range of possible radiuses for a convex bearing rail depends on the shaft-to-shaft distance of the treadmill (see e.g., measurement “x” in FIG. 5, discussed in more detail below). Assuming that the radius of curvature of the curve is R_C , the radius of the front running belt pulley is R_f , and the radius of the rear running belt pulley is R_r , the range of possible radiuses is approximately: $\infty > R_C > (x - R_f - R_r)/2$. For most commercial-available treadmills, x is approximately between 14 inches and 10 feet but the treadmill can certainly be as great as 25 feet in length. According to the exemplary embodiment shown in FIG. 5, x is approximately 57.8 inches in length. According to another exemplary embodiment, x is approximately 77.2 inches in length, with a radius R_1 of approximately 8.67 feet, wherein the greater length x and radius R_1 may facilitate use of the treadmill 10 by users with a longer running gait. The limiting factors in the length are the available space to accommodate the treadmill and the relative cost of constructing such a large treadmill.

[0084] When the treadmill 10 is being operated, the running belt 16 is driven rearwardly and the goal is to ensure that the running belt 16 follows the profile defined by a portion of the circumference of the front running pulleys 62, the contoured profile defined by the bearings

208 supported on the bearing rails 200 and finally by a portion of the circumference of the rear running belt pulleys 66. The particular contour which the running belt 16 assumes on the bottom of the base 12 between the rear running belt pulleys 66 and front running belt pulleys 62 is not terribly critical provided that the running belt continues to move with minimal friction and is not subject to excessive wear or obstruction.

[0085] Following the shape of the bearing rails 200 is not the natural tendency of the running belt for the particular contour seen in FIG. 5. Rather, without more, the running belt 16 tends to be pulled upward, away from the curved bearing rails and across the central portion 76 of the treadmill 10. Under the force of gravity, the weight of the running belt 16 coupled with the relative spacing between the front and rear running belt pulleys 62 and 66, respectively, would likely result in the top surface of the running belt 16 assuming a position of the shortest distance between the two pulleys, namely, a substantially straight line between the two pulleys with any excess length of the running belt 16 collecting on the bottom of the treadmill and hanging below the front and rear running belt pulleys 62 and 66, respectively. Therefore, a system of some sort needs to be integrated into a non-planar running surface treadmill to ensure that the running belt 16 follows the desired contour over the running surface.

[0086] Further referring to FIGS. 5–6 and 8–11, one way to ensure that the running belt 16 follows the contour of the bearing rails 200 and the front and rear running belt pulleys 62, 66 is to utilize the weight of the running belt 16 itself in addition to adjusting the relative size of the front and rear running belt pulleys 62, 66; and/or providing a synchronizing system 222 according to an exemplary embodiment.

[0087] As discussed above, the running belt 16 is disposed about the front and rear running belt pulleys 62, 66 which in turn are disposed about front and rear shafts 64, 68, respectively. Measured along the longitudinal axis 18 between the centerlines of the front and rear shafts 64, 68, the front and rear shafts 64, 68 are spaced a distance x from each other, as shown in FIG. 5. Accordingly, when positioning the running belt 16 about the front and rear running belt pulleys 62, 66, the length of the running belt 16 provided therebetween must be at least x (e.g., the straight-line distance therebetween). It follows that, when the profile of the running surface 70

is non-planar, the length of the running belt provided between the front and rear shafts 64, 68 will be greater than x.

[0088] In the exemplary embodiment shown in FIG. 5, when positioning the running belt 16 about the front and rear running belt pulleys 62, 66, a length of the running belt 16 sufficient to permit the running belt 16 to correspond to (e.g., follow, be positioned against or above, etc.) the desired contours of the bearing rails 200 and the front and rear running belt pulleys 62, 66 is generally disposed between the front and rear shafts 64, 68. At each location between the front and rear shafts 64, 68, the force of gravity pulls downward on the running belt 16. Generally, this force will help pull the running belt 16 downward and against the desired components of base 12. However, gravity can also cause slippage (e.g., over the front running belt pulley 62, over the rear running belt pulley 66, down along curves of the bearing rail 200, etc.) in an amount that is undesirable and the magnitude of these slippage-problems tends to increase when the treadmill 10 is being operated. Accordingly, the solution typically relies on more than the weight of the running belt alone.

[0089] Further referring to FIGS. 5–6 and 8–11, the preferred embodiment of the running belt 16 is shown including two reinforcing belts shown as endless belts 226 and a plurality of slats 228 according to an exemplary embodiment. The endless belts 226 are configured to provide support for the running belt 16 in order to support the weight of a user. The endless belts 226 are shown disposed on opposite sides of the running belt 16, generally interior to the outer, lateral edge of the slats 228. The endless belts 226 are themselves reinforced, and thus help stabilize the sides of the running belt and help prevent stretching of the running belt 16. For example, the endless belts may be reinforced with metal wiring, which is surrounded by a molded plastic coating. According to some exemplary embodiments, more or less than two endless belts may be used. According to other exemplary embodiments, other suitable support elements may be used to provide support for the running belt. Further details regarding the structure of the running belt and endless belt structure are seen in US Pat. No. 5,470,293, titled “Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills,” which is incorporated by reference herein.

[0090] The endless belts 226 are further configured to interact with the front running belt pulleys 62 and the rear running belt pulleys 66. The location of each endless belt 226 laterally, along the width of the running belt 16, substantially corresponds to the location of a longitudinally aligned front running belt pulley 62 and rear running belt pulley 66. Each endless belt 226 includes a first or inner portion 230 and a second or outer portion 232 at an interior surface 236 according to an exemplary embodiment. The inner portion 230 is in contact with an exterior surface 234 of the corresponding running belt pulleys 62, 66. According to some exemplary embodiments, the outer portion 232 is also in contact with the exterior surface 234 of the corresponding running belt pulleys 62, 66.

[0091] FIG. 12 illustrates a running belt and running belt pulley combination wherein the exterior surfaces 234 of the front running belt pulleys 62 are substantially smooth and are in contact with the interior surface 236 of the endless belts 226, which is also substantially smooth according to an exemplary embodiment. The outer portion 232 is shown substantially not in contact with the exterior surfaces 234 of the front running belt pulleys 62. The outer portion 232 is further shown including a plurality of teeth 238 (e.g., being toothed); however, according to other exemplary embodiments, the outer portion may be smooth or have any suitable texture and/or configuration. In this embodiment, both of the running belt pulleys come in contact with the inner, substantially smooth portion of the endless belts, and a toothed portion of the endless belts is disposed to the outside of the running belt pulleys on both sides.

[0092] FIG. 13 illustrates an alternative running belt and running belt pulley combination according to an exemplary embodiment. In this exemplary embodiment, the front running belt pulleys 62' include a first or inner portion 230' and a second or outer portion 232'. The inner portion 230' of the front running belt pulleys 62' is substantially smooth, while the outer portion 232' includes a plurality of teeth, to correspond to the inner and outer portions 230', 232', of the endless belts 226', respectively. In this embodiment, both of the running belt pulleys include an inner, smooth portion and an outer, toothed portion. These portions correspond to an inner, smooth portion of the endless belt and an outer, toothed portion of the endless belt. This endless belt/front running belt pulley configuration is discussed in more detail in U.S. Patent No. 5,470,293, titled "Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills," which is herein incorporated by reference in its entirety.

[0093] According to still another exemplary embodiment, a combination of the endless belt/front running belt pulley configurations shown in FIGS. 12 and 13 is used. In this exemplary embodiment, the smooth belt and pulley configuration shown in FIG. 12 is used for the front running belt pulleys and the combination of smooth and toothed belt and pulley configuration shown in FIG. 13 is used for the rear running belt pulleys. In another exemplary embodiment, the configuration shown in FIG. 13 is used for the front running belt pulleys and the configuration shown in FIG. 12 is used for the rear running belt pulleys.

[0094] The slats 228 of the running belt 16 are configured to help support a user of the treadmill 10. The slats 228 may be made of substantially any suitably sturdy material (e.g., wood, plastic, metal, etc.) and extend generally laterally between the endless belts 226. Each slat 228 is coupled at its ends 252, 254 to the second portions 232 of the endless belts 226 using fasteners. According to other exemplary embodiments, the slats may be otherwise coupled to the endless belts (e.g., adhered, welded, etc.) in the manner disclosed in US Pat. No. 5,470,293, titled "Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills," which is incorporated herein by reference. Each slat is shown to include a portion 229 (e.g., stem, web, etc.) extending inwardly from an interior surface 256 of the slat 228.

[0095] According to an exemplary embodiment, the running belt may be substantially any suitable, continuous loop element, including, but not limited to, a continuous urethane (e.g., polyurethane) loop, a continuous loop made of plastics other than polyurethane, a plastic belt reinforced with reinforcing elements (e.g., metal wire, a relatively harder plastic, wood, etc.), a continuous foam loop, a loop formed by a plurality of interconnected members (e.g., metallic members, wooden members, etc.) in a manner to provide at least some flexibility, etc.

[0096] Referring to FIGS. 6, 10 and 11, another aspect of the solution to ensuring the running belt 16 follows the desired contour involves the utilizing front running belt pulleys 62 that are slightly larger than the rear running belt pulleys 66. That is, the radius of the front running belt pulleys, R_f , is greater than the radius of the rear running belt pulleys, R_r . Assuming the front running belt pulleys 62 are rotating with the same rotational velocity (e.g., angular speed) as the rear running belt pulleys 66, the tangential velocity of the front running belt pulleys 62 is slightly greater than the tangential velocity of the rear running belt pulleys 66. Thus, as the

running belt 16 is driven, the portion of the running belt 16 disposed proximate the front end 20 of the treadmill 10 will be moved over the front running belt pulleys 62 and rearward with slightly greater speed than the rear running belt pulleys 66 move the portion of the running belt 16 proximate thereto. Thus, the front running belt pulleys 62 essentially “push” the running belt 16 rearward, creating a slight amount of excess running belt 16 in the area between the front running belt pulleys 62 and the rear running belt pulleys 66, which helps to counter the force of gravity which would attempt to gather any excess length of running belt 16 on the bottom of the treadmill 10 thereby causing the top surface of the running belt 16 to assume a position of the shortest distance between the two pulleys, namely, a substantially straight line between the two pulleys. Obviously the system cannot tolerate too much excess length of running belt feeding off the front running belt pulley 62 so periodically, a portion of this excess running belt 16 will slip over the rear running belt pulley 66. By specifically balancing the excess running belt 16 coming off the front running belt pulley 62 against the slippage allowed on the rear running belt pulley 66, the running belt 16 will follow the desired concave, convex or linear (or combinations thereof) contours of the running surface.

[0097] If the difference between the radius of the front running belt pulleys 62 and the radius of the rear running belt pulleys 66 is too large, the running belt 16 will begin to bunch up atop the base 12 as too much excess is generated. Accordingly, there is a practical limit of differences between the radius of each of the front running belt pulleys 62 and the radius of each of the rear running belt pulleys 66. Generally, this range may be dependent on the length of the running surface, as measured along the running belt, and/or the shape of the running surface. According to an exemplary embodiment, the size difference between the radii of the front and rear running belt pulleys, $R_f - R_r$, is within the range of approximately $0 < R_f - R_r < 0.100$ inches. Preferably, the size difference between the radii of the front and rear running belt pulleys, $R_f - R_r$, is within the range of approximately $0.005 < R_f - R_r < 0.035$ inches. In one embodiment, the radius of the front running belt pulleys is approximately $7.00'' \pm 0.010''$ and the radius of the rear running belt pulleys is approximately $6.985'' \pm 0.010$. According to another exemplary embodiment, instead of using front and rear running belt pulleys having a radial size difference, the synchronizing belt pulleys may have a radial size difference. Similar to the differently sized front and rear running belt pulleys, the differently sized front and rear synchronizing pulleys would be used to essentially “push” the running belt rearward, creating a

slight amount of excess running belt 16 in the area between the front running belt pulleys and the rear running belt pulleys.

[0098] Another means for ensuring that the running belt 16 follows the desired complex curve is to match the rotational velocity of the front running belt pulleys 62 to that of the rear running belt pulleys 66 utilizing a synchronizing system 222. Further referring to FIGS. 5-6 and 8-11, the synchronizing system 222 is shown generally to comprise the front synchronizing belt pulley 202, the rear synchronizing belt pulley 204, and the synchronizing belt 206 according to an exemplary embodiment.

[0099] The front synchronizing belt pulley 202 is rotatably mounted relative to the front shaft 64, similar to the front running belt pulleys 62. Preferably, the front synchronizing belt pulley 202 is securely mounted directly to the front shaft 64. Similarly, the rear synchronizing belt pulley 204 is fixed relative to the rear shaft 68 and preferably securely mounted to the rear shaft 68. Accordingly, the front synchronizing belt pulley 202 will move with substantially the same rotational speed as the front running belt pulleys 62, and the rear synchronizing belt pulley 204 will move with the same rotational speed as the rear running belt pulleys 66. When the front shaft assembly 44 and the rear shaft assembly 46 are coupled to the frame 40, the front and rear synchronizing belt pulleys 202, 204 are shown disposed exterior to the outer surface 60 of the left-hand side member 52. According to another exemplary embodiment, the front and rear synchronizing belt pulleys may be placed exterior to the outer surface of the right-hand side member of the frame. According to other exemplary embodiments, the synchronizing system may be disposed substantially between the left-hand side member and the right-hand side member of the frame.

[0100] The synchronizing belt 206 is configured to provide a force that helps ensure that the front and rear shafts 64, 68 are rotating (e.g., moving, spinning, etc.) at the same rotational velocity. The synchronizing belt 206 is shown as an endless belt that is adapted to be supported in tension about the front synchronizing belt pulley 202 and the rear synchronizing belt pulley 204, as shown in FIGS. 4-5. As the running belt pulleys 62, 66 and the synchronizing belt pulleys 202, 204 are both substantially fixed relative to the front shaft 64 and the rear shaft 68, the rotation of the front shaft 64 and the rear shaft 68 causes the front synchronizing belt pulley

202 and the rear synchronizing belt pulley 204 to similarly rotate. In response to the motion of the front synchronizing belt pulley 202 and the rear synchronizing belt pulley 204, the synchronizing belt 206, which connects the front shaft assembly 44 and the rear shaft assembly 46, similarly rotates. Because of the tension in the synchronizing belt 206 and the fact that the synchronizing belt pulleys 202, 204 are the same size, the synchronizing belt 206 provides a counter force in response to any deviation in rotational velocity between the front shaft assembly 44 and the rear shaft assembly 46. For example, if the rear shaft assembly 46 was induced to start moving with greater rotational velocity than the front shaft assembly 44, the tension in the upper portion of the synchronizing belt (i.e., that portion of the synchronizing belt that extends generally between the tops of the synchronizing pulleys) would resist any differential rotation between the front and rear synchronizing belt pulleys 202, 204. Continuing with the example, any discrepancy between the rotational velocity of the front and rear shafts 64, 68 is similarly resisted by the engagement of the synchronizing belt 206. Thus, by constraining the relative motion of the front shaft assembly 44 and the rear shaft assembly 46, the synchronizing system 222 keeps their rotational velocity in sync, substantially preventing the front and rear running belt pulleys 62, 66 from becoming unsynchronized and moving at different rotational velocities.

[0101] So, in practice, the running belt 16 is initially installed on the front and rear running belt pulleys 62, 66 and the running belt 16 is manually positioned in the desired position so that a sufficient length of the running belt 16 is positioned along the top of the treadmill and the running belt 16 assumes the desired contour. While the running belt 16 is maintained in this position, the synchronizing belt 206 is mounted to the synchronizing belt pulleys 202, 204 and once the synchronizing belt 206 is installed, it effectively resists differential rotation of the running belt pulleys 62, 66 which could result in loss of the desired contour of the running belt 16.

[0102] It should be noted that the tension in the synchronizing belt 206 also helps maintain the position of the synchronizing belt 206 relative to the synchronizing belt pulleys 202, 204. The tension helps enhance friction between an interior surface 244 of the synchronizing belt 206 and exterior surfaces 246 of the synchronizing belt pulleys 202, 204, making it less likely that the synchronizing belt 206 will slip relative to the synchronizing belt pulleys 202, 204.

[0103] One or more tensioning assemblies 248 may be provided to adjust the tension in the synchronizing belt 206 (see e.g., FIGS. 3 and 6 illustrating tensioning assemblies 248). Tensioning assemblies 248 are configured to move portions of the synchronizing belt 206 relative to one another, stretching the synchronizing belt 206 and maintaining this stretch so that the synchronizing belt 206 can provide the necessary resistance to differential rotation of the front and rear running belt pulleys 62, 66. Alternatively, the tensioning assemblies 248 can be adjusted to release some of the tension in the synchronizing belt 206. Releasing some of the tension may be desirable if the synchronizing belt 206 is too tight, causing excess friction between the synchronizing belt 206 that makes it too difficult to rotate the front and rear shaft assemblies 44, 46 (e.g., greater than desired by the user, too great to function, etc.). The tensioning assemblies 248 are also used when the synchronizing belt 206 is being installed and removed. According to another exemplary embodiment, a single tensioning assembly is used in conjunction with one or more stationary idlers. According to still another exemplary embodiments, any devices or elements suitable for maintaining and/or adjusting the tension in the synchronizing belt may be used.

[0104] Referring to FIG. 14, a synchronizing system 300 is shown according to another exemplary embodiment. The synchronizing system 300 would typically be used in lieu of the previously described synchronizing system 222. In this next exemplary embodiment, the synchronizing system 300 is shown comprising a synchronizing shaft 302 mechanically connected at a first end 304 to a front gear 306 and at a second end 308 to a rear gear 310. The front gear 306 is interconnected with, and preferably directly mounted and fixed relative to, the front shaft 64, and the rear gear 310 is interconnected with, and preferably directly mounted and fixed relative to, the rear shaft 68. Accordingly, the front gear 306 will move with substantially the same rotational speed as the front running belt pulleys 62, and the rear gear 310 will move with the same rotational speed as the rear running belt pulleys 66. When the front shaft assembly 44 and the rear shaft assembly 46 are coupled to the frame 40, the front and rear gears 306, 310 are shown disposed exterior to the outer surface 60 of the right-hand side member 54. According to another exemplary embodiment, the front and rear gears 306, 310 may be placed exterior to the outer surface of the left-hand side member of the frame. According to other exemplary embodiments, the synchronizing system may be disposed substantially between the left-hand side member and the right-hand side member of the frame.

[0105] The synchronizing shaft 302 is configured to provide a force that helps ensure that the front and rear shafts 64, 68 are rotating (e.g., moving, spinning, etc.) at the same rotational velocity. The synchronizing shaft 302 is shown as an elongated, substantially cylindrical member that extends generally between the front shaft 64 and the rear shaft 68. A first threaded portion 312 including a plurality of threads 314 is shown located at the first end 304 of the synchronizing shaft 302 and is configured to mesh with a plurality of teeth 316 of the front gear 306 that is fixed relative to the front shaft 64. A second threaded portion 318 including a plurality of threads 320 is shown located at the second end 308 of the synchronizing shaft 302 and is configured to mesh with a plurality of teeth 322 of the rear gear 310 that is fixed relative to the rear shaft 68.

[0106] The synchronizing shaft 302 rotates in response to the motion of the front gear 306 and the rear gear 310. When the front shaft 64 and the rear shaft 68 rotate in response to the user driving the running belt 16, the front gear 306 and the rear gear 310, which are fixed relative to the front shaft 64 and the rear shaft 68, respectively, similarly rotate. The front gear 306 meshes with and imparts rotational motion to the first threaded portion 312, and, thereby, imparts rotational motion to the synchronizing shaft 302. The rear gear 310 meshes with and imparts rotational motion to the second threaded portion 318, and, thereby, imparts rotational motion to the synchronizing shaft 302.

[0107] Because the synchronizing shaft 302 is rigid and the front and rear gears 306, 310 are the same size, the synchronizing shaft 302 provides a counter force in response to any deviation in rotational velocity between the front shaft assembly 44 and the rear shaft assembly 46. For example, if the rear shaft assembly 46 was induced to start moving with greater rotational velocity than the front shaft assembly 44, the rear gear 310 would be prevented from moving with greater rotational velocity than the front gear 306 because of the synchronizing shaft 302. The second threaded portion 318 is meshed with the rear gear 310. The second threaded portion 318 is fixed relative to the first threaded portion 312. The first threaded portion 312 is meshed with the front gear 306, which is moving with less rotational velocity than the rear gear 310. The front gear 306, being fixed relative to the front shaft assembly 44 which is also traveling at the same rotational velocity, seeks to continue at this rotational velocity. Thus, the force transmitted to the front gear 306 from the rear gear 310 by the synchronizing shaft 302 is

met with a counter force. Specifically, the teeth 322 of the front gear 306 counter the force applied thereto by the threads 314 of the first threaded portion 312 at the first end 304. This counter force substantially prevents the rotational velocity of the synchronizing shaft 302, which includes the second threaded portion 318, from increasing. Stated otherwise, the force applied is sufficient to prevent the second end 308 of the synchronizing shaft 302 from rotationally advancing ahead of the first end 304. As the second threaded portion 318 is prevented from experiencing an increase in rotational velocity, the second threaded portion 318 provides a counter force to the rear gear 310. Specifically, the threads 320 of the second threaded portion 318 counter the force applied thereto by the teeth 322 of the rear gear 310. Thus, the synchronizing shaft 302 constrains the relative motion of the front gear 306 and rear gear 310, and, thereby constrains the relative motion of the front shaft assembly 44 and the rear shaft assembly 46.

[0108] Another embodiment of a running belt retention system used to induce and maintain the running belt in a desired non-planar shape to define the running surface is seen in FIG. 15, specifically a braking system 400 configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface is shown according to an exemplary embodiment. Please note, the section lines 15-15 shown in FIG. 4 do not necessarily suggest that the braking system 400 seen in FIG. 15 is integrated into the manual treadmill depicted in FIG. 4, rather, the section line 15-15 is included in FIG. 4 to show one potential location for the integration of a braking system into a manual treadmill according to the various innovations disclosed herein. The braking system 400 is shown in cooperation with the rear shaft assembly 402 and the synchronizing system 222. The rear shaft assembly 402 differs from the above-discussed rear shaft assembly 46 in that the rear shaft assembly 402 includes a pair of rear running belt pulleys 404 that are substantially the same size as the front running belt pulleys (not shown).

[0109] The braking system 400 has substantially the same effect as the differently sized front and rear running belt pulleys discussed above. That is, the braking system 400 causes a slight amount of excess running belt 16 in the area between the front running belt pulleys and the rear running belt pulleys. More specifically, the braking system 400 causes the rotational velocity of the rear shaft assembly 402 to be slightly lower than the rotational velocity of the front shaft

assembly by applying a frictional force to the rear synchronizing belt pulley 204. Thus, the braking system 400 acts on the synchronizing system 222 to force (e.g., urge, push, move, etc.) the rear shaft assembly 402 out of synch with the front shaft assembly.

[0110] The braking system 400 includes a generally elongated member 406 in cooperation with the synchronizing system 222. The elongated member 406 is coupled to the rear shaft assembly 402 by a bracket 408 having a first side 410 spaced a distance apart from an outer surface 250 of the rear synchronizing belt pulley 204. The elongated member 406 is disposed through an aperture 412 of the bracket 408 and includes a first end 414 disposed to the inside of the first side 410 and a second end 416 disposed to the outside of the first side 410. The first end 414 includes a surface 418 configured to contact the outer surface 250 of the rear synchronizing belt pulley 204. The second end 416 includes a knob 420 configured to be gripped by a person (e.g., a user, a trainer, etc.) and to have a rotational force imparted thereto. An exterior surface of the elongated member 406 is at least partially threaded to correspond to threading at an interior surface defining the aperture 412. Rotating the knob 420, and, thereby, the elongated member 406, in one direction, causes the surface 418 to be advanced toward the outer surface 250 of the rear synchronizing belt pulley 204, and rotating the knob 420 in the opposite direction causes the surface 418 to retreat or be moved away from the outer surface 250 of the rear synchronizing belt pulley 204.

[0111] During operation of the treadmill, the surface 418 of the elongated member 406 is substantially in contact with the outer surface 250 of the rear synchronizing belt pulley 204, creating friction therebetween. As the rear synchronizing belt pulley 204 of the synchronizing system 222 is fixed relative to the rear shaft assembly 402, some of the force directed to the rear shaft assembly 402 to impart rotation thereto must be used to overcome the frictional force between the surface 418 of the elongated member 406 and the outer surface of the rear synchronizing belt pulley 204. As the force needed to overcome the frictional force between the surface 418 of the elongated member 406 and the outer surface 250 of the rear synchronizing belt pulley 204 is no longer being directed into rotation of the rear shaft assembly 402, the rotational velocity of the rear shaft assembly 402 is less than the rotational velocity of the front shaft assembly. Thus, the front running belt pulleys of the front shaft assembly will “push” the running belt rearward, creating a slight amount of excess running belt

16 in the area between the front running belt pulleys and the rear running belt pulleys. This excess length of running belt 16 helps to counter the force of gravity, discussed in more detail above. It should be noted that, because the friction between the surface 418 of the elongated member 406 and the outer surface 250 of the rear synchronizing belt pulley 204 is substantially constant during operation, the rotational velocity will be substantially maintained at the lower rotational velocity.

[0112] The length of excess running belt “pushed” rearward by the front running belt pulleys can be varied by adjusting the position of the surface 418 relative to the outer surface 250 of the rear synchronizing belt pulley 204. If one moves the surface 418 laterally closer to the outer surface 250, the friction therebetween will increase, the differential between the rotational velocity of the rear shaft assembly and the front shaft assembly will increase, and the length of the excess will increase. If one moves the surface 418 away from the outer surface 250, the friction therebetween will decrease (or be removed if they are brought out of contact), the differential between the rotational velocity of the rear shaft assembly and the front shaft assembly will decrease, and the length of the excess will decrease.

[0113] According to another exemplary embodiment, the braking system 400 may be used with front and rear running belt pulleys that have a size differential. In such an embodiment, the braking system 400 would be used to fine tune the length of excess running belt pushed rearward with each rotation of the front and rear running belt pulleys.

[0114] FIG. 16 illustrates another exemplary embodiment of a braking system, shown as braking system 500, configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface. Please note, the section lines 16-16 shown in FIG. 4 do not necessarily suggest that the braking system 500 seen in FIG. 16 is integrated into the manual treadmill depicted in FIG. 4, rather, the section line 16-16 is included in FIG. 4 to show one potential location for the integration of a braking system into a manual treadmill according to the various innovations disclosed herein. The braking system 500 includes a pulley 502 mounted to a rear shaft assembly 504 generally opposite a front shaft assembly, both shaft assemblies having running belt pulleys that are substantially the same size. A belt 506 rotationally couples the pulley 502 to an idler pulley 508. The idler pulley 508 is configured to

be adjustable so that it may be moved towards or away from the pulley 502 along an axis generally parallel to the longitudinal axis 18. Though, it should be noted that the idler pulley may be moved relative to the pulley 502 mounted to the rear shaft assembly along an axis other than one generally parallel to the longitudinal axis 18.

[0115] By adjusting the position of the idler pulley 508 relative to the pulley 502, one can adjust the friction between the belt 506 and the pulleys 502, 508. Moving the idler pulley 508 away from the pulley 502, increases the tension in the belt 506, and, accordingly, increases the friction between the belt 506 and the pulleys 502, 508. Moving the idler pulley 508 toward the pulley 502, decreases the tension in the belt 506, and, accordingly, decreases the friction between the belt 506 and the pulleys 502, 508.

[0116] Similar to the discussion of braking system 400, increasing the friction between the belt 506 and the pulleys 502, 508, increases the differential between the rotation of the rear shaft assembly to which the braking system 500 is coupled and the front shaft assembly. As a corollary, decreasing the friction between the belt 506 and the pulleys 502, 508, decreases the differential between the rotational velocity of the rear shaft assembly 504 and the front shaft assembly. As discussed above, the greater the differential, the greater the length of the excess that the front running belt pulleys push rearward.

[0117] FIG. 17 illustrates another exemplary embodiment of a running belt retention system of the treadmill 10 used to help induce and maintain the running belt in a desired non-planar shape to define the running surface. The treadmill 10 is shown including a plurality of rollers 600 used to support the running belt 16 in place of bearing rails 200, discussed above.

[0118] The each roller 600 is shown extending laterally generally between the left-hand side member 52 and the right-hand side member 54 of the frame 40. Along the longitudinal axis 18, the rollers 600 are disposed adjacent to one another generally between one or more front running belt pulleys 604 and one or more rear running belt pulleys 606. Typically, the running belt used with this exemplary embodiment is a continuous polymer belt without slats; the use of a continuous polymer belt having greater flexibility in the lateral direction than running belt 16 improves the ease of movement of the running belt along the rollers 600. However, other suitable continuous belts may be used according to other exemplary embodiment

[0119] In the exemplary embodiment shown, the one or more front running belt pulleys is shown as a single, front running belt pulley 604 that is substantially a large roller, disposed at the front end 48 of the frame 40. Similarly, the one or more rear running belt pulleys is shown as a single, rear running belt pulley 606 that is a substantially a large roller, disposed at the rear portion of the frame 40. According to other exemplary embodiments, any multiple of running pulleys may be used at one or both of the front end and the rear end, such as front running belt pulleys 62.

[0120] Collectively, the rollers 600 define a top profile 608 similar to the top profile 210 defined by the bearing rails 200, discussed above, and provide for a running belt to move therealong. Similar to the top profile of the bearing rails, the top profile 608 defined by the rollers may be varied (e.g., may include a convex portion and a concave portion, may be modeled by a third-order polynomial, may be modeled by a fourth-order polynomial, etc.).

[0121] The front and rear running belt pulleys 604, 606 and the rollers 600 help define the running surface. In use, the running belt is disposed over the front running belt pulley 604, along the top profile 602 defined by the rollers 600, and over the rear running belt pulley 606. The running belt is maintained in a position substantially along these elements primarily by the weight of the running belt; however, according to other exemplary embodiments, a synchronizing system may also be used to ensure that the running belt is maintained in the desired position.

[0122] Referring to FIGS. 18-21, an embodiment of a running belt retention system including a track system 700 and configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface according to an exemplary embodiment.

[0123] A treadmill according to this exemplary embodiment does not include front and rear shaft assemblies or bearing rails, but, rather, includes a pair of opposed tracks 702 configured to provide for movement of a running belt 16 therealong. The tracks 702 are spaced apart, generally define the path that the running belt 16 will travel, and substantially replicate at least a portion of the running surface. Each track 702 includes a side support wall 708 and a guide portion 710 generally centrally-disposed along the side support wall 708. The guide portion 710 extends from an inner side 712 of the side support wall 708 towards the interior of the

treadmill frame, defined generally between the left-hand side member and the right-hand side member. The guide portion 710 generally defines the contour of the running surface that is defined by the running belt 16 when coupled to the tracks 702. An outer side 714 each side support wall 708 is disposed substantially adjacent to an inner surface of one of the side members of the treadmill frame.

[0124] A plurality of roller or wheel assemblies 716 are connected with, preferably mounted directly to or integral with, each of a plurality of slats 228 of the running belt 16. Each a laterally-oriented slat 228 includes a left-hand end 252 generally opposite a right-hand end 254. One of a plurality of wheel assemblies 716 is coupled at each end 252, 254 of each slat 228 at an interior surface 256. The wheel assemblies 716 are configured to be mated with the tracks 702 and provide for motion of the running belt 16 along the tracks 702.

[0125] Each wheel assembly 716 is shown including first roller or wheel 720 and a second roller or wheel 722 rotatably coupled to a support shown as an elongated connecting member 724. The connecting member 724 connects each wheel assembly 716 to a slat 228 and maintains the relative position of the first wheel 720 and the second wheel 722. When coupled to the track 702, the first wheel 720 of a wheel assembly 716 is disposed to one side the guide portion 710 and rotatably movable therealong, and the second wheel 722 of the wheel assembly 716 is disposed generally opposite the first wheel 720 to the other side of the central guide portion 710.

[0126] The wheels 720, 722 and the tracks 702 are shaped such that when they are mated, the wheels 720, 722 cannot be pulled inwardly off of or pushed outwardly off of the track 702. In the exemplary embodiment shown, the guide portion 710 is shown having a substantially-circular cross section 724 and the wheels 720, 722 are shown having circumferentially-disposed arcuate depressions 726 that receive and travel along an outer curved portion 728 and an inner curved portion 730 of the guide portion 710 of the track 702. According to other exemplary embodiments, the wheels and the track guide portion can have substantially any corresponding shapes that provide for the wheels and the track to mate and that provide for movement of the wheels therealong.

[0127] When the running belt 16 is being driven by a user, the interaction of the guide portion 710 and the first and second wheels 720, 722 helps maintain the belt in the desired non-planar shape. As mentioned above, the tracks 702 generally defines the contour of the running surface defined by the running belt 16. Being coupled to the guide portion 710 of the track 702, each wheel assembly 716 rotates about the track 702, following the contour defined thereby.

[0128] If the running belt 16 began to deviate from the desired path, the interaction between the wheels 720, 722 and the guide portion 710 would substantially prevent undesirable shifting. While being rotatably coupled to the elongated connecting member 724, the axes 732 and 734 of the first wheel 720 and second wheel 722, respectively, are a fixed distance apart. Further, the arcuate depressions 726 of the wheels 720, 722 are in contact with the outer curved portion 728 and inner curved portion 730, respectively. Thus, as a result the interactions between the arcuate depressions 726 and the curved portions 728, 730, any movement of a wheel assembly 716 relative to the track 702 other than along the path defined by the track 702 is countered by a force from the guide portion 710. It should also be noted that the interactions between the depressions 726 of adjacent wheel assemblies 716 and the curved portions 728, 730 of the track 702 may also help keep a wheel assembly 716 in place.

[0129] Referring to FIGS. 22-24, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 800. Similar to track system 700, a treadmill according to this exemplary embodiment does not include front and rear shaft assemblies or bearing rails, but, rather, includes a pair of tracks 802 configured to provide for movement of a running belt 16 therealong. In this exemplary embodiment, each track 802 is shown as an elongated member having a substantially C-shaped cross section that defines a channel 804 having an opening 806 that faces the interior of the frame 40. An outer wall 808 each of the tracks 802 is disposed substantially adjacent to an inner surface of a left-hand or right-hand side member 52, 54 (shown, e.g., in FIG. 2) such that the openings 806 face each other. The outer wall 808 is substantially opposite an inner wall 810

[0130] As discussed above, the running belt 16 includes a plurality of laterally-oriented slats 228 each having a left-hand end 252 generally opposite a right-hand end 254. One of a

plurality of roller or wheel assemblies 812 is coupled at each end 252, 254 of each slat 228 to mate with the tracks 802 and to provide for motion of the running belt 16 along the tracks 802.

[0131] Each wheel assembly 812 is shown including a support shown as a mounting block 814 and a wheel 816 rotatably coupled to the mounting block 814. The mounting block 814 mounted to an interior surface 256 of a slat 228. The wheel 816 is supported relative to the mounting block 814 by an axis 818 that extends substantially parallel to the slats 228 to facilitate positioning the wheel 816 in the channel 804. The wheel 816 is received in the channel 804 and is rotatably movable therewithin to facilitate travel of the running belt 16 along the contour defined by the channel 804. The shape of the channel 804 generally corresponds to the shape of the wheel 816.

[0132] When the running belt 16 is being driven by a user, the walls of the track 802 defining the C-shaped channel 804 help forcibly retain the wheel 816 therein, preventing the wheel from moving in any direction other than along the contour defined by the channel 804, and, thereby, maintaining the running belt 16 in the desired non-planar shape to define the running surface. The outer wall 808 and the inner wall 810 limit the side-to-side, lateral movement of the wheel 816 when it is disposed in the channel 804. Limiting the motion of the wheel 816, similarly limits the motion of the wheel assembly 812 and the slat 228 fixed relative thereto. Further, a first wall 820 substantially opposite a second wall 822 substantially limits the up-and-down motion of the wheel 816 relative to the channel 804. In circumstances where side-to-side and/or up-and-down motion of the wheel 816 occurs, the walls 808, 810, 820, 822 defining the channel 804, providing counter forces to maintain the wheel 816 in the desired position and help direct the wheel 816 along the desired path.

[0133] Referring to FIGS. 25-28, the treadmill 10 is shown including still another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 900. Similar to track system 800, the treadmill according to this exemplary embodiment does not include bearing rails, but, rather, includes a pair of tracks 902 configured to provide for movement of a running belt 16 therealong. In this exemplary embodiment, each track 902 is shown as an elongated member having a substantially C-shaped cross section that defines a channel 904

having an opening 906 that faces the exterior of the track 902. Stated otherwise, each channels 904 extend about an outer periphery 908 of a tracks 902.

[0134] As discussed above, the running belt 16 includes a plurality of laterally-oriented slats 228 each having a left-hand end 252 generally opposite a right-hand end 254. One of a plurality of roller or wheel assemblies 910 is coupled at each end 252, 254 of each slat 228 to mate with the tracks 902 and to provide for motion of the running belt 16 along the tracks 902.

[0135] Each wheel assembly 910 is shown including a support shown as a connecting bar 912 that is substantially T-shaped and connected to a first wheel 914 and a second wheel 916. A first portion 918 of the connecting bar 912 is fixed relative to the interior surface 256 of a slat 228. A second portion 920 extends substantially perpendicular to the first portion 918 and away from the interior surface 256 of the slat 228. The first wheel 914 and the second wheel 916 are connected to the connecting bar 912 by an axis 922 that extends generally parallel to the first portion 918 and perpendicular to the second portion 920 of the connecting bar 912. The first wheel 914 is disposed to one side of the second portion 920 of the connecting bar 912 and the second wheel 916 is disposed opposite the first wheel 914 to the other side of the second portion 920.

[0136] When the wheel assemblies 910 are mated with the tracks 902, the second portion of the connecting bar 912 extends partially into the channel 904, the first wheel 914 is received within a first portion 924 of the channel 904 and the second wheel 916 is disposed within a second portion 926 of the channel 904. The first portion 924 of each channel 904 is disposed proximate to an outer surface 928 of the track 902 relative to the second portion 926.

[0137] When the running belt 16 is being driven by a user, the first wheel 914 and the second wheel 916 of a given wheel assembly rotate within the channel 904, facilitating moment of the running belt 16 in the path defined by the track 902. As the running belt 16 is rotated, the slats 228 are disposed generally exterior to the periphery 908 of the track 902. The walls of the track 902 defining the channel 904 help forcibly retain the wheels 914, 916. An outer wall 930 and an inner wall 932 limit the side-to side movement of the wheels 914, 916, either by coming into contact with the wheels 914, 916 themselves or by coming into contact with another part of the wheel assembly 910 (e.g., the connecting bar 912). Limiting the motion of the wheels 914,

916 and the wheel assembly 910 similarly limits the motion of the slat fixed relative thereto, helping each slat, and, thereby, the running belt 16 to follow the desired path. Further, a first wall 934 substantially opposite a second wall 936 substantially limits the up-and-down motion of the wheels 914, 916 relative to the channel 904. In circumstances where side-to-side and/or up-and-down motion of the wheel 916 occurs, the walls 930, 932, 934, 936 defining the channel 904, providing counter forces to maintain the wheels 914, 916 in the desired position and help direct the wheels 914, 916 along the desired path.

[0138] Referring to FIGS. 29-30, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 1000.

[0139] Instead of using wheel assemblies, such as 716 and 910, discussed above, the treadmill according to this exemplary embodiment utilizes a plurality of magnets 1002 to maintain the running belt 16 in the desired position. One or more magnets 1002 are fixed relative to the interior surface 256 of the slats 228 at locations substantially corresponding to the position of a track 1004, which is typically along the left-hand end 252 and the right-hand end 254 of the slats 228. The magnets 1002 may be coupled by any variety of fasteners or fastening mechanisms. Generally, it is preferable that, when the magnets 1002 are fixed relative to the slats, the fasteners do not directly contact the periphery 1006 of the tracks 1004 to avoid scratching and damage thereto. While it is generally desirable to mount a magnet 1002 to each slat, 228, the number of magnets used will vary depending upon a variety of factors such as the relative weight of the belt and the relative magnetic strength of each magnet.

[0140] The magnets 1002 are configured to magnetically couple the running belt 16 to the track 1004, which is made of metal (e.g., steel) or includes a peripheral metal portion. The magnets 1002 have strength suitable to maintain the running belt 16 in close proximity to a periphery 1006 of the tracks 1004.

[0141] When the treadmill is driven by a user, the force imparted to the running belt 16 is sufficient to permit the magnets to move relative bearing rails, but not to lose the magnetic connection therebetween. According to one exemplary embodiment, as the running belt 16 moves relative to the track 1004, the magnets 1002 are generally spaced a small distance from

the periphery 1006 of the track 1004, helping to further reduce the noise associated with operation of the treadmill. According to other exemplary embodiments, the magnets 1002 are in physical contact with the periphery 1006 of the track 1004 in addition to being magnetically coupled thereto.

[0142] According to an exemplary embodiment similar to track system 1000, a plurality of magnets may be positioned on the frame, track, or other fixed component of the treadmill base to apply a downwardly-directed force to the metal slats of the running belt as it passes over the magnets. For example, the magnets may be positioned on the cross-members 56. As the running belt rotates, the portion passing above the magnets will be drawn downward by the force of the magnets, helping maintain that portion of the running belt (i.e., defining the running surface) in the desired shape.

[0143] Referring to FIGS. 31-34, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 1100.

[0144] The track system 1100 is substantially similar to track system 700, but configured to be operable with a running belt 1102 that is a conventional running belt rather than a slatted running belt 16. The track system 1100 includes a pair of tracks 702 and a wheel assemblies 1104 having substantially the same configuration as wheel assembly 716 with the exception that a securing device shown as a clip 1106 is used to connect the wheel assembly 1104 to the running belt 1102, rather than the elongated connecting member 724. The clip 1106 is shown extending and having a first portion 1108 and a second portion 1110 that opening towards the interior of the treadmill 10 before being secured. When the running belt 1102 shown as a continuous polymer (e.g., urethane) belt is in position, a first edge 1112 of the running belt 1102 is received between a first portion 1108 and a second portion 1110 of the clip 1106 and fixed relative thereto (e.g., by a fastener, etc.). The polymer belt is a urethane belt according to an exemplary embodiment. The urethane belt is desirable heavy enough to help assume the shape of the rollers, but not so thick or heavy that it undesirably impedes movement. The clips extend along the first edge 1112 and the second edge 1114 of the running belt 1102, substantially suspending the belt between the tracks 702. According to an exemplary

embodiment, the securing device may be any securing device suitable for securing an edge portion of the running belt 1102 relative thereto (e.g., a bolt, a clamp, etc.).

[0145] According to still another exemplary embodiment, a treadmill has a track system including a pair of tracks and wheel assemblies. The wheel assemblies include hangers (e.g., magnetic hangers) that are received in channels that are interior to the track, the hangers being slidably movable within the channels. According to one exemplary embodiment, the hangers are substantially I-shaped, having one transverse portion received in the channel and the other transverse portion fixed to an interior side of a slat. According to some exemplary embodiments, the system further includes bearing rails that facilitate motion of the running belt itself and the hangers within the track. The hangers and the channel of the track may have any configuration suitable for facilitating movement of the running belt and maintaining the running belt in the desired non-planar shape.

[0146] The above-described ways of inducing and maintaining the running belt in the desired non-planar shape can also be used with or adapted to a manual treadmill having a planar running surface, such as treadmill 1200 having planar running surface 1202 shown in FIG. 35. The treadmill 1200 is shown substantially similar to treadmill 10, but the running surface is substantially planar. Accordingly, the ability to manually drive the treadmill is substantially dependent on the incline of the running surface 1202 relative to the ground. Ways to adjust this incline for any treadmill disclosed herein will be discussed in more detail later.

[0147] In the exemplary embodiment shown, the running surface 1202 is defined by a running belt 1204 that is disposed about front and rear running belt pulleys of a front and rear shaft assembly, respectively. The running belt 1204 also travels along a pair of bearing rails having a substantially linear top profile that facilitate motion of the running belt 1204.

[0148] As discussed above, the speed controls for the manual treadmill 10 and the various embodiments thereof are generally the user's cadence and relative position of her weight-bearing foot on the running surface. More generally, the running belt 16 of the treadmill 10 is responsive to the weight of the user mounting, dismounting, or running on the treadmill 10. While it is generally desirable for the running belt 16 to be moved rearward, the running belt is capable of rotating forward. Forward rotation of the running belt can create safety concerns.

For example, if a user were to mount the treadmill by placing her weight bearing foot at a location (e.g., location D shown in FIG. 5) along the rear portion 74 of the running surface 70, the running belt 16 may move forward and cause them to lose their footing, resulting in an injury or simply an unpleasant user experience.

[0149] A number of safety devices may be used with the treadmill 10 to help prevent undesirable forward rotation of the running belt 16. FIG. 36 illustrates a safety device shown as a one-way bearing assembly 1300 according to an exemplary embodiment. The one-way bearing assembly 1300 is a motion restricting element that is configured to permit rotation of at least one of the front and rear shaft assemblies 44, 46 (and hence the running belt 16) in only one direction, preferably clockwise as seen in FIGS 1 and 5.

[0150] In the exemplary embodiment shown, the one way bearing assembly 1300 is disposed about and cooperates with the rear shaft 68 as shown in FIG. 2. The one-way bearing assembly 1300 comprises a housing 1302 which supports an inner ring 1304 that cooperates with the rear shaft 68 and supports an outer ring 1306 fixed relative to the housing 1302. A plurality of sprags (not shown) are disposed between the inner ring 1304 and the outer ring 1306. The sprags are asymmetric, and, thus, provide for motion in one direction and prevent rotation in the opposite direction. The housing 1302 is fixed to a bracket 1310 that is connected to, and preferably directly mounted to, the frame 40 to fix the location of the housing 1302 and prevent movement of the housing 1302 in response to the rotation of the rear shaft 68. It should be noted that the location at which the bracket 1310 is mounted to the frame 40 can be adjusted depending on the location of the rear shaft 68, which may change depending on the shape of the non-planar running surface or the desired tension in the running belt. According to another exemplary embodiment, the one-way bearing may be transitionally fit into the housing, rather than press fit. According to yet another exemplary embodiment, the one-way bearing may include rollers in addition to sprags.

[0151] The one-way bearing assembly 1300 further includes a key 1312 that is fixed relative to the inner ring 1304 and configured to cooperate with a keyway 1314 formed in the rear shaft 68. Viewed from the perspective shown in FIGS. 1 and 5, when the running belt 16 is moving rearward, rotating in the clockwise direction, the rear shaft 68 similarly rotates in the clockwise

direction. The inner ring 1304 of the one-way bearing assembly 1300 rotates with rotational velocity corresponding to the rotational velocity of the rear shaft 68 because of the interaction between the key 1312 and the keyway 1314. If a force is applied by the user to the running belt 16 that urges the rear shaft 68 to rotate counterclockwise, the one-way bearing assembly 1300 provides a counter force, preventing the counterclockwise rotation of the rear shaft 68 and the forward rotation of the running belt 16. Specifically, as the rear shaft 68 begins to move counterclockwise, the interaction of the key 1312 and the keyway 1314 begins to drive the inner ring 1304 of the one-way bearing assembly 1300 rearward. The sprags become wedged between the inner ring 1304 and the outer ring 1306, preventing the counterclockwise rotation of the inner ring and key 1312 disposed therein. The key 1312, by virtue of its inability to rotate, provides a counterforce to the keyway 1314 as the keyway continues to attempt to rotate counterclockwise. By preventing the keyway 1314 from moving counterclockwise, the one-way bearing assembly 1300 thus prevents the rear shaft 68, the rear running belt pulleys 66, and running belt 16 from rotating counterclockwise as seen in FIGS 1 and 5.

[0152] FIG. 38 illustrates another safety device that may be used with the treadmill 10, shown as a one-way bearing assembly 1500 according to an exemplary embodiment. The one-way bearing assembly 1500 is a motion restricting element that is configured to permit rotation of at least one of the front and rear shaft assemblies 44, 46 (and hence the running belt 16) in only one direction, preferably clockwise as seen in FIGS 1 and 5.

[0153] In the exemplary embodiment shown, the one-way bearing assembly 1500 is disposed about and cooperates with the rear shaft 68. The one-way bearing assembly 1500 comprises a housing 1502 which supports an inner ring 1504 that cooperates with the rear shaft 68 and supports an outer ring 1506 fixed relative to the housing 1502. A plurality of sprags (not shown) are disposed between the inner ring 1504 and the outer ring 1506. The sprags are asymmetric, and, thus, provide for motion in one direction and prevent rotation in the opposite direction. The one-way bearing assembly 1500 is further shown to include a first snap ring 1532 and a second snap ring 1534, which are configured to seat in a first circumferential groove 1536 and a second circumferential groove 1538 on the rear shaft 68, respectively. When installed, the first snap ring 1532 is supported inboard of and adjacent to the inner ring 1504, and the second snap ring 1534 is supported outboard of and adjacent to the inner ring

1504, thereby further restricting axial motion of the one-way bearing assembly 1500 relative to the rear shaft 68.

[0154] The housing 1502 is supported by a stud 1520 which is coupled to the frame 40. The stud 1520 may be separated or spaced apart from the housing 1502 by a spacer 1522 and a sleeve 1523 which may be restrained on the stud 1520 by a nut 1524 and a washer 1526. The sleeve 1523 of the embodiment shown is formed of rubber and is configured to reduce noise, wear, and shock load between the housing 1502 and the stud 1520 and/or the spacer 1522. The housing 1502 includes a plurality of legs, shown as a first leg 1516 and a second leg 1518, which extend on either side of the stud 1520. Accordingly, the stud 1520 resists rotational motion of the housing 1502 in response to rotation of the rear shaft 68 and may provide sufficient reactive or counter force to the housing 1502 to enable the one-way bearing assembly 1500 to prevent counterclockwise rotation of the rear shaft 68. Supporting the one-way bearing assembly 1500 in this manner negates the need for fixing the housing 1502 to the frame 40 or an intermediary bracket. Accordingly, the housing 1502 may move with the rear shaft 68 (e.g., the housing 1502 may pivot about the stud 1520) as the rear shaft 68 flexes under load, thereby reducing side loading on the inner ring 1504, which in turn reduces wear on, and extends the life of, the one-way bearing assembly 1500.

[0155] It should be noted that the location at which the stud 1520 is mounted to the frame 40 can be adjusted depending on the location of the rear shaft 68, which may change depending on the shape of the non-planar running surface or the desired tension in the running belt. Furthermore, the stud 1520 need not be positioned below or downward from the rear shaft 68, as shown, but may be located in any direction relative to the rear shaft 68. According to another exemplary embodiment, the one-way bearing may be transitionally fit into the housing, rather than press fit. According to yet another exemplary embodiment, the one-way bearing may include rollers in addition to sprags.

[0156] The one-way bearing assembly 1500 further includes a key 1512 that is fixed relative to the inner ring 1504 and configured to cooperate with a keyway 1514 formed in the rear shaft 68. Viewed from the perspective shown in FIGS. 1 and 5, when the running belt 16 is moving rearward, rotating in the clockwise direction, the rear shaft 68 similarly rotates in the clockwise

direction. The inner ring 1504 of the one-way bearing assembly 1500 rotates with rotational velocity corresponding to the rotational velocity of the rear shaft 68 because of the interaction between the key 1512 and the keyway 1514. If a force is applied by the user to the running belt 16 that urges the rear shaft 68 to rotate counterclockwise as seen in FIGS. 1 and 5, the one-way bearing assembly 1500 provides a counter force, preventing the counterclockwise rotation of the rear shaft 68 and the forward rotation of the running belt 16. Specifically, as the rear shaft 68 begins to move counterclockwise, the interaction of the key 1512 and the keyway 1514 begins to drive the inner ring 1504 of the one-way bearing assembly 1500 rearward. The sprags become wedged between the inner ring 1504 and the outer ring 1506, preventing the counterclockwise rotation of the inner ring and key 1512 disposed therein. The key 1512, by virtue of its inability to rotate, provides a counterforce to the keyway 1514 as the keyway continues to attempt to rotate counterclockwise. By preventing the keyway 1514 from moving counterclockwise, the one-way bearing assembly 1500 thus prevents the rear shaft 68, the rear running belt pulleys 66, and running belt 16 from rotating counterclockwise as seen in FIGS 1 and 5.

[0157] Other safety devices to help prevent undesirable forward rotation of the running belt 16 may include cam locking systems, which may be particularly well-suited for use in conjunction with track systems 700, 800, and 900. Also, taper locks, a user operated pin system, or a band brake system with a lever may be utilized.

[0158] Controlling the operation of the running belt 16 in ways in addition to preventing rearward rotation, can help improve the safety of the treadmill and/or help a user adjust the treadmill for a desirable level of performance. Including an incline or elevation adjustment system is one way to provide these benefits. As mentioned above, as the increasing or decreasing of the relative height or distance of the running surface relative to the ground is one way that the operation, most typically the speed, of the treadmill can be adjusted. Accordingly, adjusting the incline of the base of the treadmill results in an adjustment to the speeds a user can achieve and/or how easy or challenging it is for the user to achieve certain speeds.

[0159] Referring back to FIGS. 1-6, a plurality of nuts 270 are fixed, and more preferably welded, to the bottom of the frame 40 allow the feet 28 to be adjusted. The feet 38 include a

lower or base portion 272 and a threaded shaft 274 extending vertically upward from the base portion 272 according to an exemplary embodiment. Generally, by increasing the distance between the nuts 270 and the base portions 272 of the feet 28 at the front end 48 of the frame 40 relative to the rear end 50, the incline of the base 12 will increase. Stated otherwise, the angle between the longitudinal axis 18 and the ground will increase. Similarly, the distance between the nuts 270 and the base portions 272 of the feet at the rear end 50 may be decreased relative to the feet 28 at the front end 48, thereby increasing the incline. By increasing the incline, a user is typically able to achieve greater speeds on the treadmill 10.

[0160] Treadmill 1200 shown in FIG. 35 preferably has at least some incline (i.e., the longitudinal axis of the treadmill to be other than parallel to the ground) when in operation as the shape of the running surface, substantially planar, does not provide for increases and decreases in height in and of itself. On the other hand, the longitudinal axes of the treadmills having non-planar running surfaces may be parallel to the ground or at an incline thereto during operation. It should be noted that, while it is generally desirable to have the front shaft at a height at or above the height of the rear shaft, with some running surface configurations, desirable orientations can be achieved by raising the rear shaft to a location above the front shaft relative to the ground.

[0161] In some cases, the user may want to decrease the incline of the treadmill (e.g., to decrease the speeds the treadmill can achieve, etc.). For example, the user may want to utilize a relatively long stride, but does not want to be running at such high speeds. This can be accomplished by lowering the incline of the treadmill from the higher incline position. Once in the lowered position, the same stride the user was using at the higher incline position will typically result in the user running at lower speeds in the lower incline position. This same principle can also be applied for the purposes of safety. That is, keeping the front of the treadmill at a lower incline position or lowering the treadmill to a lower incline position can help prevent a user from achieving speeds that are too great for them (e.g., that would cause them to be off-balance, lose control, be injured, etc.).

[0162] Because the treadmill is preferably manually operated, it does not have an external power source which can be utilized to operate a height adjusting motor as is found in

conventional treadmills. Therefore, a manual height adjusting system is preferably integrated into the treadmill. Referring to FIG. 37, an example of a manual incline or elevation adjustment system 1400 is shown according to an exemplary embodiment. A hand crank 1402 configured to be operated by a person, such as the user, is provided allow a user to operate the incline adjustment system 1400 to adjust the incline of the base 12 of the treadmill 10 relative to the ground. The front shaft 64 may be lowered relative to the rear shaft 68 and/or the front shaft 64 may be raised relative to the rear shaft 68 using the hand crank 1402. In an alternative exemplary embodiment, the front shaft may be maintained at a position above the ground, and the rear shaft may be raised or lowered relative thereto adjust the incline.

[0163] Generally, the hand crank 1402 includes a handle portion 1404 disposed parallel to and spaced a distance from a shaft 1406 that is coupled to the frame 40 (e.g., with a bracket). When assembled, a drive belt or chain 1407 is disposed about a gear 1408 that is positioned about the shaft 1406 of the hand crank 1402. Rotational motion can be imparted to the gear 1408 by rotating the handle portion 1404. In response to rotation of the gear 1408, the drive belt 1407 causes a sprocket 1410 is fixed relative to an internal connecting shaft 1412 of the internal connecting shaft assembly 1414 to rotate. The internal connecting shaft assembly 1414 further includes a pair of drive belts or chains 1416 that are operably coupled to gears 1418 of rack and pinion blocks 1420. The rotation of the internal connecting shaft 1412 causes the drive belts or chains 1416 to rotate gears 1418. As the gears 1418 rotate, a pinion (not shown) disposed within the rack and pinion blocks 1420 imparts linear motion to the racks 1422, thereby operably raising or lowering the base 12 of the treadmill 10 depending on the direction of rotation of the handle portion 1404 of the hand crank 1402.

[0164] According to another exemplary embodiment, an incline adjustment system that is a gas assisted un-weighting incline adjustment system may be utilized. According to other exemplary embodiments, any suitable linear actuator may serve as an incline adjustment system for the manual treadmill disclosed herein.

[0165] According to an exemplary embodiments, the incline of one or more portions of the running surface may be adjusted independent of adjusting the incline of the base. For example, one or more portions of a bearing rail may be configured to be movable relative to one or more

other portion of the bearing rail. In one exemplary embodiment, a bearing rail is divided into a first portion and a second portion movable relative to each of the about a pivot point disposed therebetween. A person (e.g., a user, trainer, technician, etc.) can adjust the operational characteristics of the treadmill (similar to the discussion of using running surfaces having different curved profiles above) by merely adjusting the relative position of the bearing rail portions. If the user wants to achieve greater speeds, they may increase the incline of the front portion, while leaving the center and rear portions unchanged. If the user would like to alter the configuration of the treadmill to more strongly encourage running on the balls of their feet, they might increase the incline of the front and rear portions from a higher radius of curvature so that they collectively define a lower radius of curvature. Adjustments to the position of the bearing rails may be imparted using a crank, or other suitable device.

[0166] It is further contemplated that, because the treadmill 10 does not require an electric motor for operation, it is well suited for operation in an aquatic environment. For example, the treadmill 10 may be at least partially submerged in a pool, thereby providing added resistance due to hydrodynamic drag on a user and/or reducing footfall impact due to the buoyancy of the user. Accordingly, a submerged embodiment of the treadmill 10 may be used for training and/or rehabilitation purposes. Modifications may be made to the treadmill 10 for use in an aquatic environment. For example, the treadmill 10 may include sealed bearings and components formed of corrosion-resistant materials (e.g., plastic, composite, stainless steel, brass, etc.) to extend its useful life. Further, the shape of the running surface 70 may also be modified to compensate for the buoyancy of the user in water and to compensate for the effects of salinity on buoyancy. For example, it is contemplated that the shape of the running surface 70 may be different for a treadmill 10 used in a freshwater environment and a highly saline environment.

[0167] A number of other devices, both mechanical and electrical, may be used in conjunction with or cooperate with a treadmill according to this disclosure. FIG. 1, for example, shows a display 280 adapted to calculate and display performance data relating to operation of the treadmill according to an exemplary embodiment. The display 280 includes an independent power source (e.g., a battery) that provides for the display 280 to be electrically-operative. The feedback and data performance analysis from the display may include, but are

not limited to, speed, time, distance, calories burned, heart rate, etc. For example, a the display may include a sensor that is responsive to the position of a magnet on one of the running belt pulleys. The sensor is configured to recognize every time the magnet rotates past (e.g., moves past, crosses, etc.) a certain location. With this data, the display may calculate the speed at which the user is running and then provide this data to them via a user interface. According to other exemplary embodiments, other displays, cup holders, cargo nets, heart rate grips, arm exercisers, TV mounting devices, user worktops, and/or other devices may be incorporated into the treadmill.

[0168] As utilized herein, the terms “approximately,” “about,” “substantially,” and similar terms are intended to have a broad meaning in harmony with the common and accepted usage by those of ordinary skill in the art to which the subject matter of this disclosure pertains. It should be understood by those of skill in the art who review this disclosure that these terms are intended to allow a description of certain features described and claimed without restricting the scope of these features to the precise numerical ranges provided. Accordingly, these terms should be interpreted as indicating that insubstantial or inconsequential modifications or alterations of the subject matter described and are considered to be within the scope of the disclosure.

[0169] It should be noted that the term “exemplary” as used herein to describe various embodiments is intended to indicate that such embodiments are possible examples, representations, and/or illustrations of possible embodiments (and such term is not intended to connote that such embodiments are necessarily extraordinary or superlative examples).

[0170] For the purpose of this disclosure, the term “coupled” means the joining of two members directly or indirectly to one another. Such joining may be stationary or moveable in nature. Such joining may be achieved with the two members or the two members and any additional intermediate members being integrally formed as a single unitary body with one another or with the two members or the two members and any additional intermediate members being attached to one another. Such joining may be permanent in nature or may be removable or releasable in nature.

[0171] It should be noted that the orientation of various elements may differ according to other exemplary embodiments, and that such variations are intended to be encompassed by the present disclosure.

[0172] It is important to note that the constructions and arrangements of the manual treadmill as shown in the various exemplary embodiments are illustrative only. Although only a few embodiments have been described in detail in this disclosure, those skilled in the art who review this disclosure will readily appreciate that many modifications are possible (e.g., variations in sizes, dimensions, structures, shapes and proportions of the various elements, values of parameters, mounting arrangements, use of materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter recited in the claims. For example, elements shown as integrally formed may be constructed of multiple parts or elements, the position of elements may be reversed or otherwise varied, and the nature or number of discrete elements or positions may be altered or varied. The order or sequence of any process or method steps may be varied or re-sequenced according to alternative embodiments. Other substitutions, modifications, changes and omissions may also be made in the design, operating conditions and arrangement of the various exemplary embodiments without departing from the scope of the present disclosure.

WHAT IS CLAIMED IS:

1. A manually powered treadmill comprising:
 - a frame having a front end and a rear end positioned opposite the front end;
 - a front shaft rotatably coupled to the frame at the front end;
 - a rear shaft rotatably coupled to the frame at the rear end;
 - a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;
 - a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;
 - a running belt supported by the first bearing rail and the second bearing rail and disposed about the front shaft and the rear shaft, wherein the running belt follows a curved running surface; and
 - a safety device coupled to at least one of the front shaft and the rear shaft, wherein the safety device is structured to substantially prevent rotation of at least one of the front shaft and the rear shaft in a first rotational direction while permitting rotation of the at least one of the front shaft and the rear shaft in a second rotational direction opposite the first rotational direction.
2. The manually powered treadmill of claim 1,
 - wherein the frame includes at least one cross-member, a left side member, and a right side member; and
 - wherein the at least one cross-member extends between the left side member and the right side member.
3. The manually powered treadmill of claim 2, wherein each one of the first and second bearing rails are coupled to at least one of the at least one cross-member.
4. The manually powered treadmill of claim 1, wherein each one of the first and second bearing rails are attached longitudinally to the frame between the front shaft and the rear shaft.

5. The manually powered treadmill of claim 1, wherein each one of the first bearing rail and the second bearing rail define in part a top profile corresponding to the curved running surface.

6. The manually powered treadmill of claim 1, wherein the safety device includes a one-way bearing.

7. The manually powered treadmill of claim 6, wherein the one-way bearing includes an inner ring, an outer ring, and a plurality of sprags disposed between the inner ring and outer ring, wherein the plurality of sprags are asymmetric shaped to substantially prevent rotation of the inner ring in the first rotational direction while permitting rotation of the inner ring in the second rotational direction.

8. The manually powered treadmill of claim 7, further comprising a key that is fixed relative to the inner ring and a keyway formed in the rear shaft, wherein the key is configured to cooperate with the keyway to prevent rotation of the rear shaft in the first rotational direction while permitting rotation of the rear shaft in the second rotational direction.

9. The manually powered treadmill of claim 7, further comprising a key that is fixed relative to the inner ring and a keyway formed in the front shaft, wherein the key is configured to cooperate with the keyway to prevent rotation of the front shaft in the first rotational direction while permitting rotation of the front shaft in the second rotational direction.

10. The manually powered treadmill of claim 1, further comprising a handrail attached to the frame and structured to provide a support structure for the user of the manually powered treadmill.

11. A manually powered treadmill, comprising:
a frame having a front end and a rear end positioned opposite the front end;
a front shaft attached to the frame adjacent the front end;
a rear shaft attached to the frame adjacent the rear end;
a running belt at least partially disposed about the front shaft and the rear shaft, wherein the running belt includes a front belt portion proximate the front end, a rear belt portion

proximate the rear end, and a central belt portion intermediate the front and rear belt portions, wherein the central belt portion is positioned vertically closer to a ground surface supporting the frame than the front and rear belt portions such that the running belt follows a curved running surface; and

a safety device for substantially preventing rotation of at least one of the front shaft and the rear shaft in a first rotational direction while permitting rotation of the at least one of the front shaft and the rear shaft in a second rotational direction opposite the first rotational direction.

12. The manually powered treadmill of claim 11, wherein the safety device includes a one-way bearing.

13. The manually powered treadmill of claim 11, further comprising a pair of wheels mounted to the frame, wherein the pair of wheels are mounted so that the pair of wheels are not in contact with the ground surface when the manually powered treadmill is in an operating position.

14. The manually powered treadmill of claim 11, further comprising support feet coupled to the frame, wherein the support feet are vertically adjustable to adjust an incline of the manually powered treadmill relative to the ground surface.

15. The manually powered treadmill of claim 11, further comprising at least one front pulley coupled to the front shaft and at least one rear pulley coupled to the rear shaft, wherein a radius of the at least one front pulley is greater than a radius of the at least one rear pulley.

16. The manually powered treadmill of claim 11, further comprising a braking system configured to induce and maintain the curved running surface.

17. The manually powered treadmill of claim 16, wherein the braking system includes a pulley mounted to the rear shaft, an idler pulley, and a belt disposed about the pulley and the idler pulley, wherein the idler pulley is movably adjustable closer to and further from the pulley, wherein adjustment of the idler pulley adjusts an amount of friction provided by the braking system to the rear shaft to either reduce or increase an ease of rotation of the rear shaft.

18. The manually powered treadmill of claim 11, further comprising:
 - a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame; and
 - a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;
 - wherein the running belt is at least partially supported by the first bearing rail and the second bearing rail.
19. The manually powered treadmill of claim 18, wherein each of the first and second bearing rails are attached longitudinally to the frame between the front shaft and the rear shaft.
20. A manually powered treadmill, comprising:
 - a frame having a front end and a rear end;
 - a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;
 - a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;
 - a handrail attached to the frame and structured to provide a support structure for a user of the manually powered treadmill;
 - a pair of wheels mounted to the frame, wherein the pair of wheels are mounted so that the pair of wheels are not in contact with a ground surface when the manually powered treadmill is in an operating position;
 - at least two support feet coupled to the frame, wherein the support feet are vertically adjustable to adjust an incline of the manually powered treadmill relative to the ground surface;
 - a running belt supported by the first and second bearing rails, wherein the running belt follows a curved running surface; and
 - a safety device coupled to the frame and operatively coupled to the running belt, wherein the safety device is structured to substantially prevent movement of the running belt in a first direction and permit movement of the running belt in a second direction opposite the first direction.

21. The manually powered treadmill of claim 20, further comprising a sensor configured to acquire data indicative of a speed of the running belt.

22. The manually powered treadmill of claim 20,
wherein the frame includes at least one cross-member, a left side member, and a right side member; and

wherein the at least one cross-member extends between the left side member and the right side member.

23. The manually powered treadmill of claim 22, wherein each one of the first and second bearing rails are coupled to at least one of the at least one cross-member.

24. The manually powered treadmill of claim 20, wherein the safety device includes a one-way bearing, wherein the one-way bearing includes an inner ring, an outer ring, and a plurality of sprags disposed between the inner ring and outer ring, wherein the plurality of sprags are asymmetric shaped to substantially prevent rotation of the inner ring in the first direction while permitting rotation of the inner ring in the second direction.

25. The manually powered treadmill of claim 24, further comprising a key that is fixed relative to the inner ring and a keyway formed in at least one of the front shaft and the rear shaft, wherein the key is adapted to cooperate with the keyway to prevent rotation of the at least one front shaft and rear shaft in the first direction while permitting rotation of the at least one front shaft and rear shaft in the second direction.

26. A method, comprising:
providing a manually powered treadmill, the manually powered treadmill having a frame with a front end and rear end;
providing a first bearing rail and a second bearing rail, the first and second bearing rails extending longitudinally on the frame, wherein the first and second bearing rails define a curved top profile;
disposing a running belt on the first bearing rail and the second bearing rail such that the running belt follows a top curved running surface corresponding to the curved top profile of the first and second bearing rails;

permitting movement of the running belt in a first direction; and
substantially preventing movement of the running belt in a second direction opposite the
first direction.

ABSTRACT

A manually operated treadmill is provided. The treadmill includes a treadmill frame, a front shaft rotatably coupled to the treadmill frame, a rear shaft rotatably coupled to the treadmill frame, a running belt including a contoured running surface upon which a user of the treadmill may run, wherein the running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running belt to rotate about the front shaft and the rear shaft without the rotation of the running belt being generated by a motor, and a one-way bearing assembly configured to prevent rotation of the running surface of the running belt in one direction.

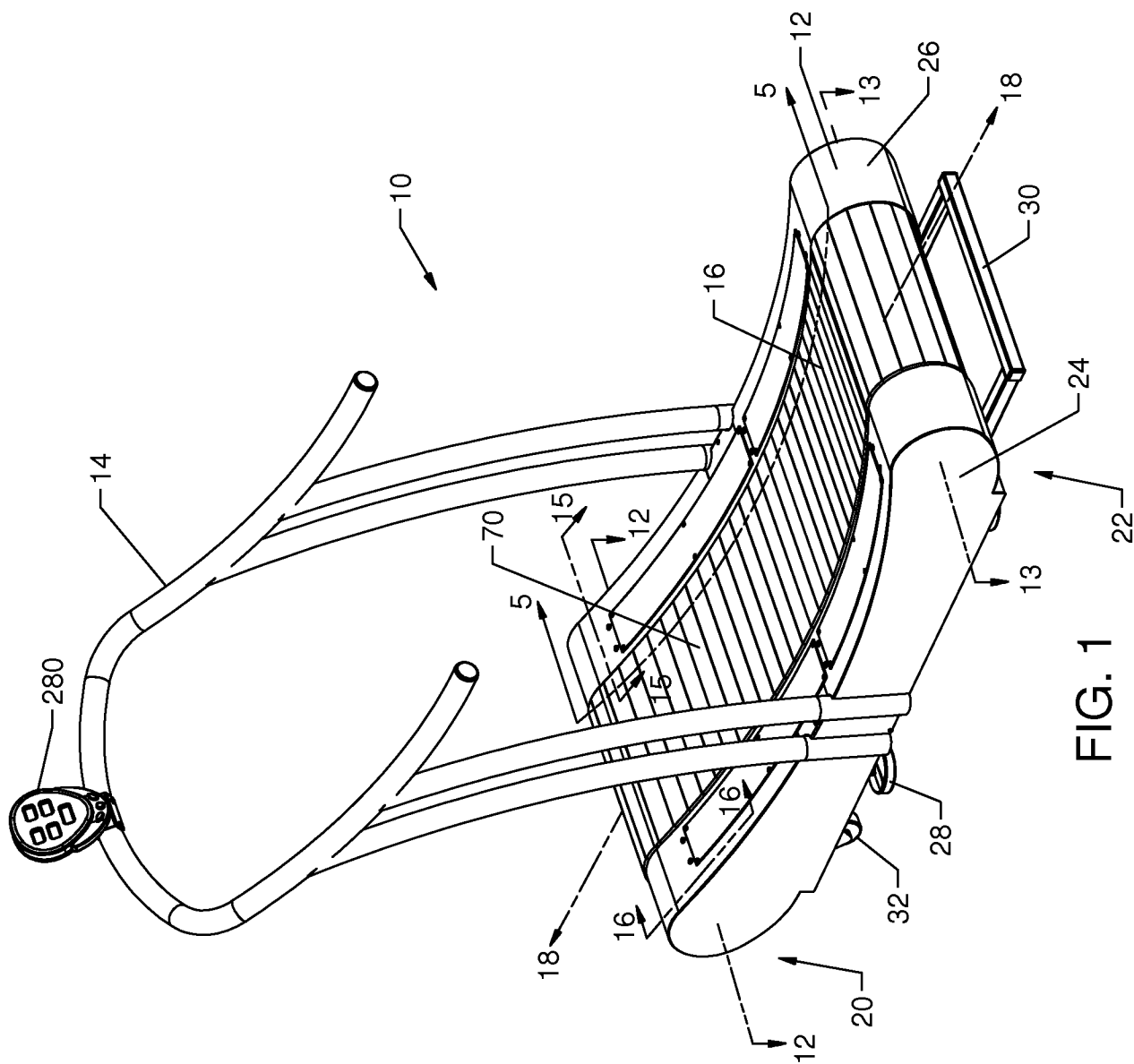


FIG. 1

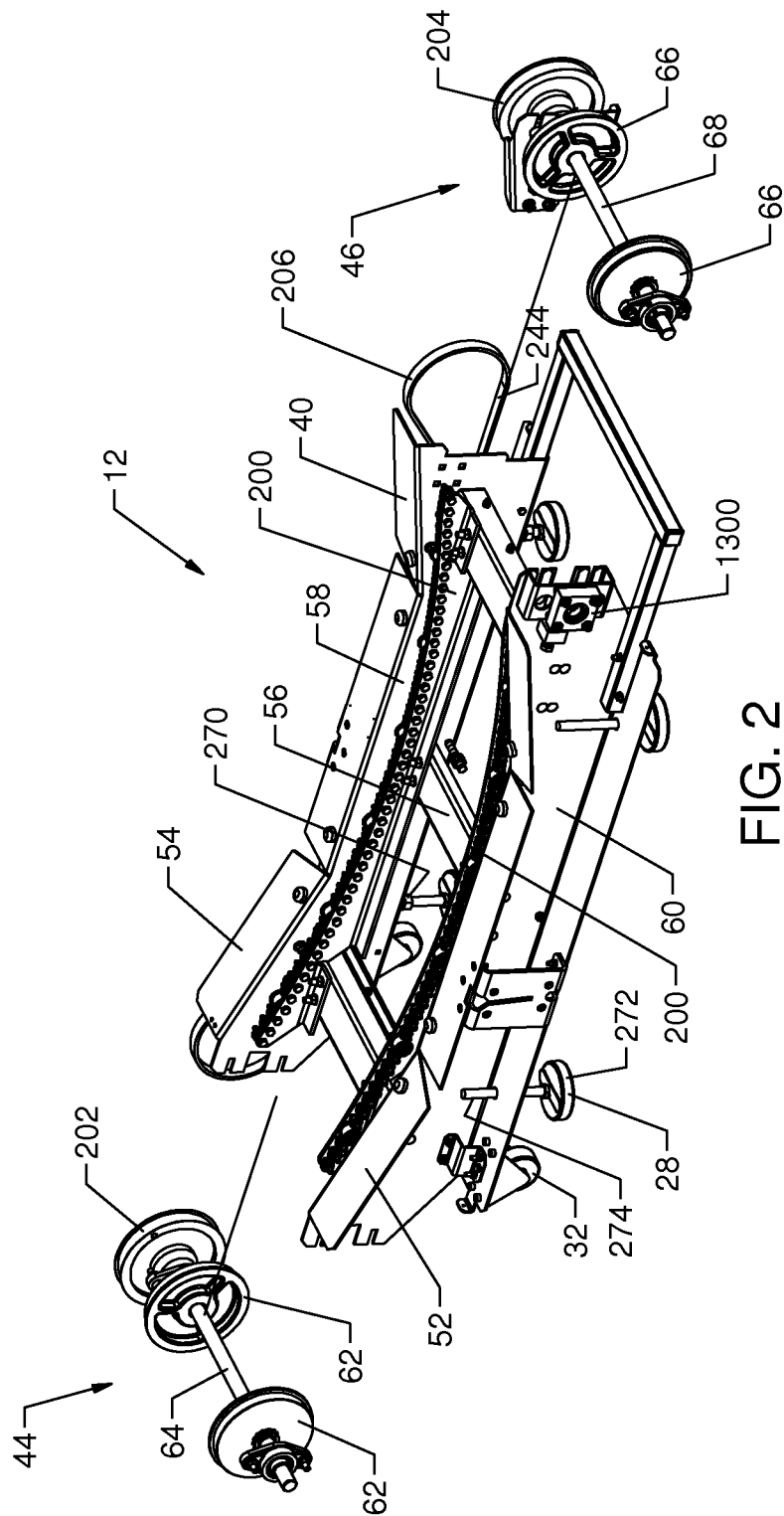


FIG. 2

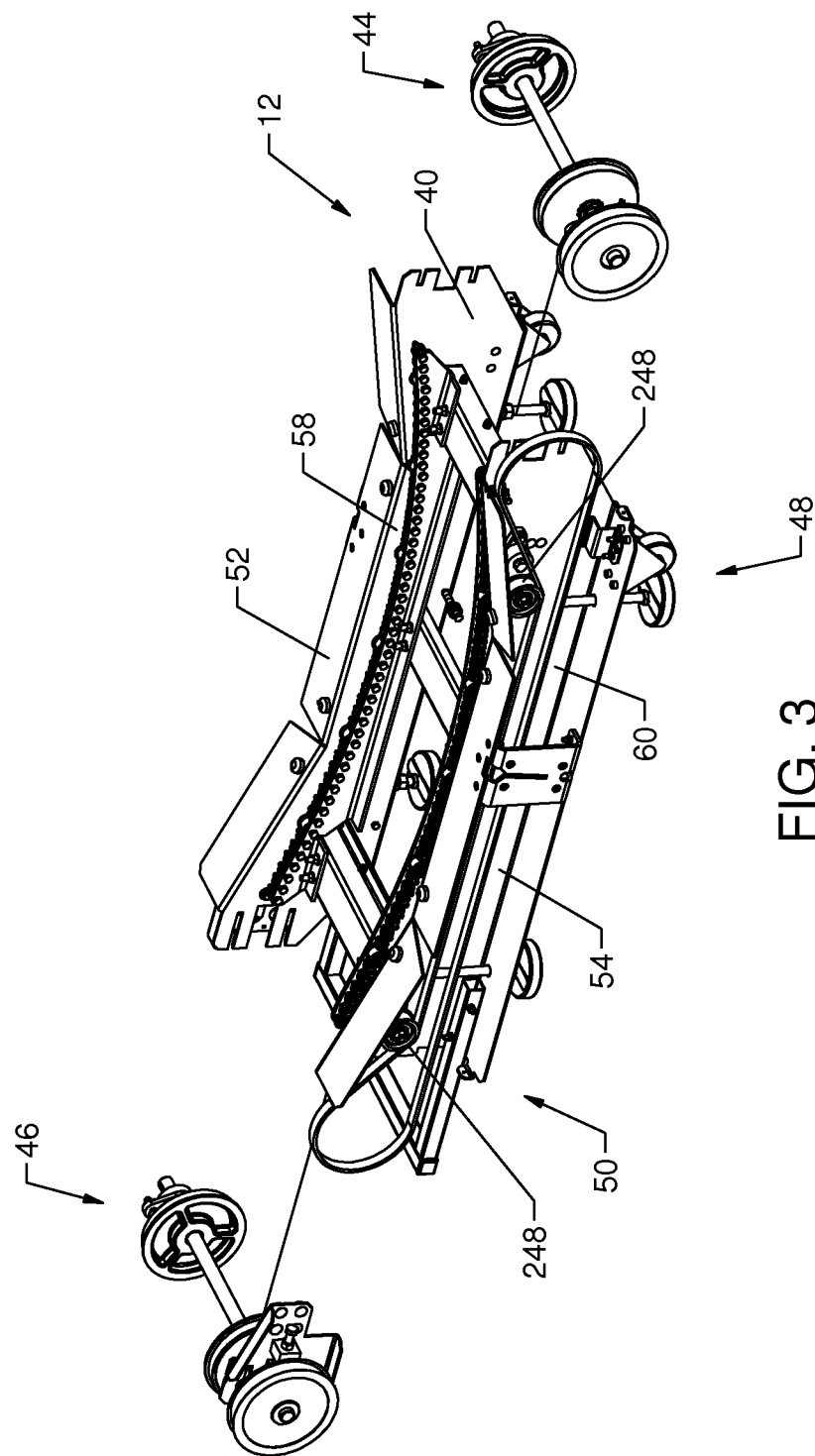
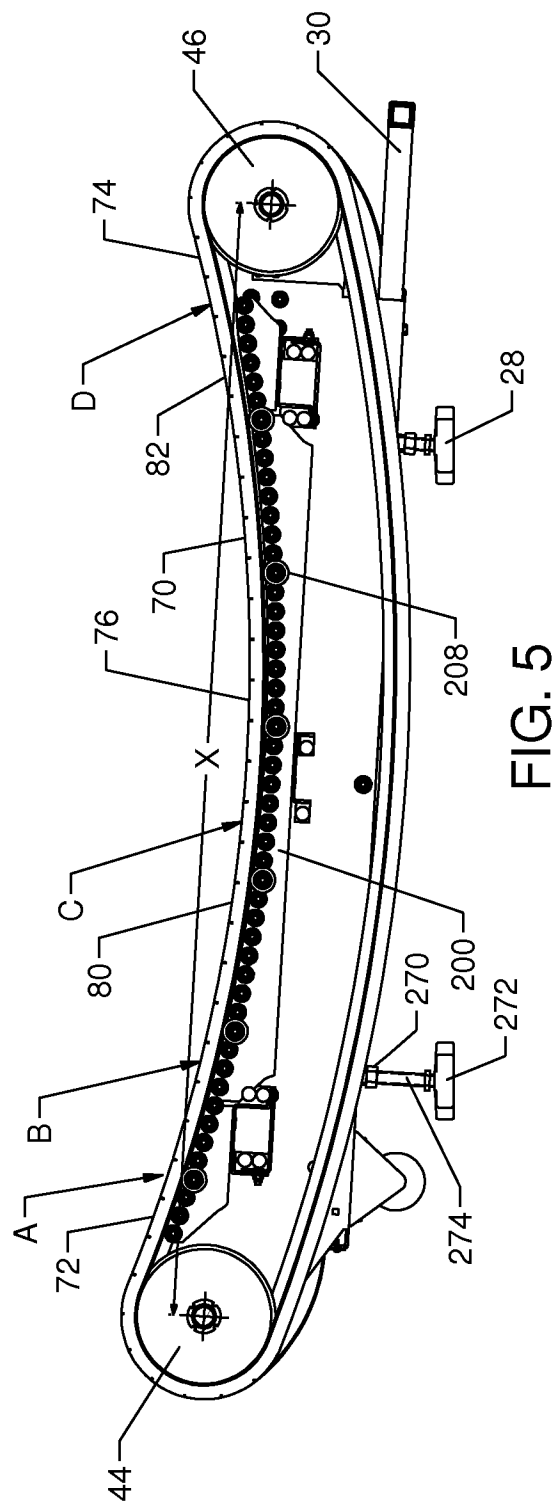
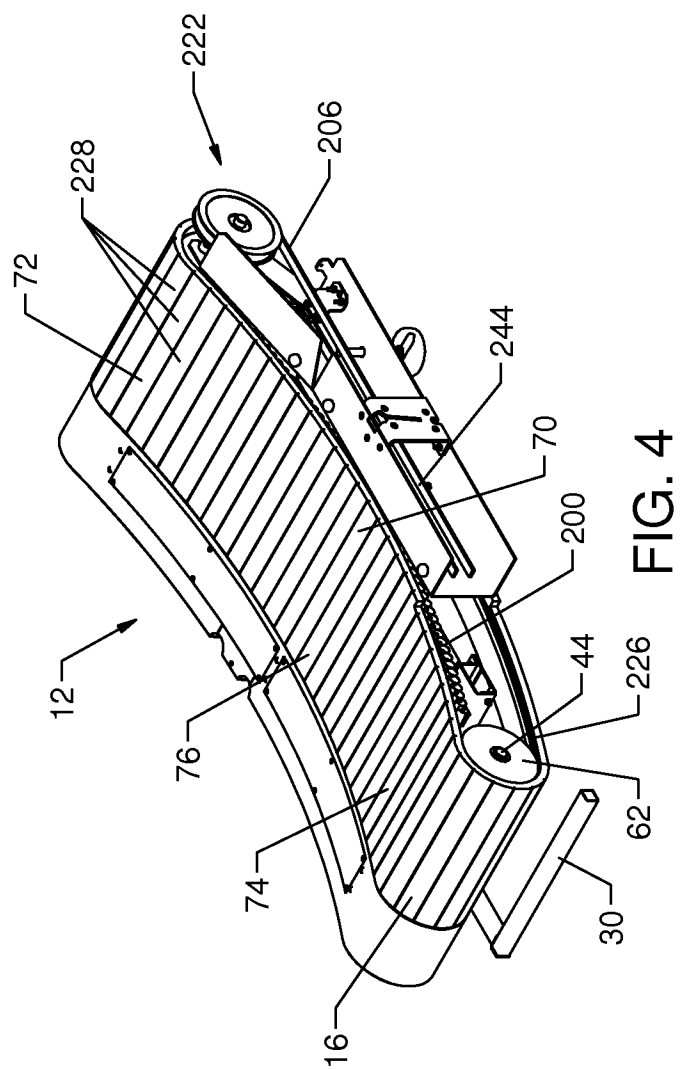


FIG. 3





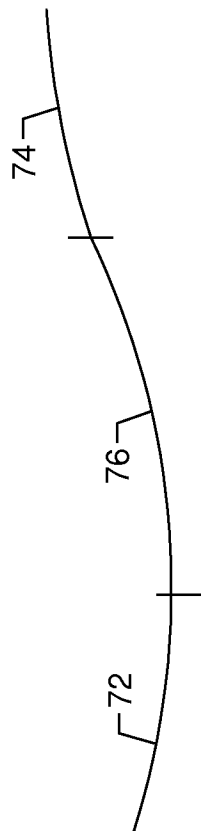


FIG. 7a



FIG. 7b

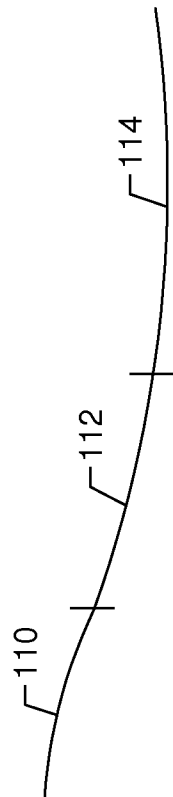


FIG. 7c

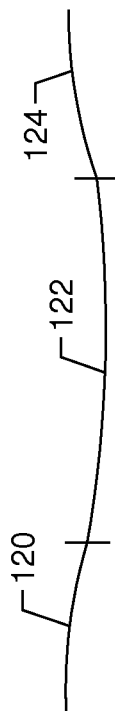


FIG. 7d

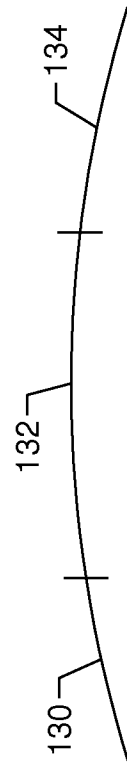


FIG. 7e

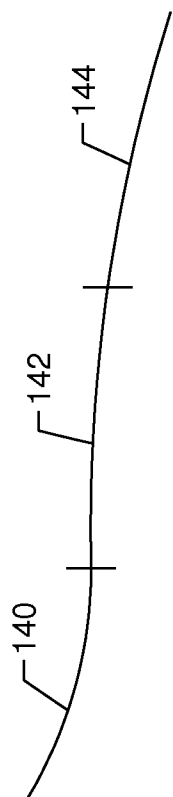


FIG. 7f

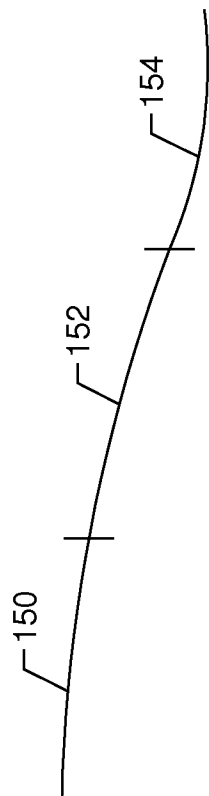


FIG. 7g

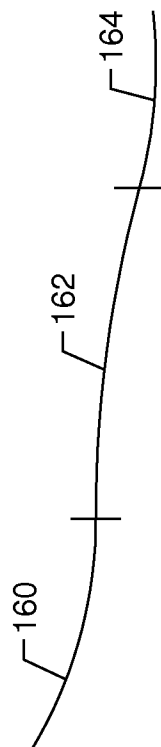


FIG. 7h

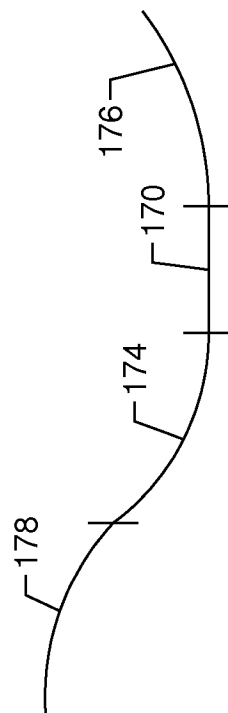


FIG. 7i

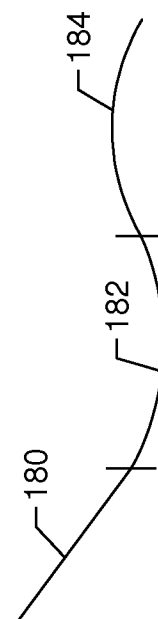


FIG. 7j

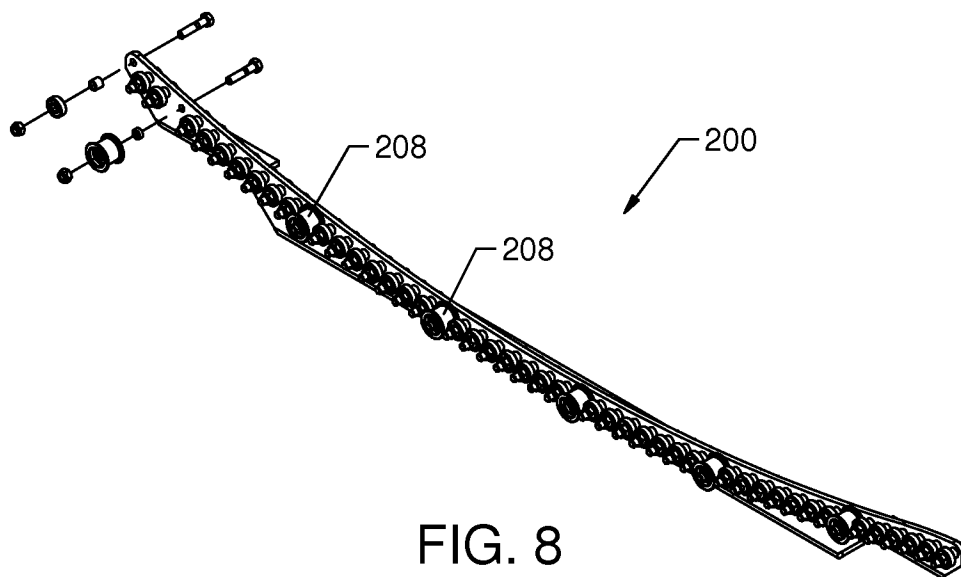


FIG. 8

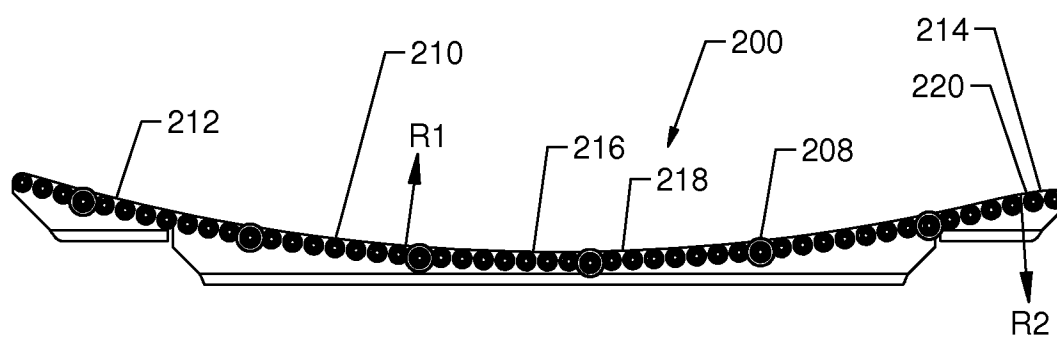


FIG. 9

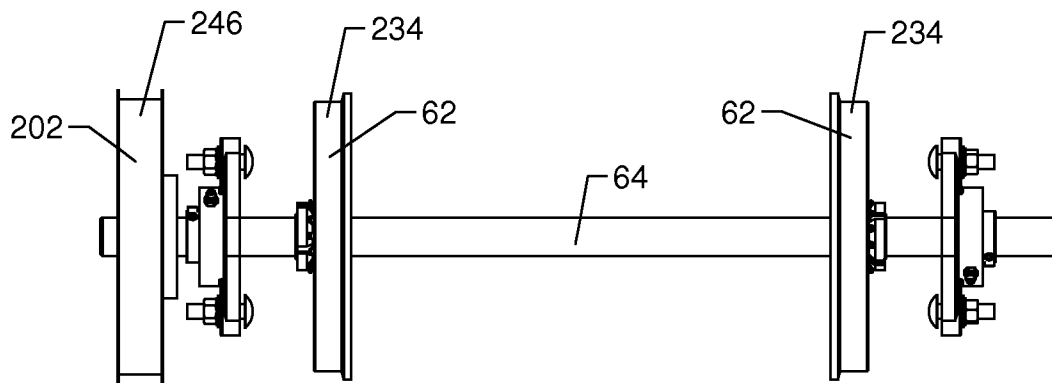


FIG. 10

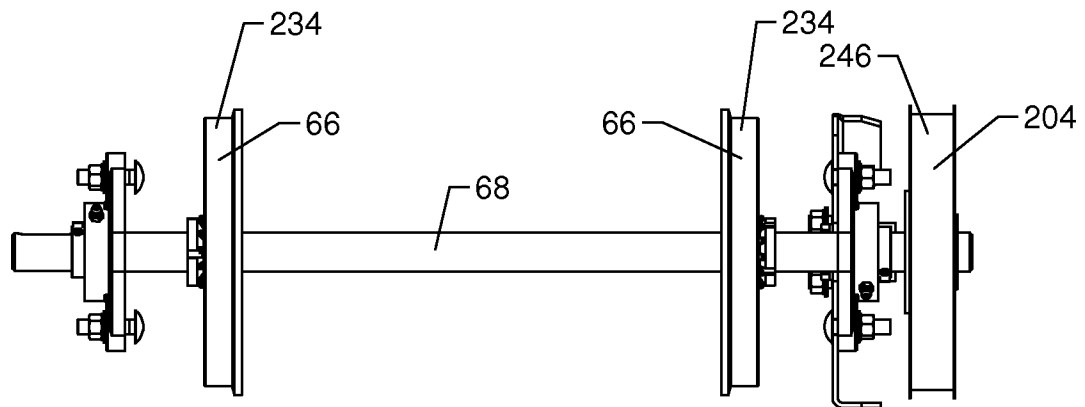


FIG. 11

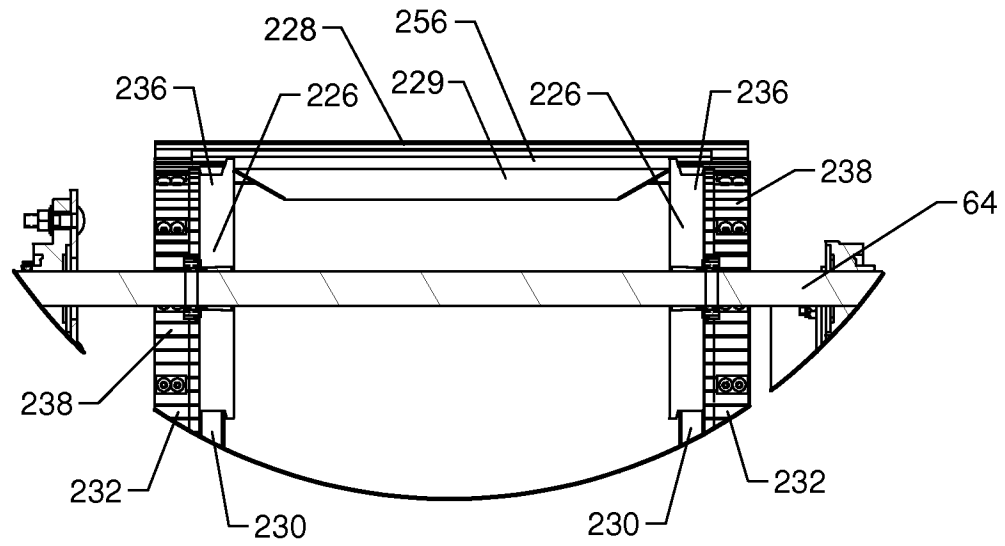


FIG. 12

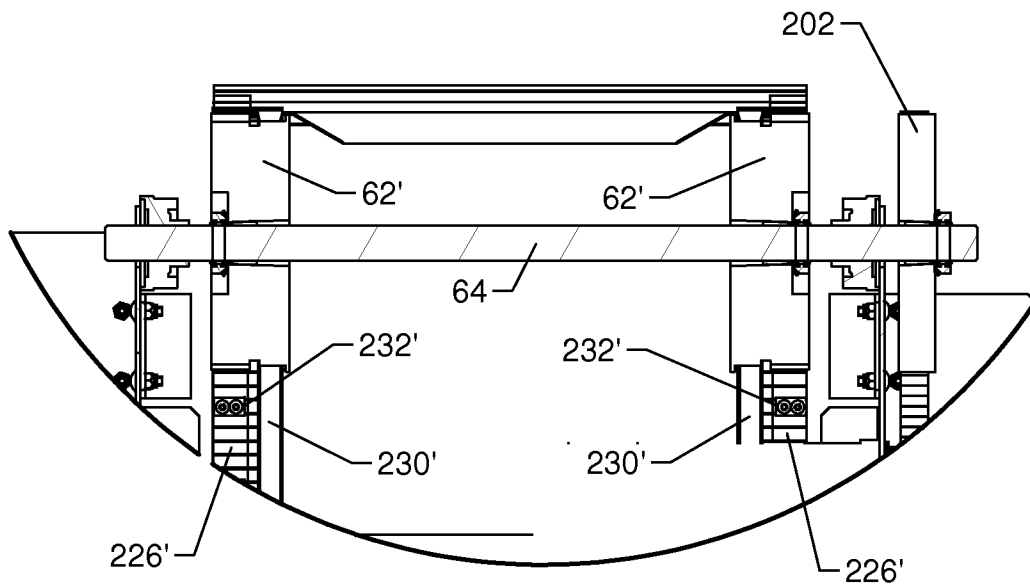
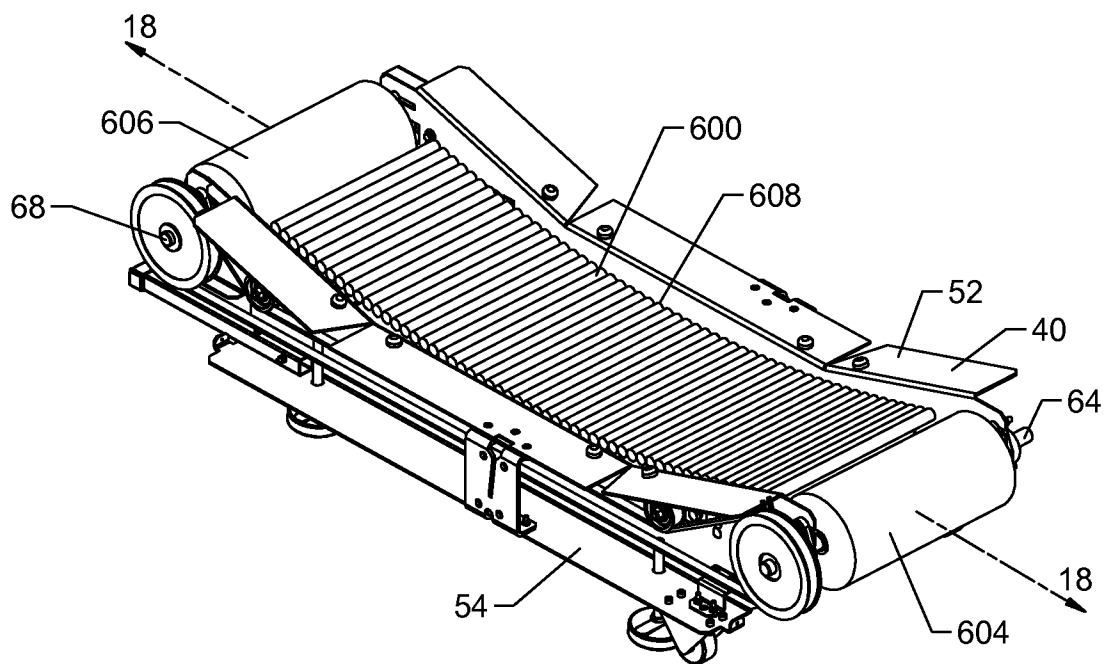
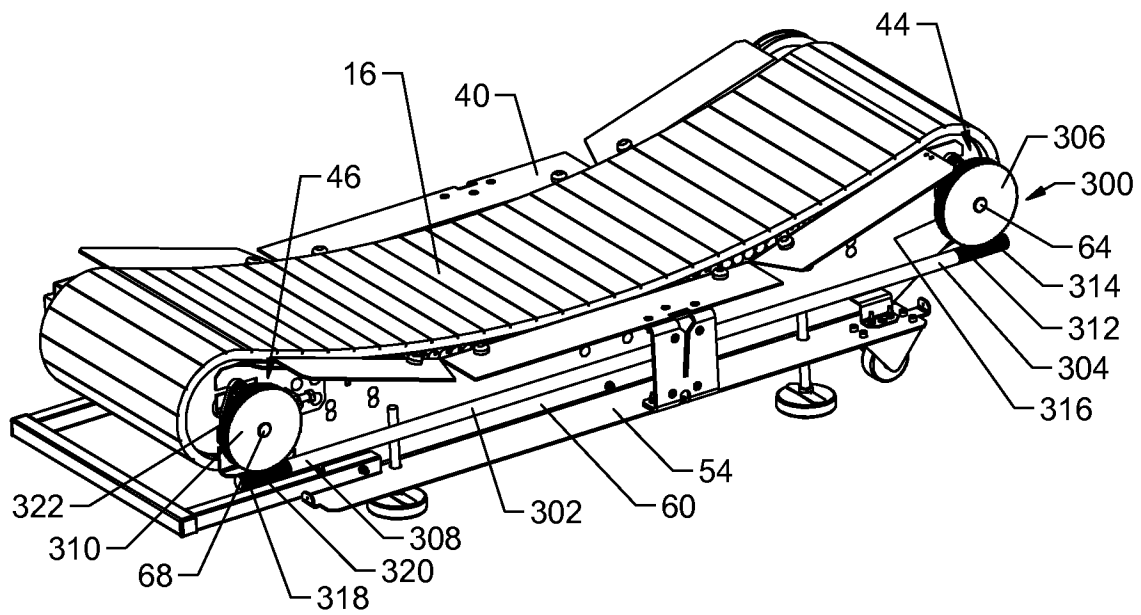


FIG. 13



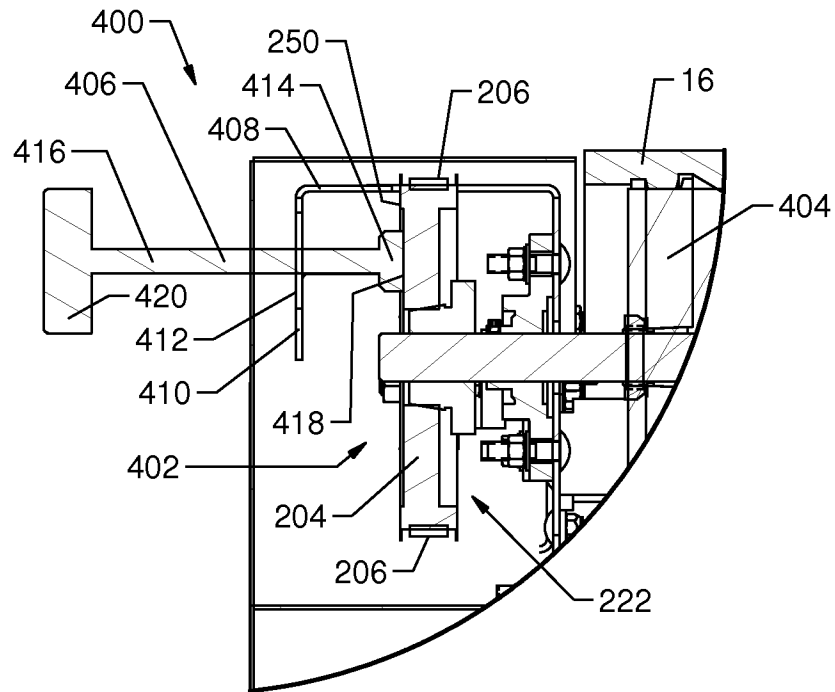


FIG. 15

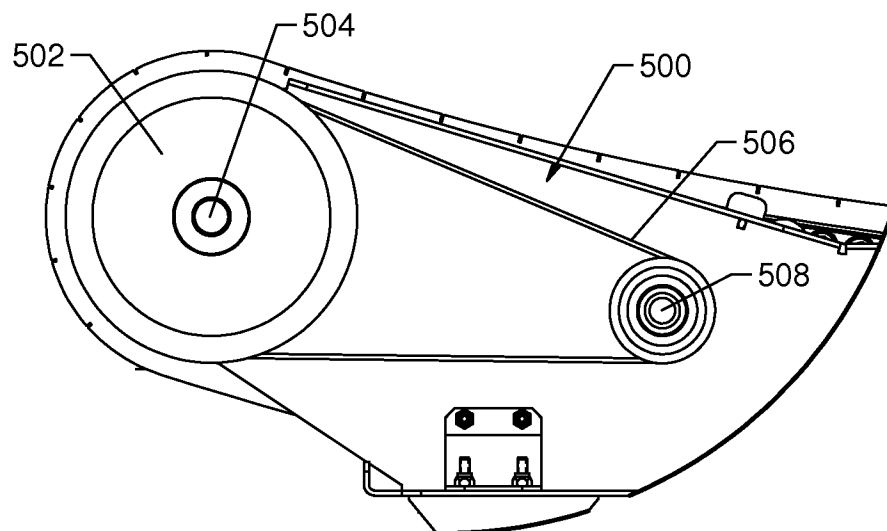


FIG. 16

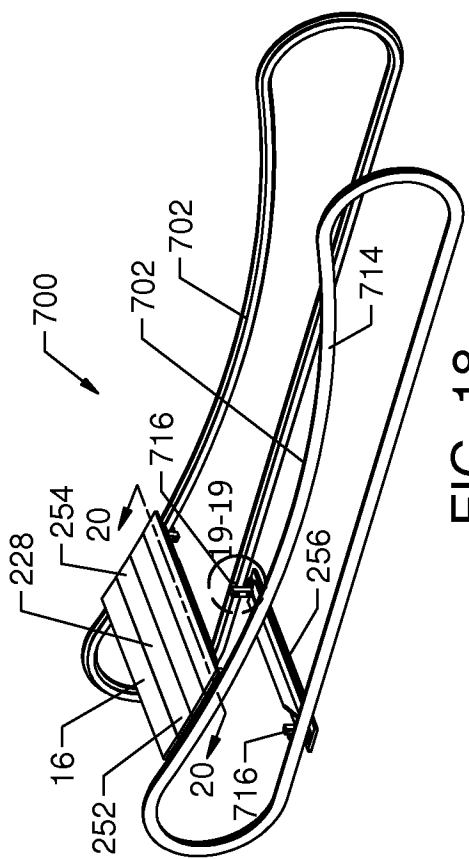


FIG. 18

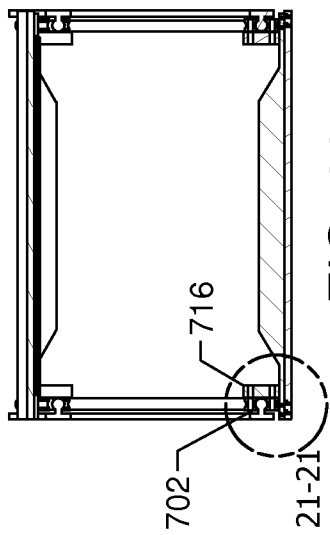


FIG. 20

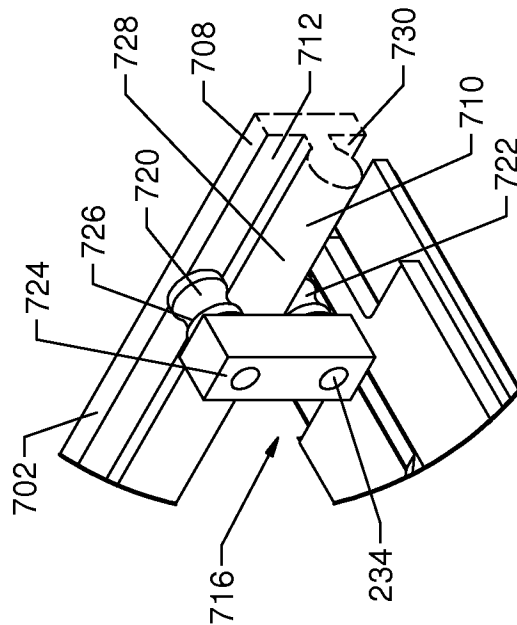


FIG. 19

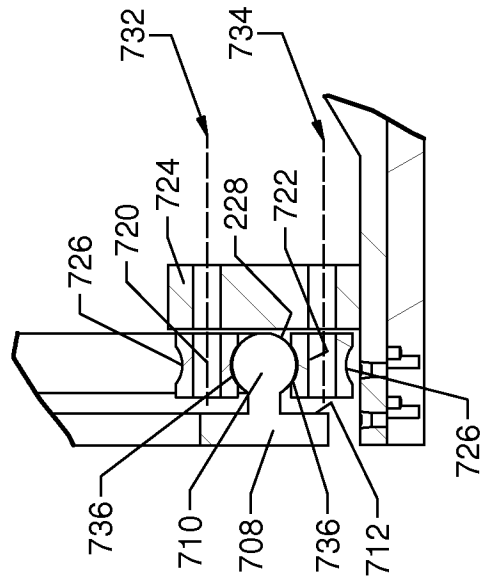


FIG. 21

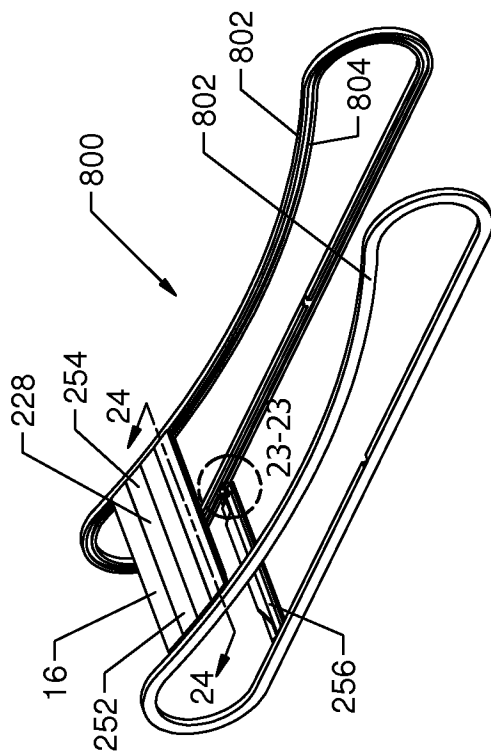


FIG. 22

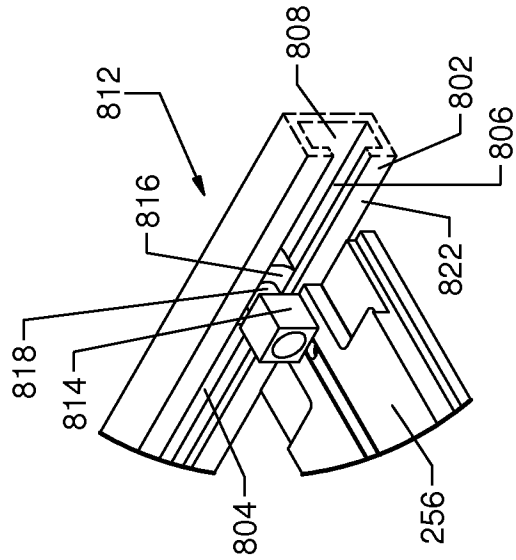


FIG. 23

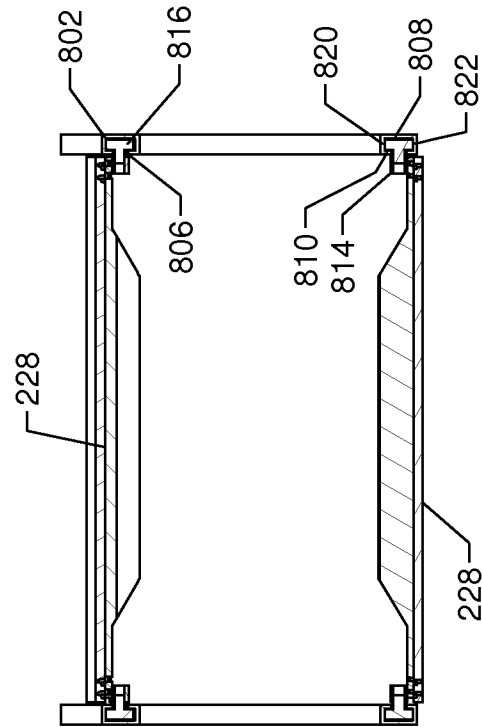


FIG. 24

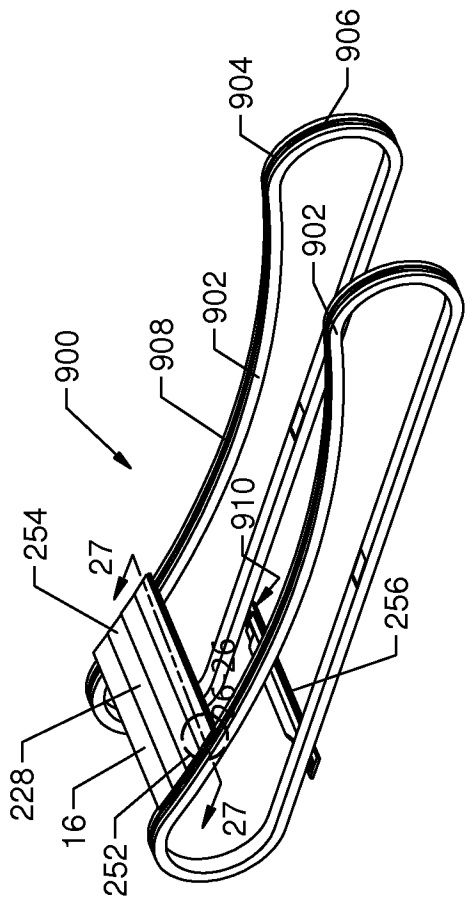


FIG. 25

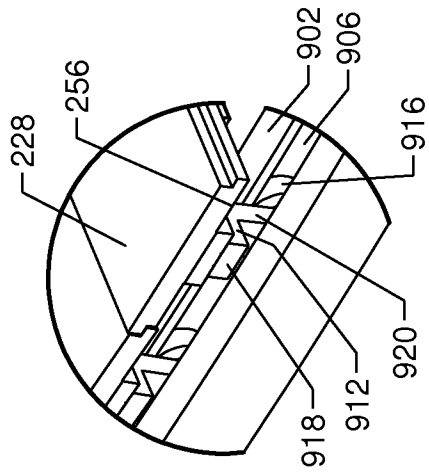


FIG. 26

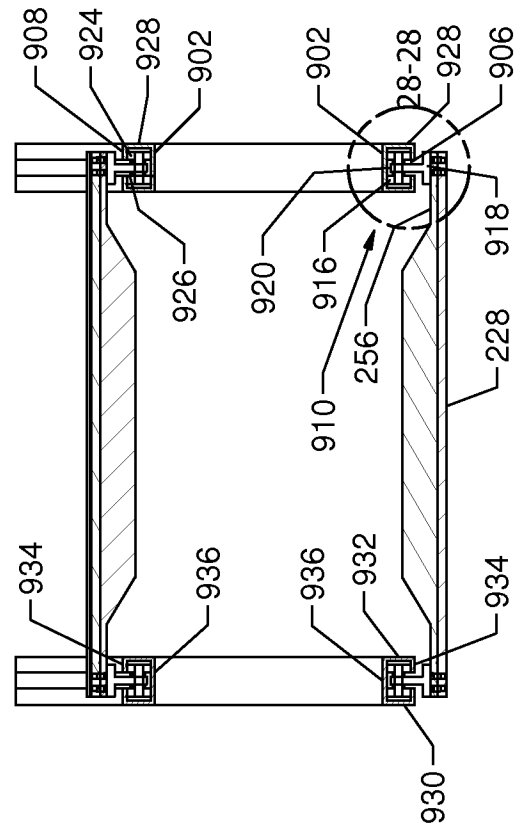


FIG. 27

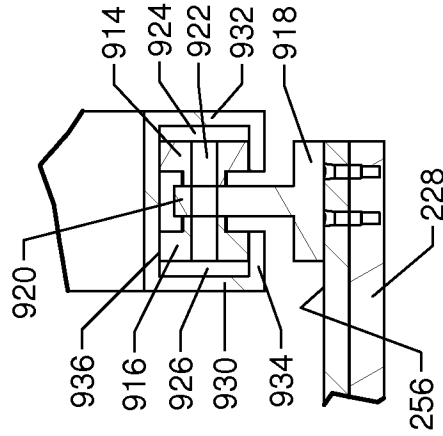


FIG. 28

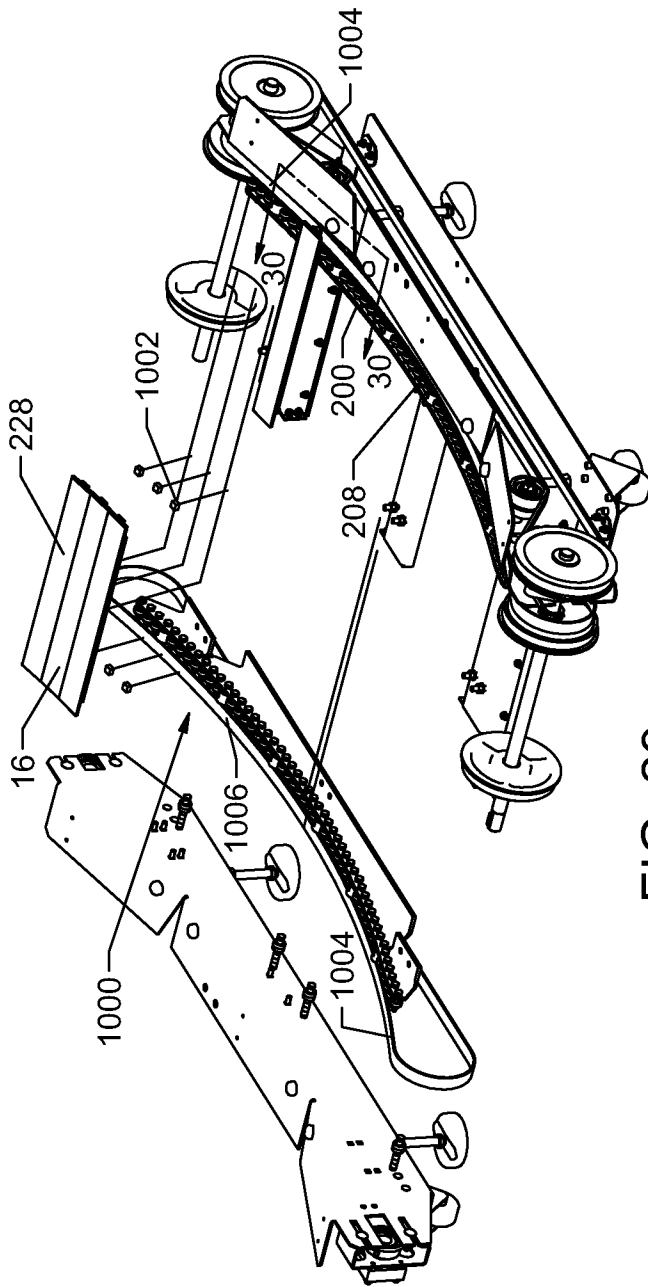


FIG. 29

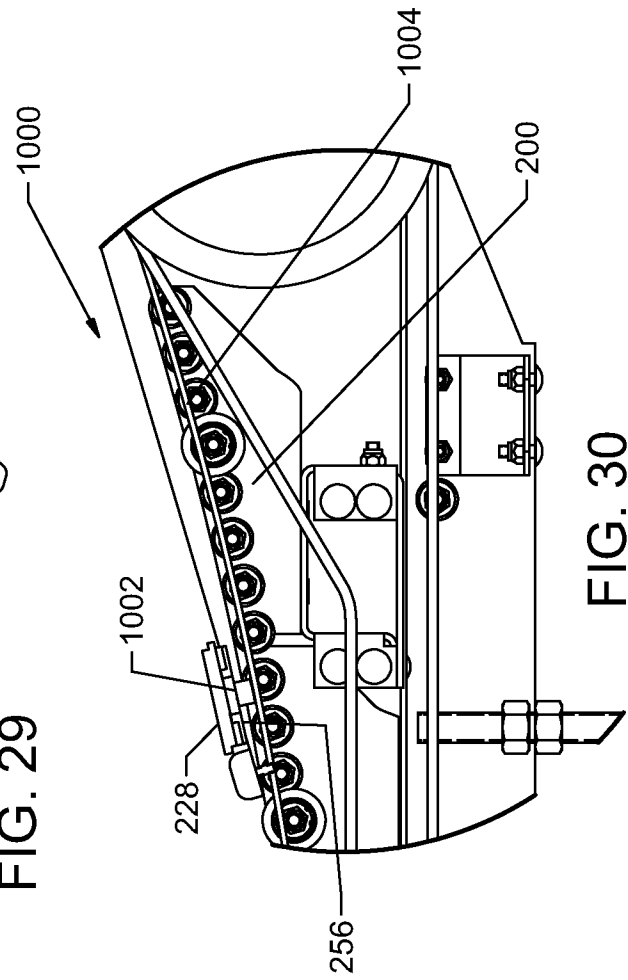


FIG. 30

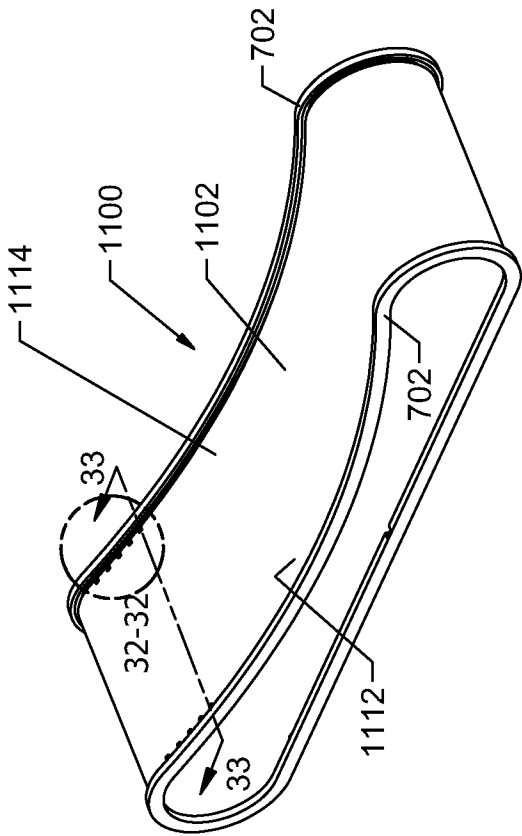


FIG. 31

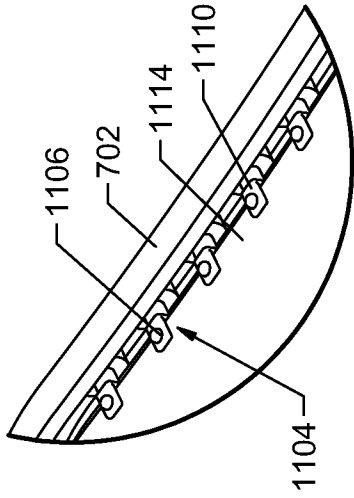


FIG. 32

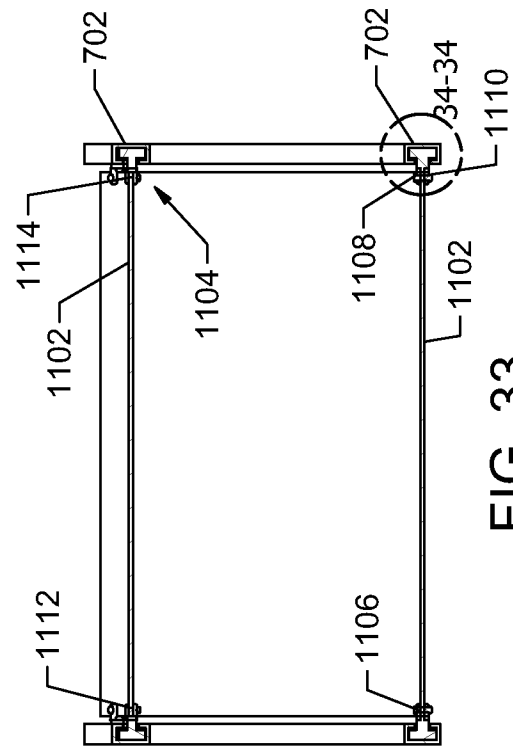


FIG. 33

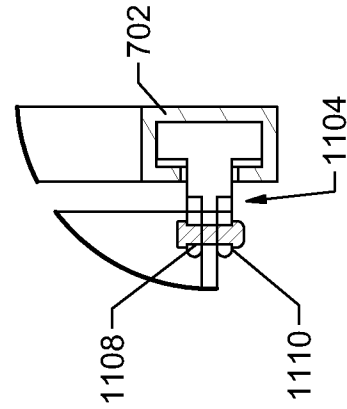


FIG. 34

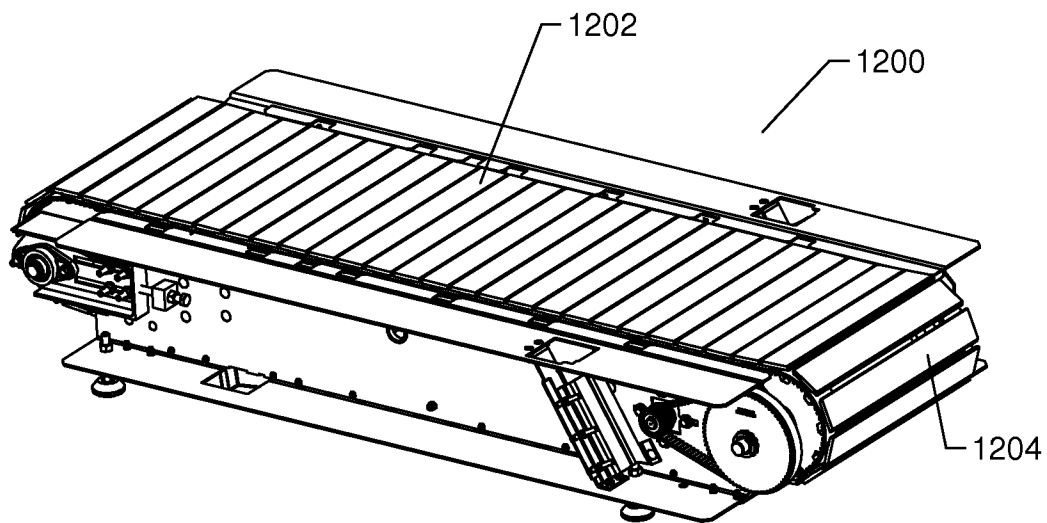


FIG. 35

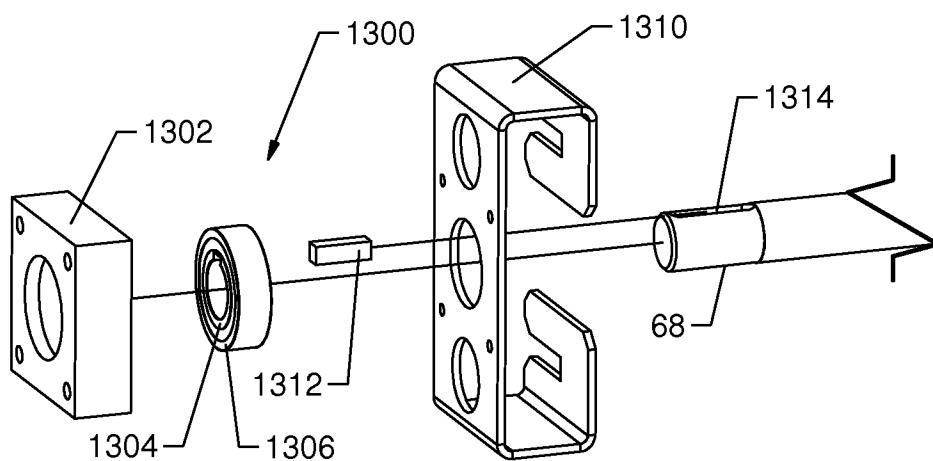


FIG. 36

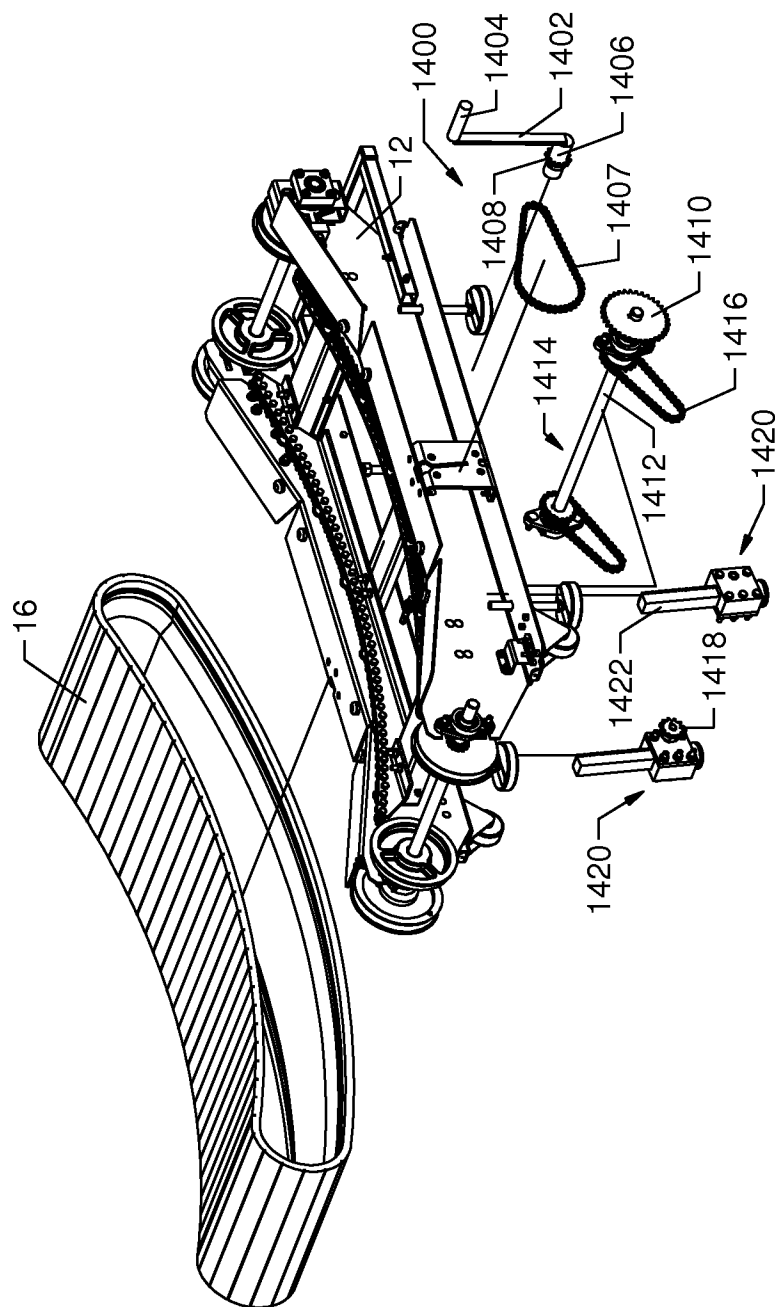


FIG. 37

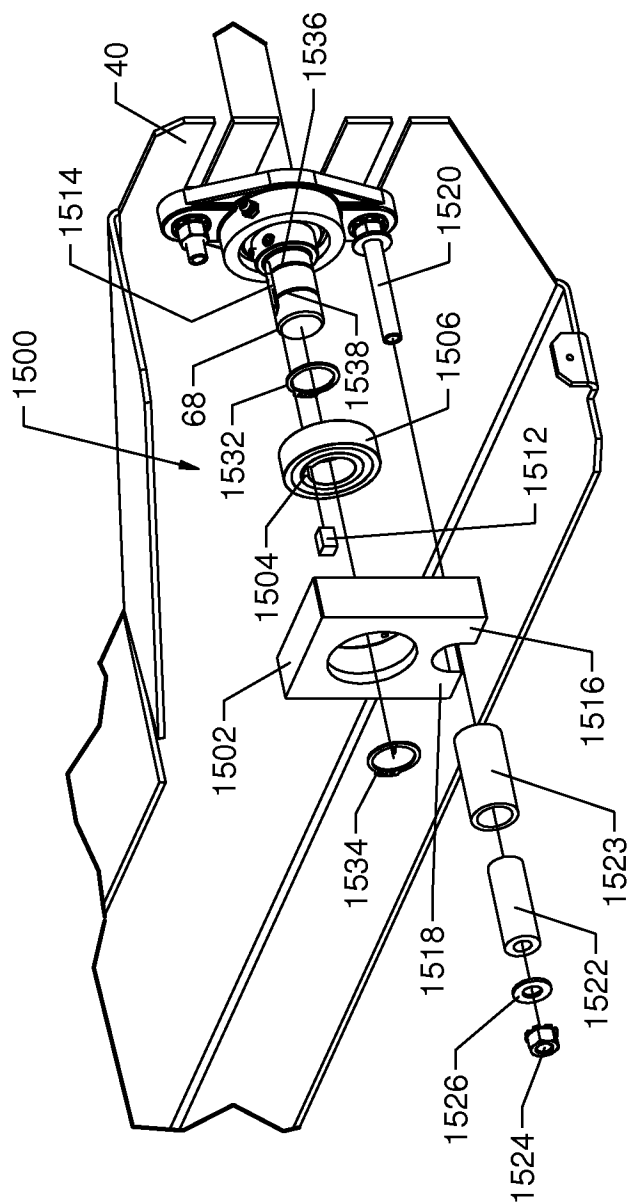


FIG. 38

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name: Douglas G. Bayerlein

Title: MANUAL TREADMILL AND
METHODS OF OPERATING
THE SAME

Appl. No.: Not yet assigned

Filing Date: Herewith

Examiner: Not yet assigned

Art Unit: Not yet assigned

Confirmation Number: Not yet assigned

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including application no. PCT/US10/27543, filed 3/16/2010; application no. 13/235,065, filed 9/16/2011; application no. 14/243716, filed 4/2/2014, for copies of references of record therein that are not

being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the filing date of the application.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date: March 13, 2015

By: /R.J. McKenna/

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (414) 297-5723
Facsimile: (414) 297-4900

Richard J. McKenna
Attorney for Applicant
Registration No. 35,610

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/656,942			
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A			
TOTAL CLAIMS (37 CFR 1.16(j))	26	minus 20 = *	6	x 40 =	240				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = *	1	x 210 =	210				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				0.00				
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					0.00				
			TOTAL	1180		TOTAL			
* If the difference in column 1 is less than zero, enter "0" in column 2.									
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =		x =		
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =		x =		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
			TOTAL ADD'L FEE			TOTAL ADD'L FEE			
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =		x =		
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =		x =		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
			TOTAL ADD'L FEE			TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/656,942	03/13/2015	3764	1180	097208-0204	26	4

CONFIRMATION NO. 5409

26371
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

FILING RECEIPT



OC000000074181883

Date Mailed: 03/25/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

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Scott D. Hoerig, Brookfield, WI;
Matthew J. Zank, Milwaukee, WI;
Robert L. Zimpel, Menomonee Falls, WI;
Joel W. Richards, Wauwatosa, WI;

Applicant(s)

Woodway USA, Inc., Waukesha, WI

Assignment For Published Patent Application

WOODWAY USA, INC., Waukesha, WI

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 14/243,716 04/02/2014 PAT 8986169
which is a CON of 13/235,065 09/16/2011
which is a CIP of PCT/US10/27543 03/16/2010
which claims benefit of 61/161,027 03/17/2009

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 03/24/2015

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/656,942**

Projected Publication Date: 07/02/2015

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

Preliminary Class

482

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

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countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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Mar 25, 2015 05:41:53 AM

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Application	Document	Mailroom Date	Attorney Docket No.
14656942	APP.FILE.REC	03/25/2015	097208-0204

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Thank you for prompt attention to this notice,

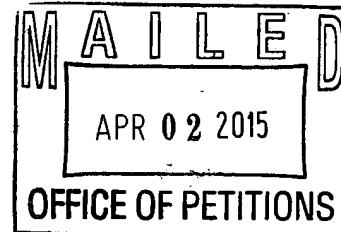
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3000 K STREET N.W.
SUITE 600
WASHINGTON DC 20007-5109



Doc Code: TRACK1.GRANT

Decision Granting Request for Prioritized Examination (Track I or After RCE)	Application No.: 14/656,942
<p>1. THE REQUEST FILED <u>3/13/15</u> IS GRANTED.</p> <p>The above-identified application has met the requirements for prioritized examination</p> <p>A. <input checked="" type="checkbox"/> for an original nonprovisional application (Track I). B. <input type="checkbox"/> for an application undergoing continued examination (RCE).</p> <p>2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:</p> <p>A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u>; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application.</p> <p>Telephone inquiries with regard to this decision should be directed to Cheryl Gibson-Baylor at (571)272-3213, Office of Petitions. In his/her absence, calls may be directed to Brian W. Brown, (571)272-5338.</p> <p>Cheryl Gibson-Baylor <u>/Cheryl Gibson-Baylor/</u> [Signature]</p> <p><u>Petitions Paralegal Specialist</u> (Title)</p>	

PLUS Search Results for S/N 14656942, Searched Tue Apr 07 11:32:22 EDT 2015

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: April 7, 2015

(use as many sheets as necessary)

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1

Complete if Known

Application Number	14/656,942
Filing Date	03/26/2015
First Named Inventor	Douglas G. Bayerlein
Art Unit	3764
Examiner Name	GINSBURG, OREN ISAAC
Attorney Docket Number	097208-0204

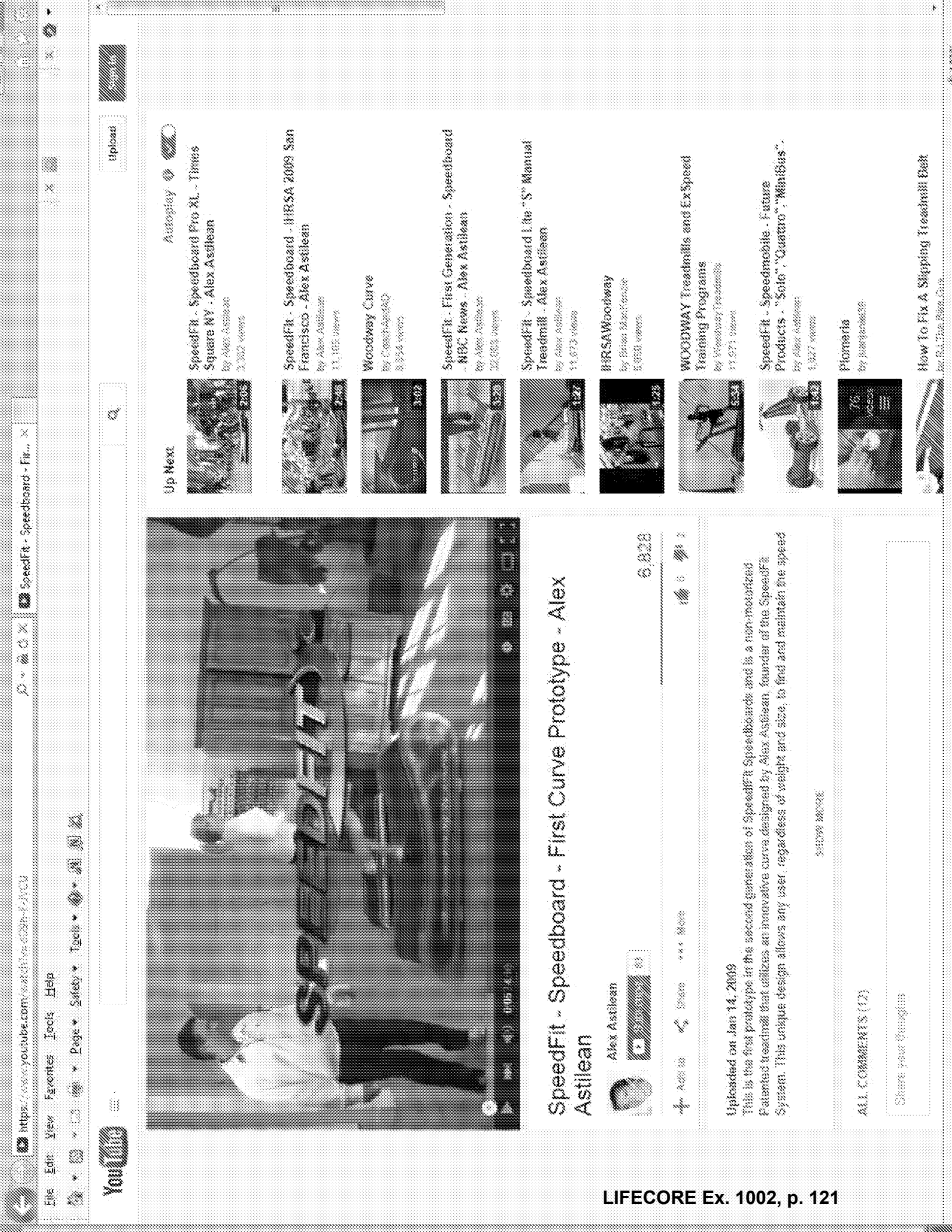
U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	A1	2014/0011642	01-09-2014	ASTILEAN, ALEX	
	A2	8,690,738	04-08-2014	ASTILEAN, ALEX	

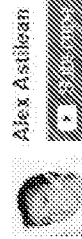
NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A3	Photographs of public display of Speedfit Speedboard by Woodway presented at IHRSA Tradeshow on March 17, 2009, 8 pages	
	A4	ASTILEAN, ALEX, YouTube Video entitled "SpeedFit – Speedboard – First Curve Prototype" asserted to be uploaded on January 14, 2009, retrieved from the internet at: https://www.youtube.com/watch?v=dO9h-F-JVCU on April 6, 2015, 49 pages of screenshots.	

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SignatureDate
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Alex Astilean



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Uploaded on Jan 14, 2009

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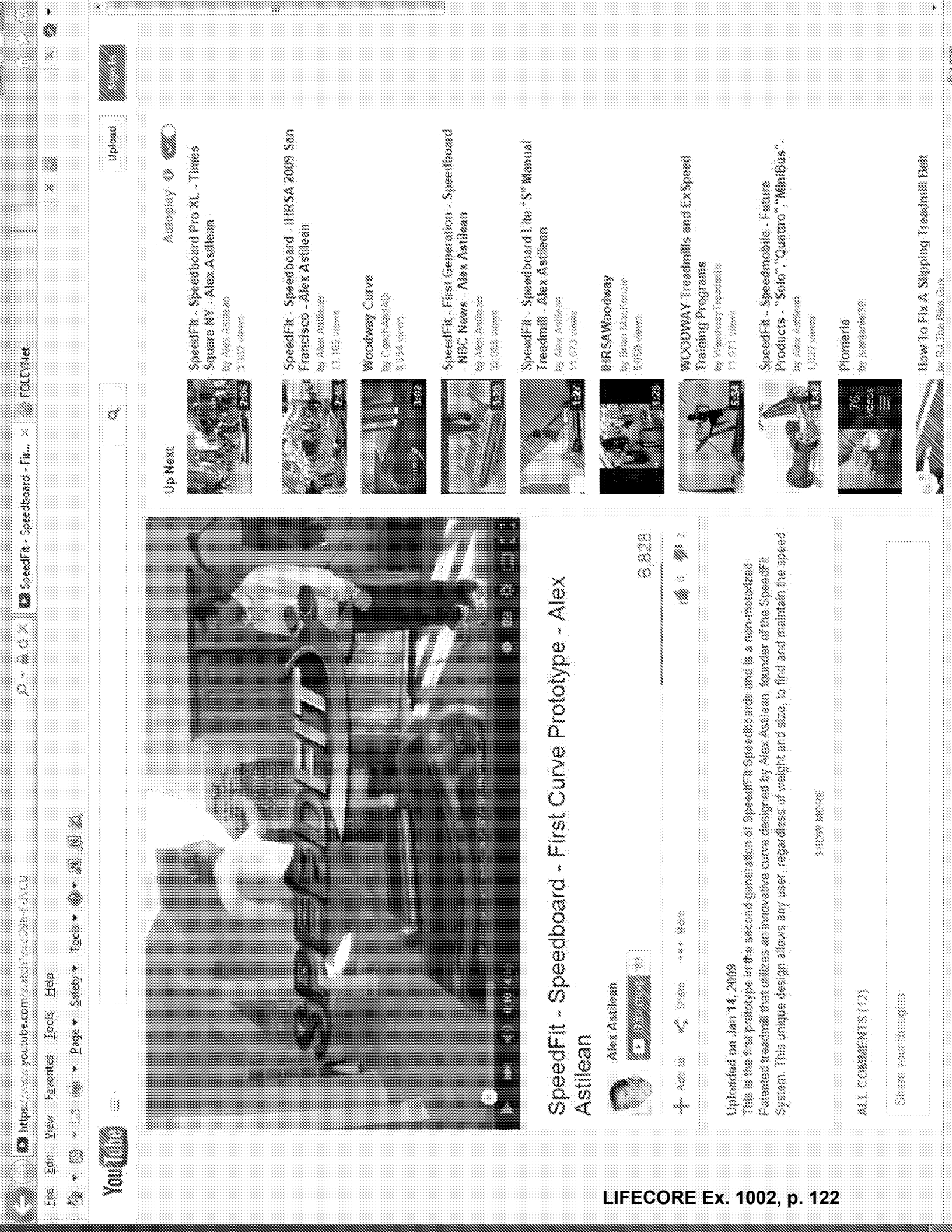
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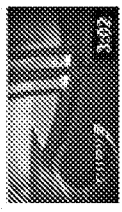
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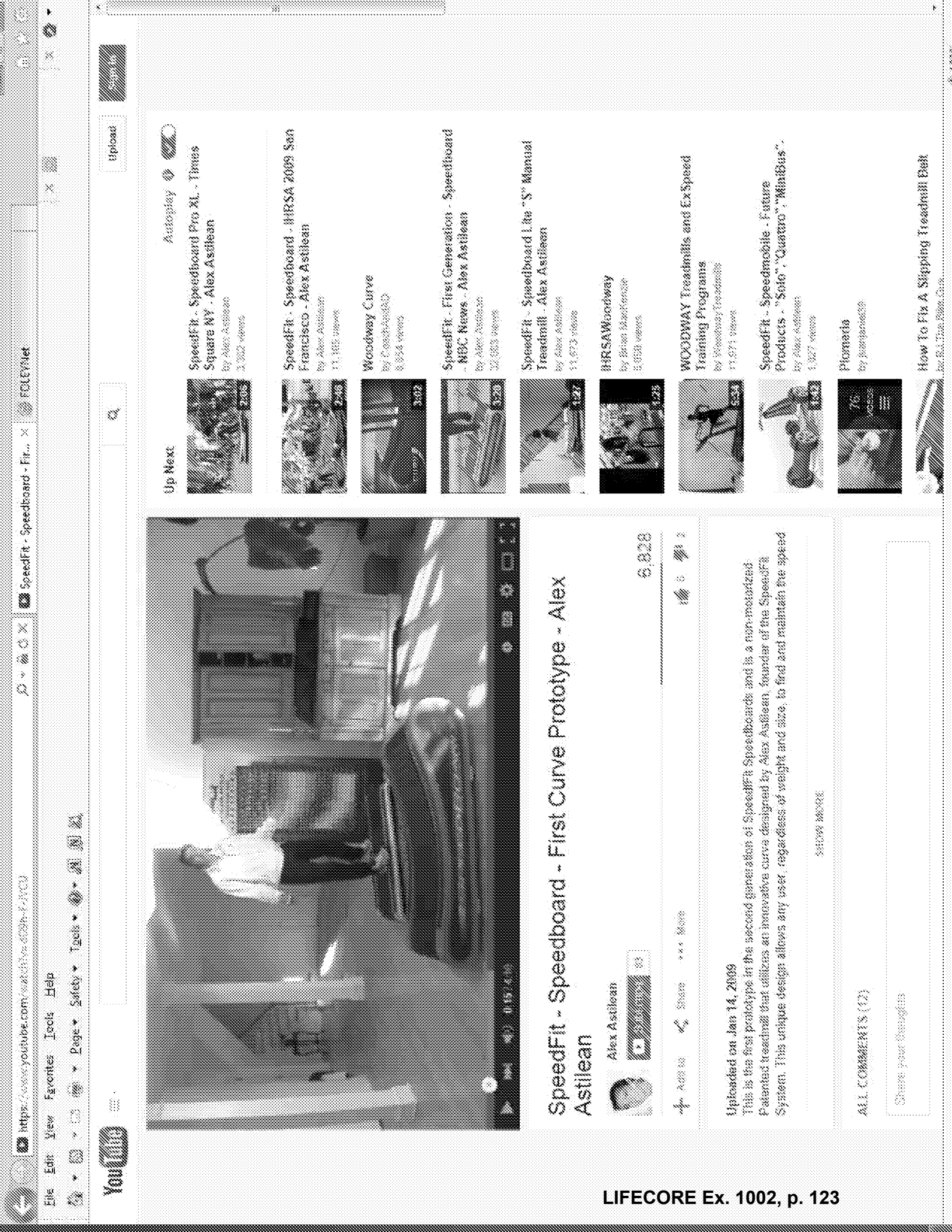
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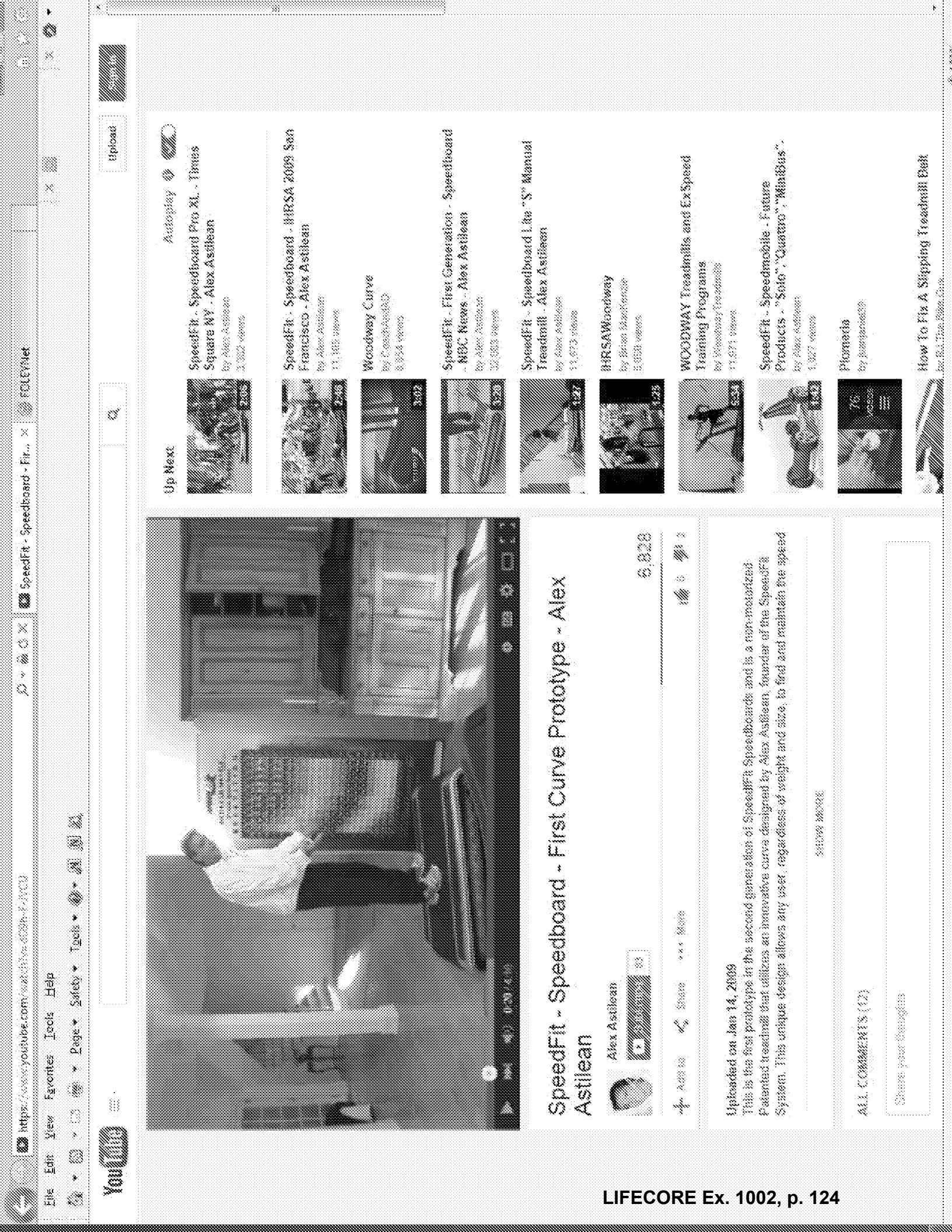


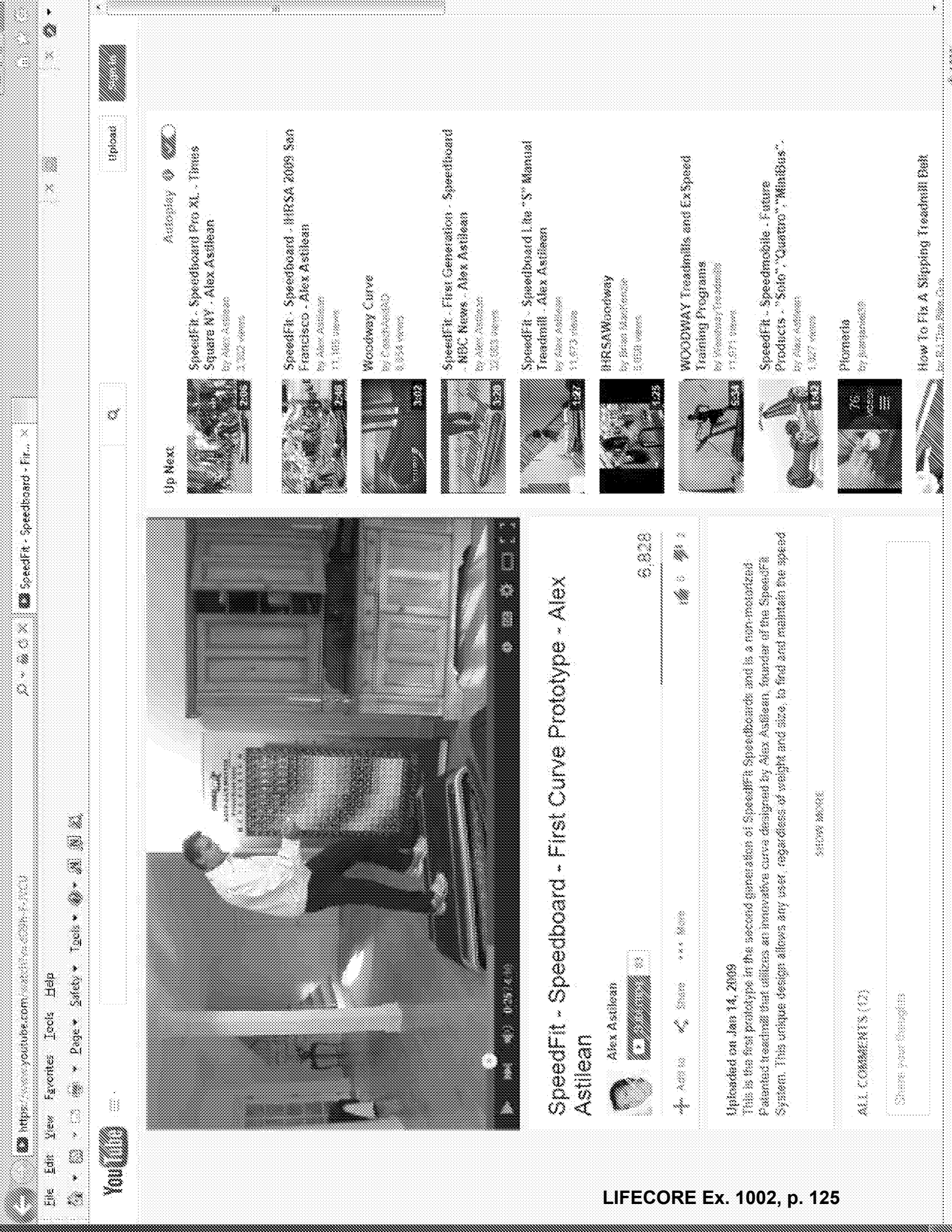
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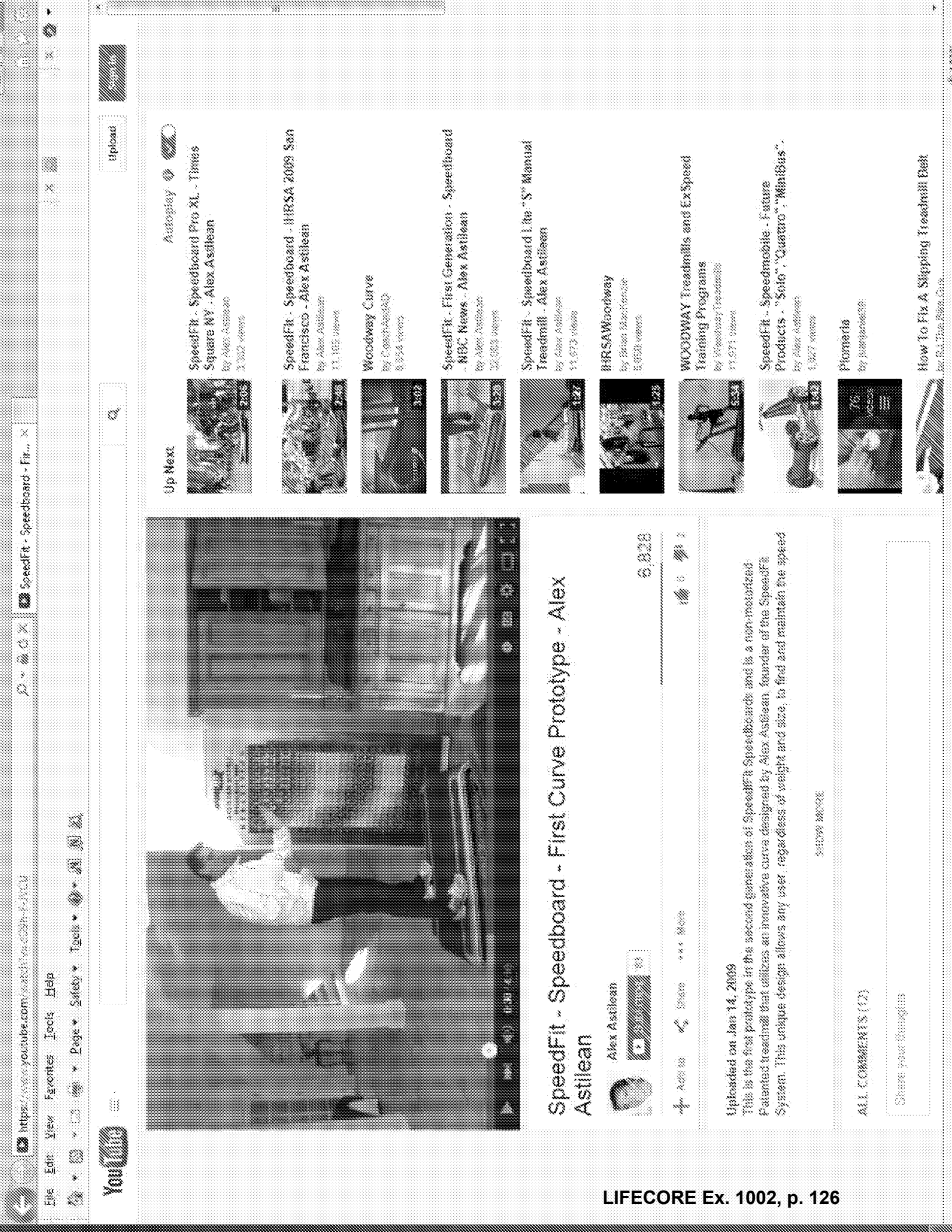


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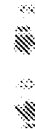


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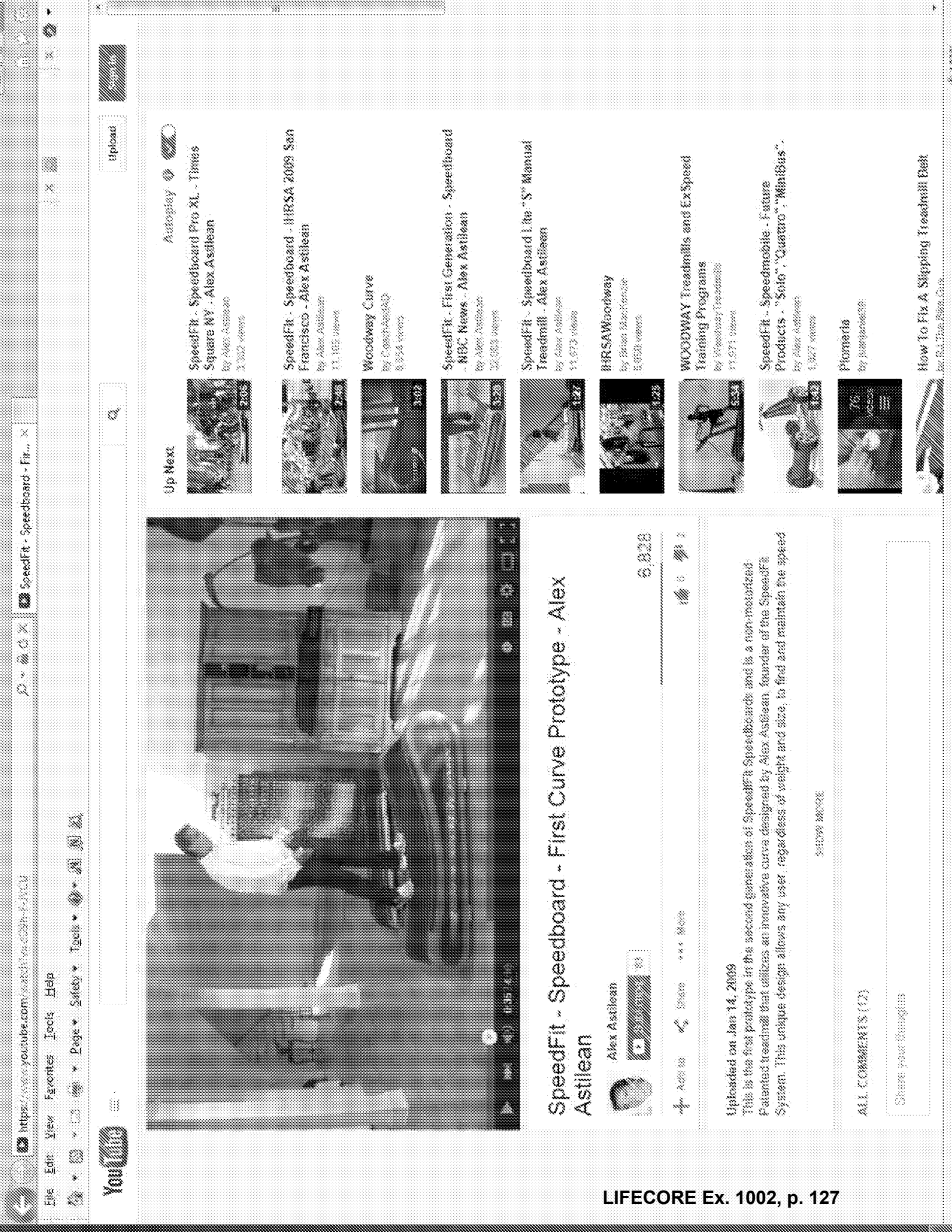
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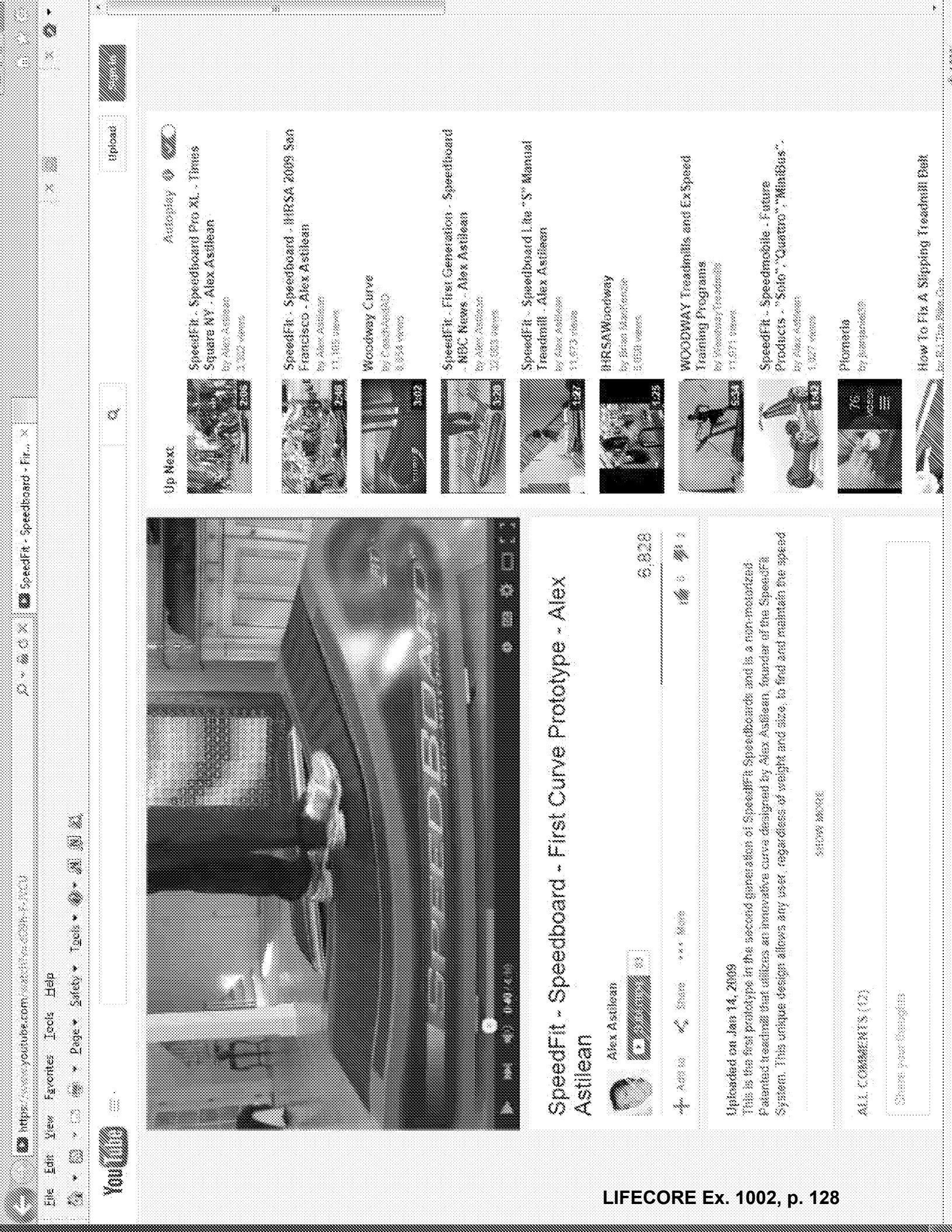
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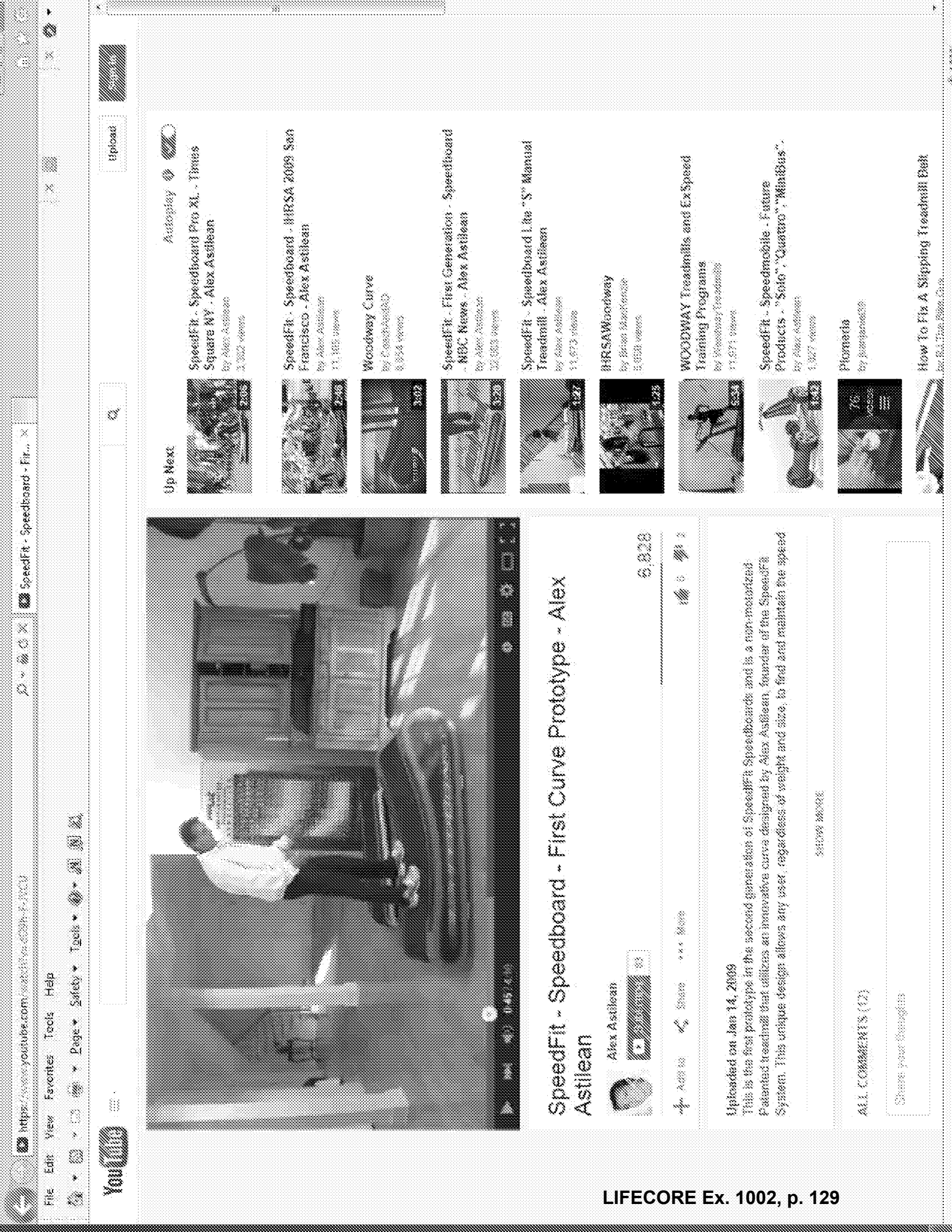


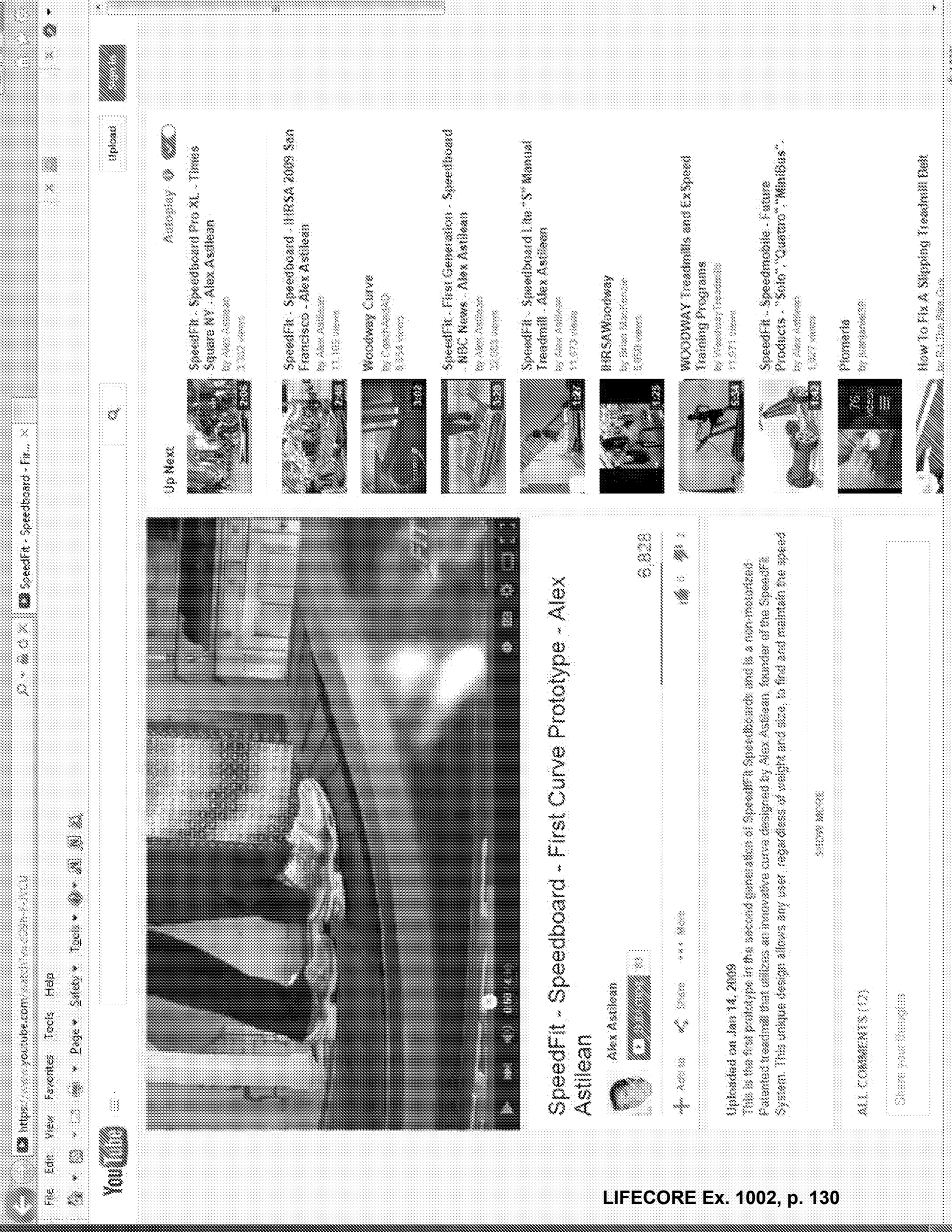
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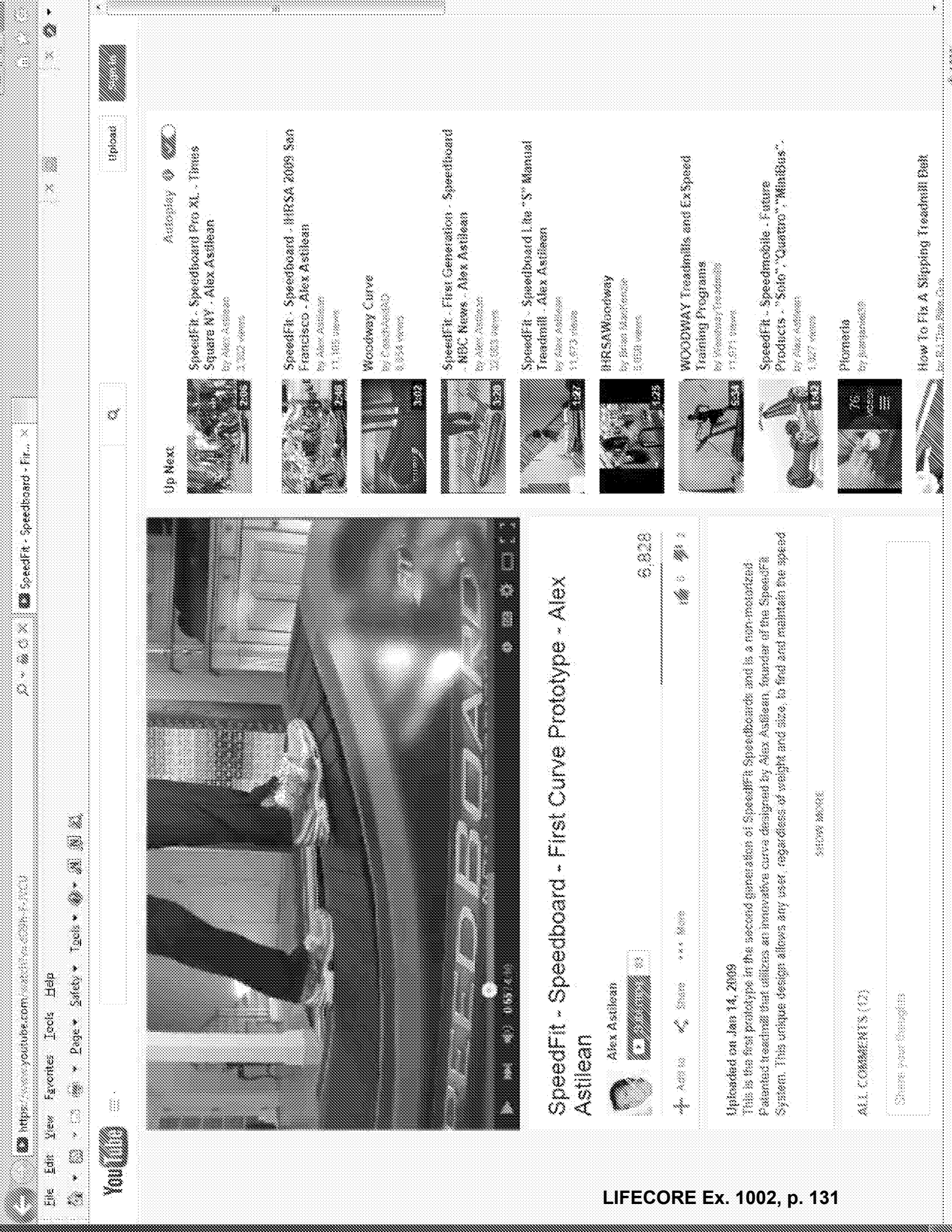
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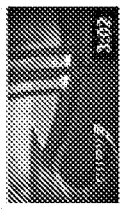
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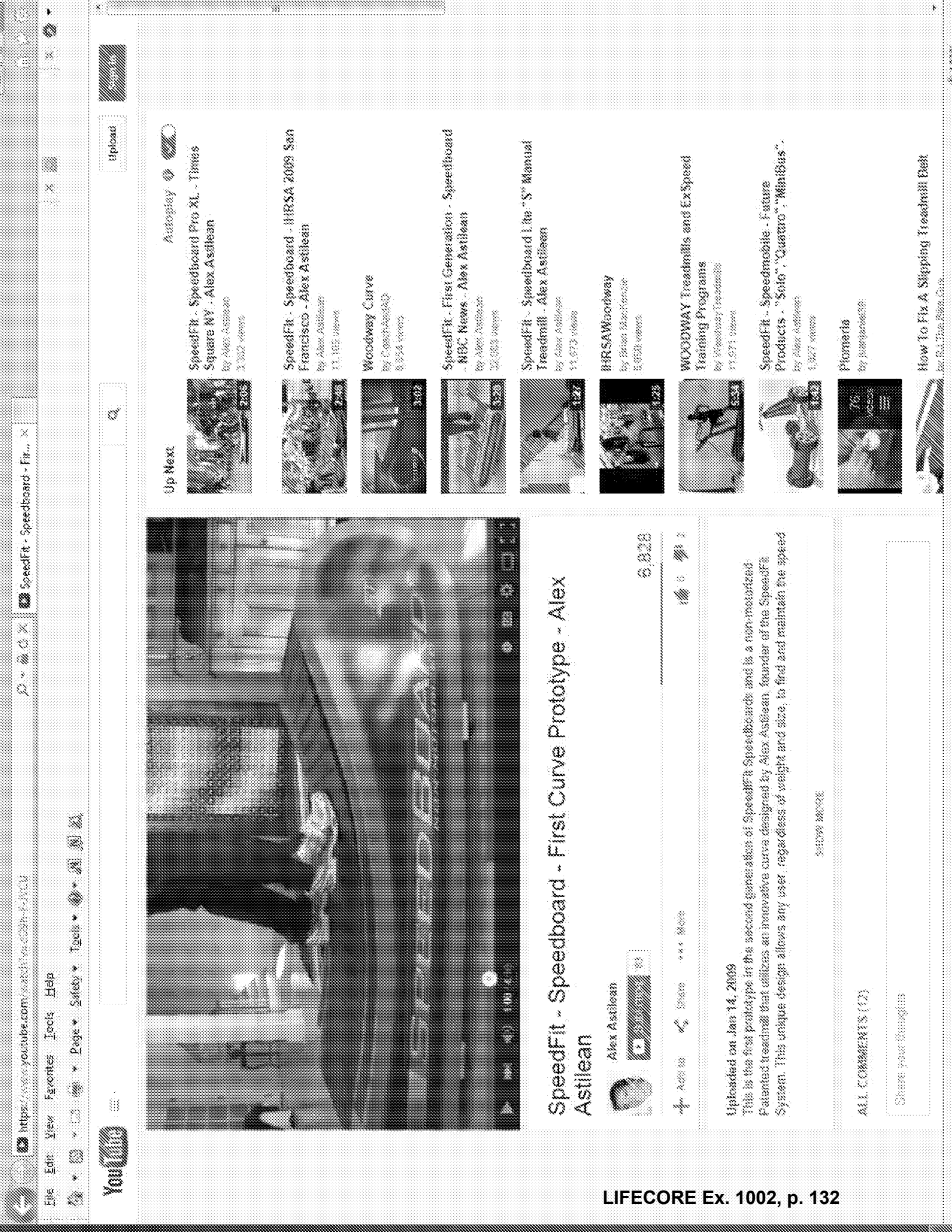
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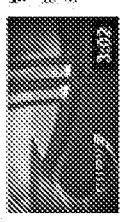
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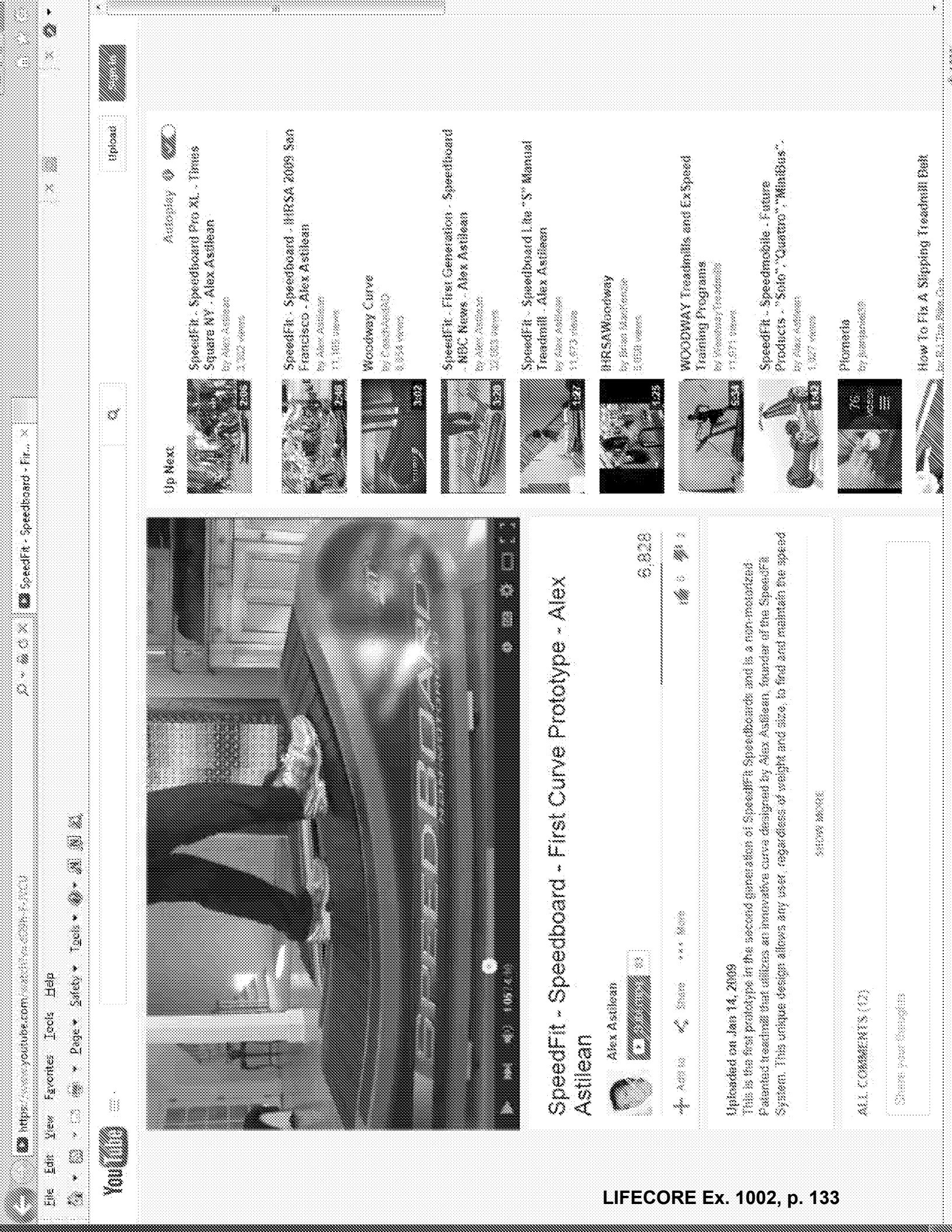
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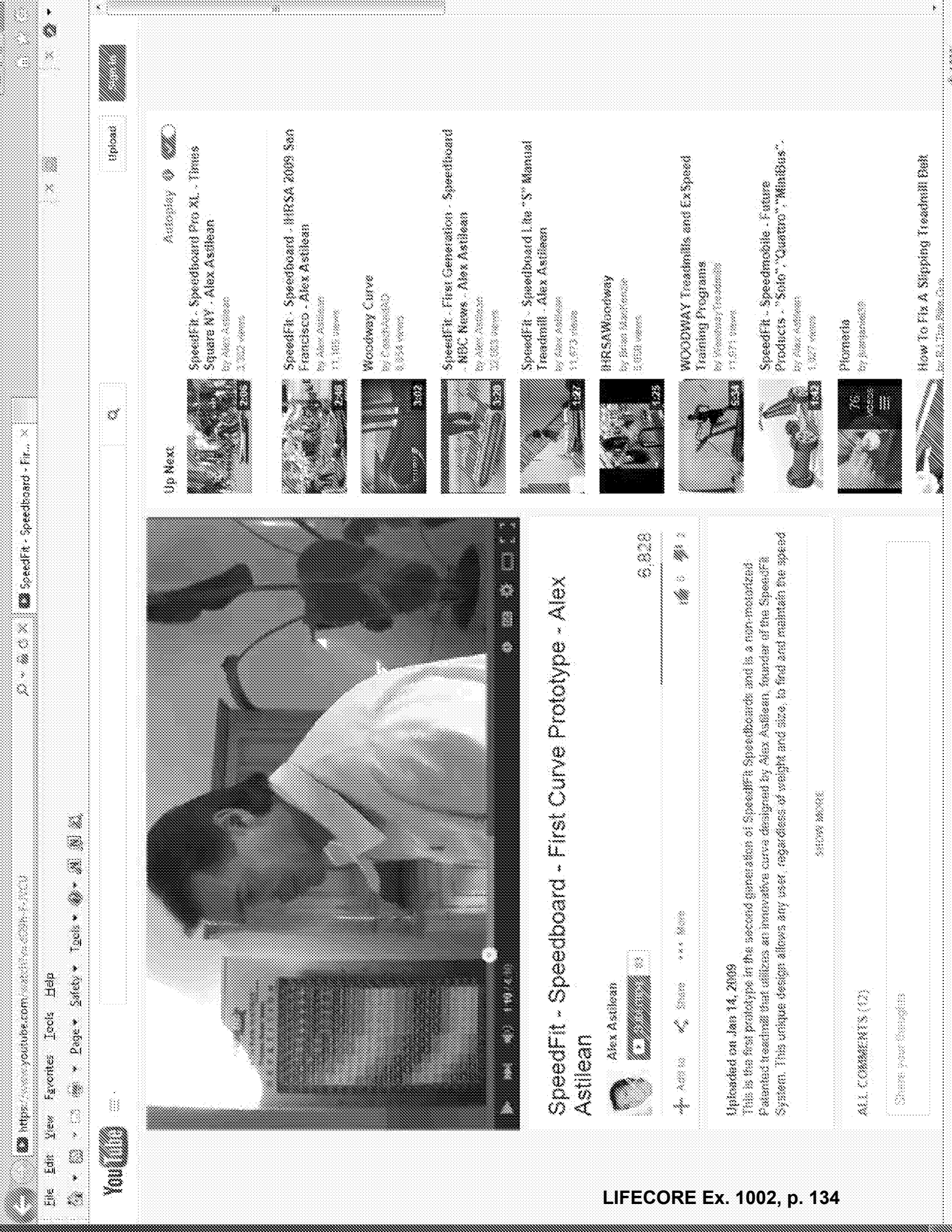


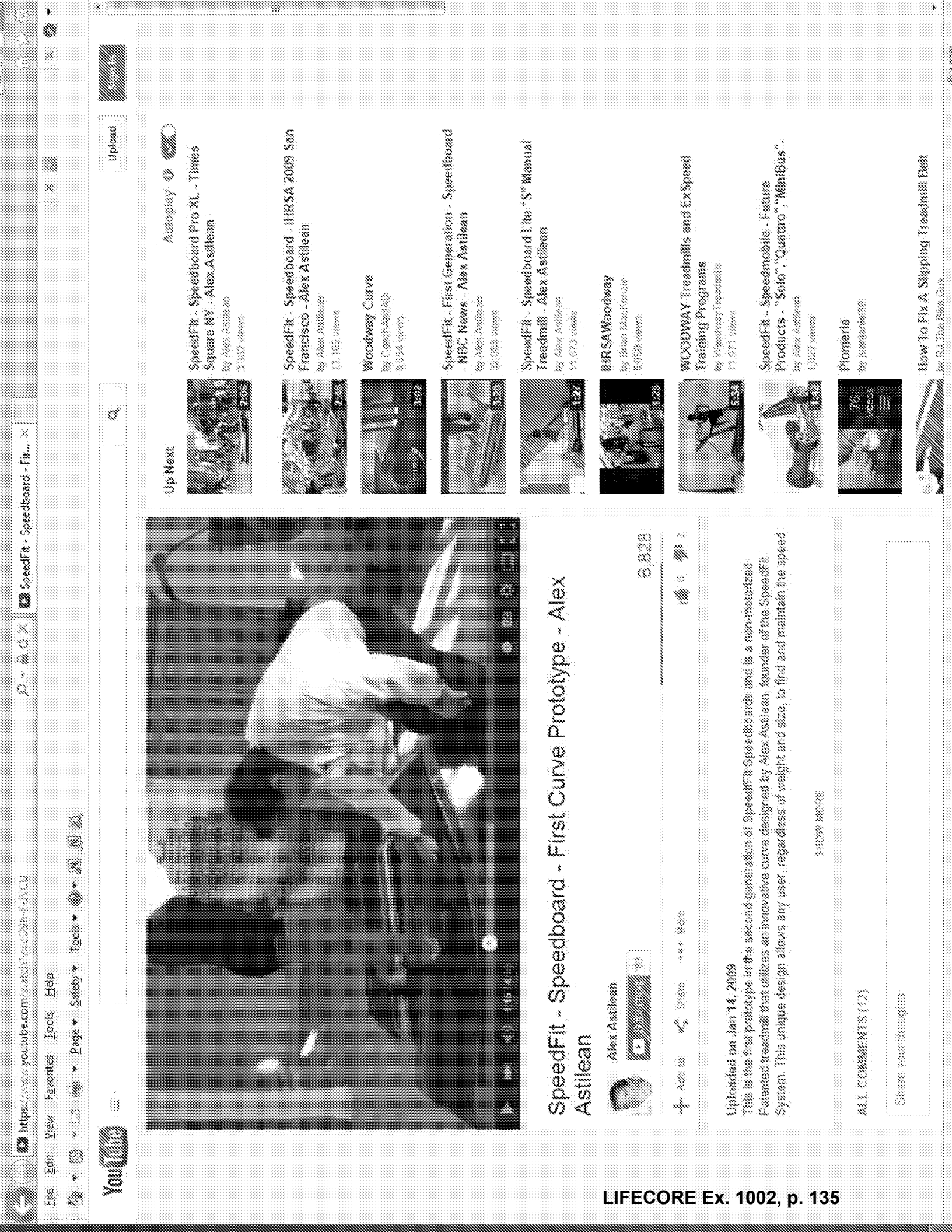
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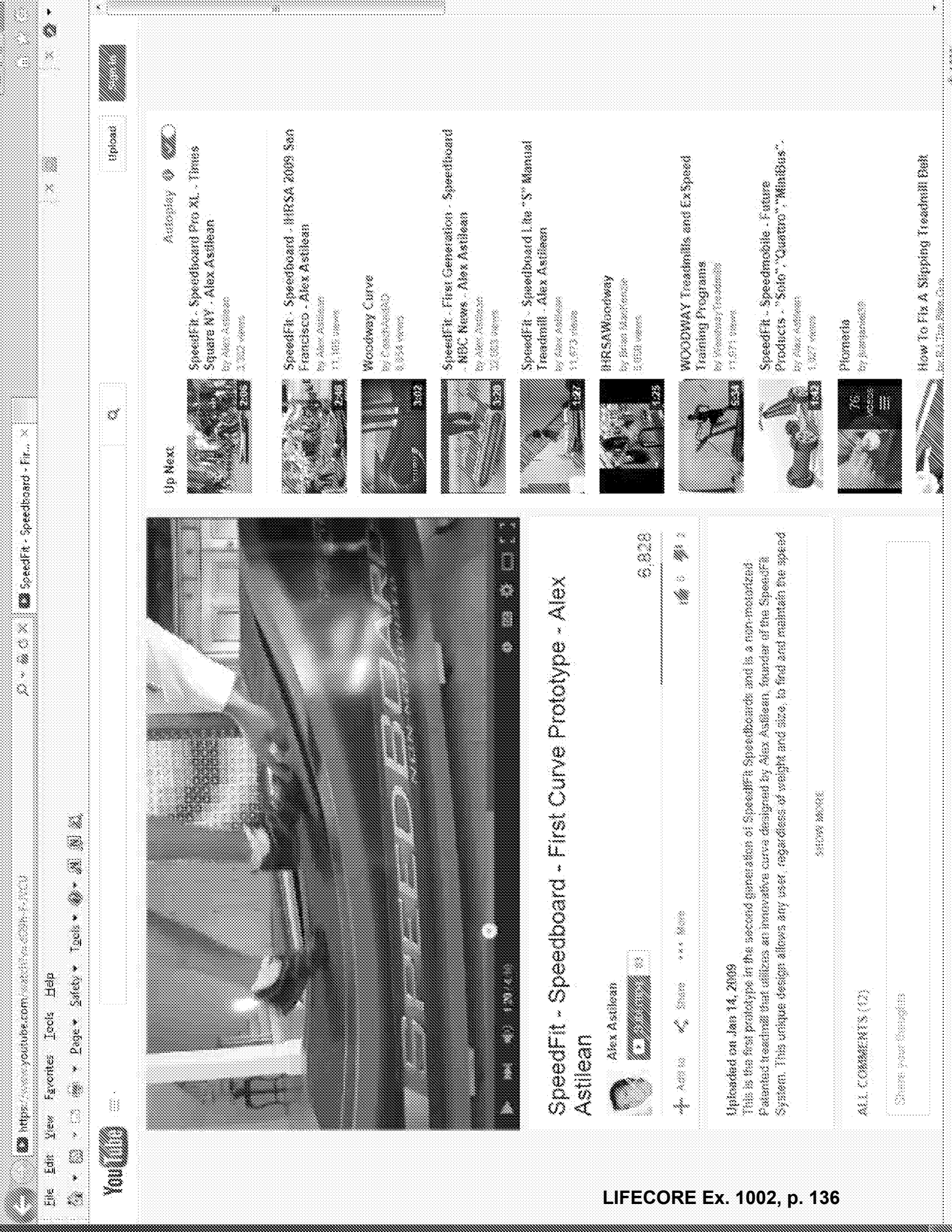


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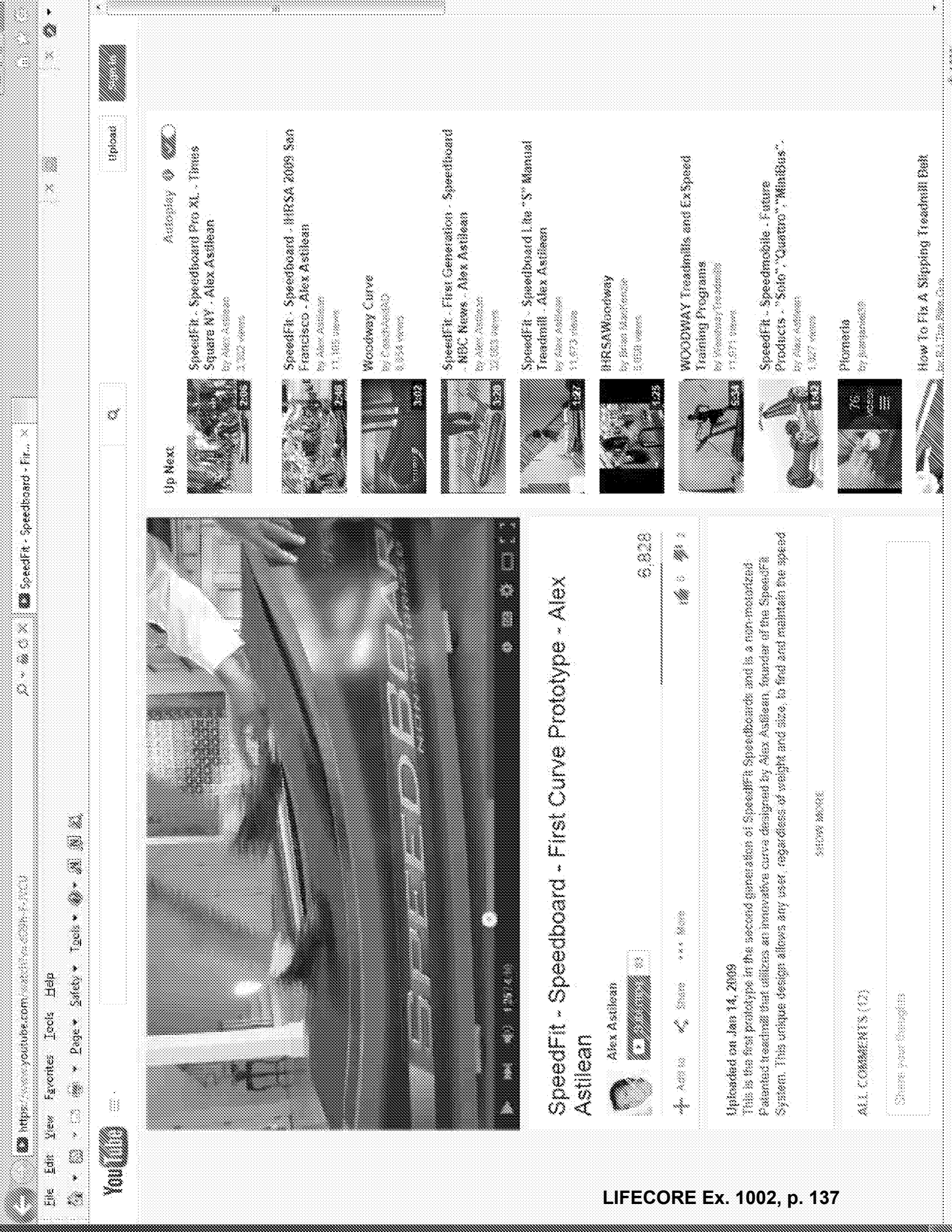
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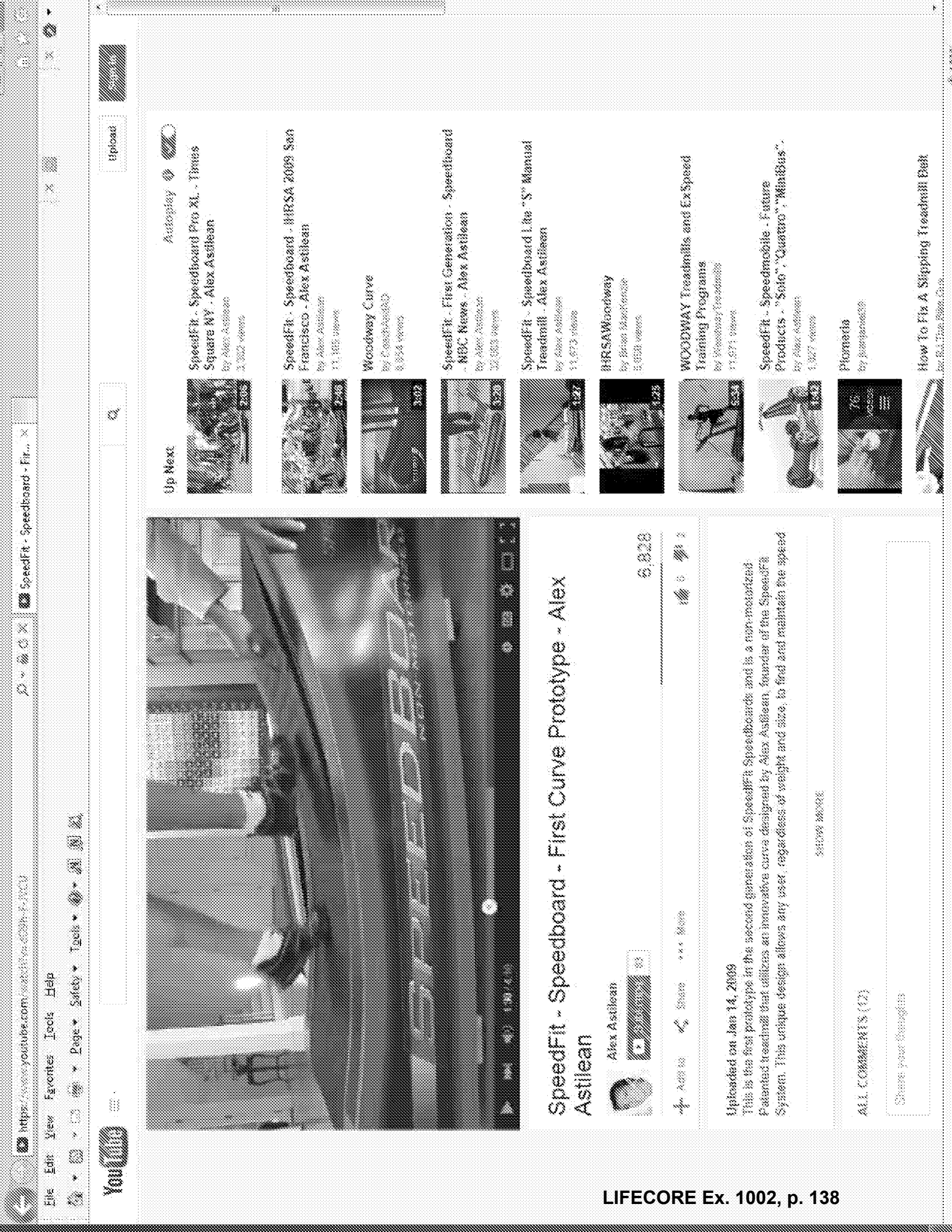
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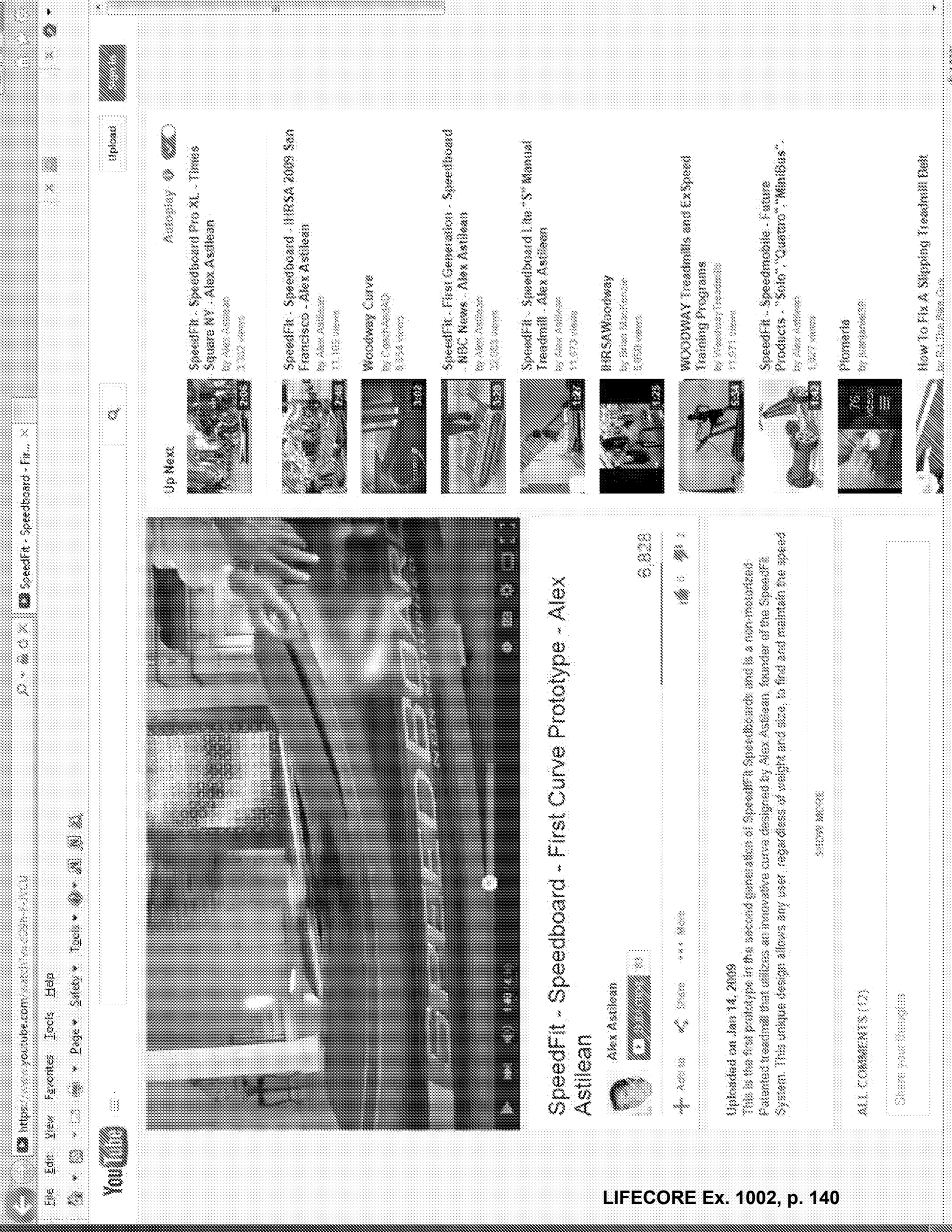
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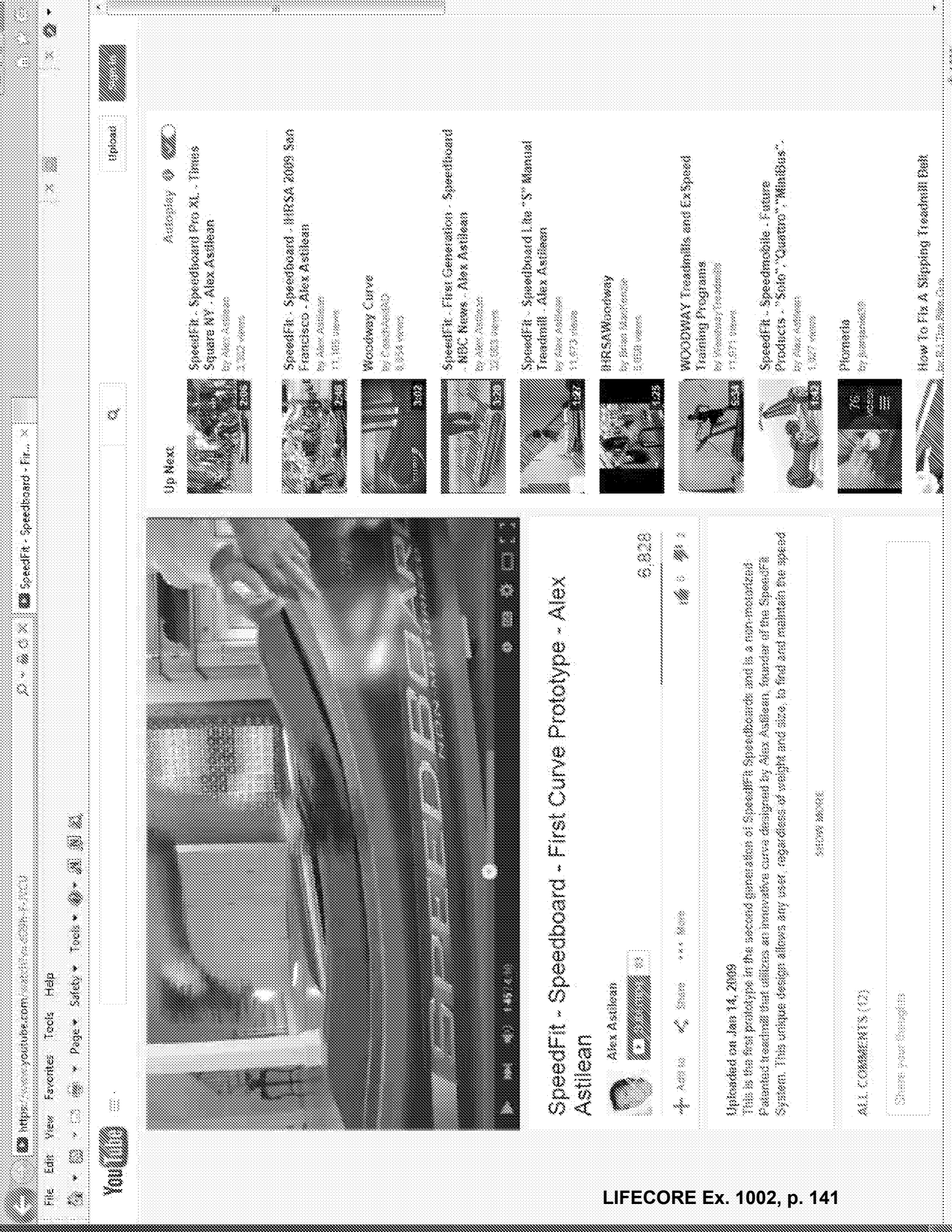
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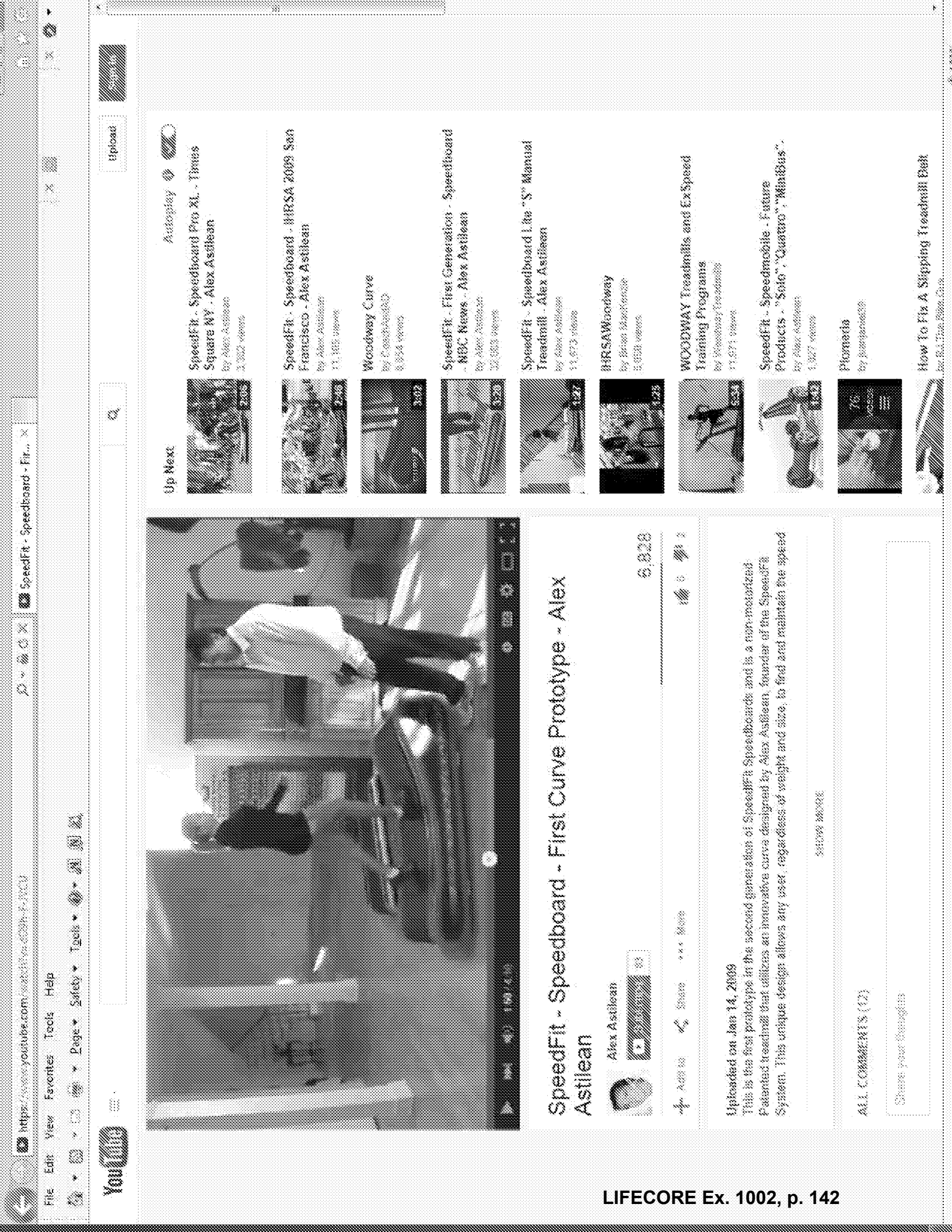
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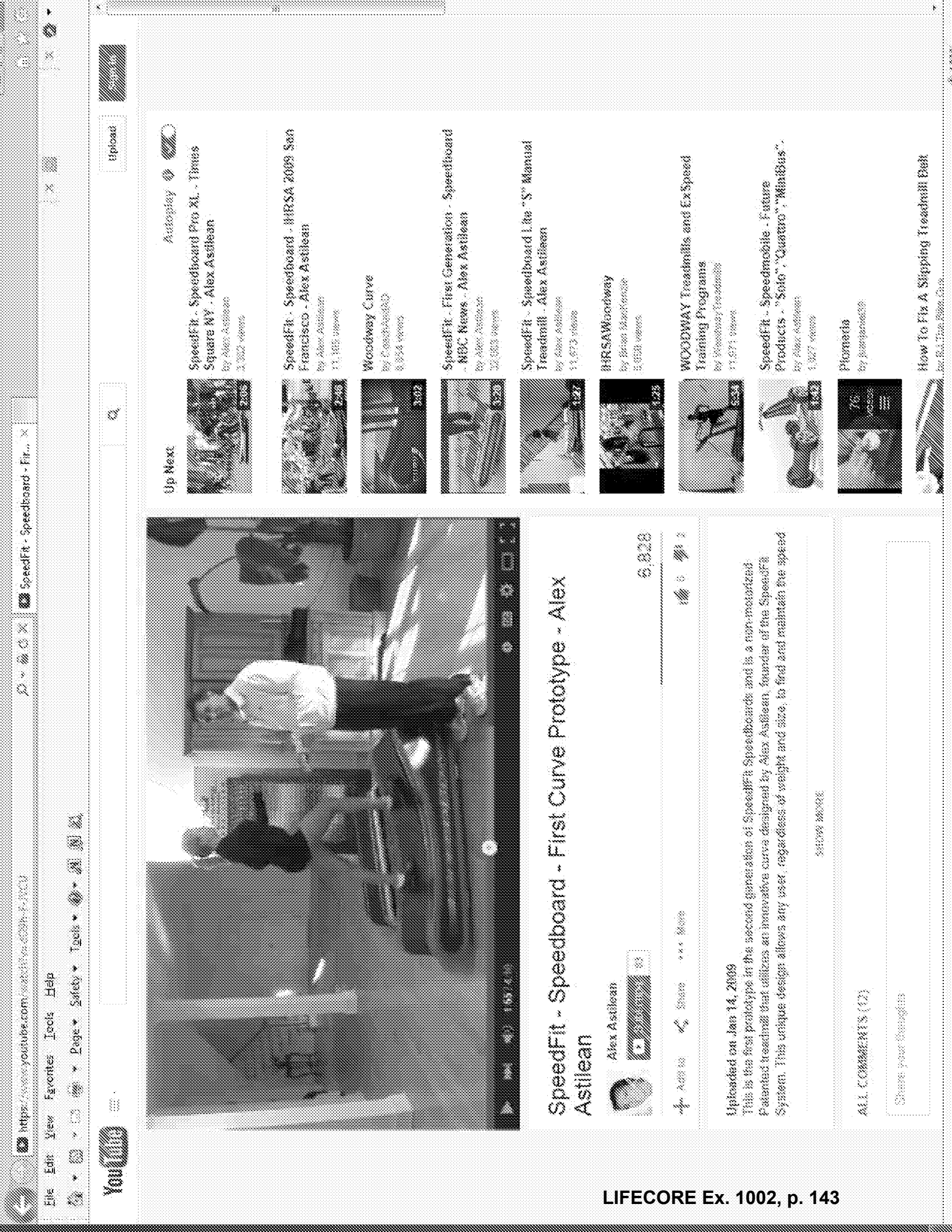
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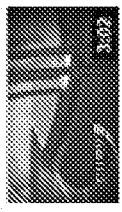
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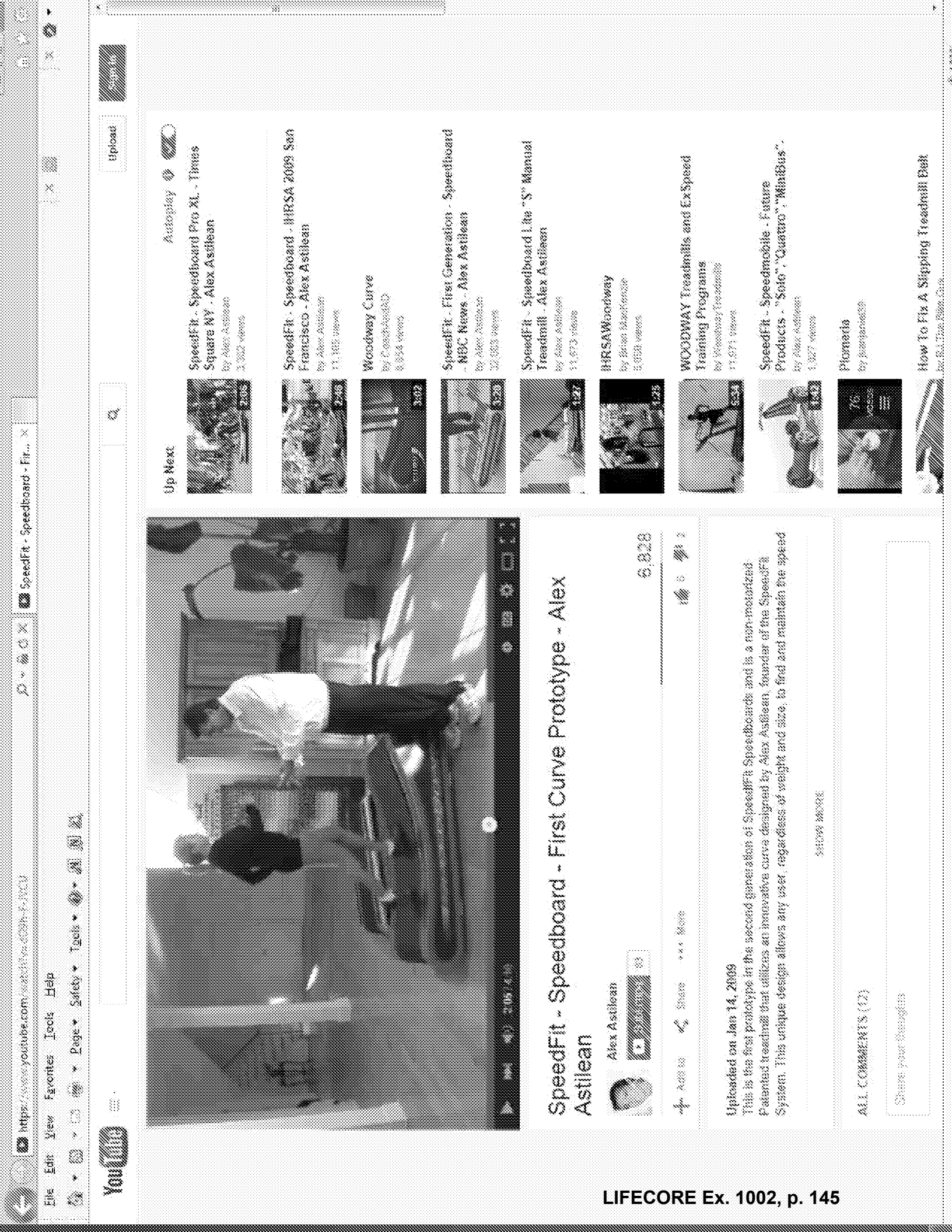
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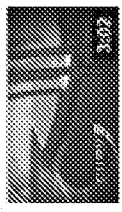
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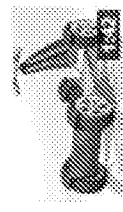
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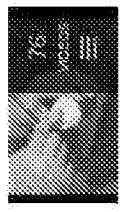
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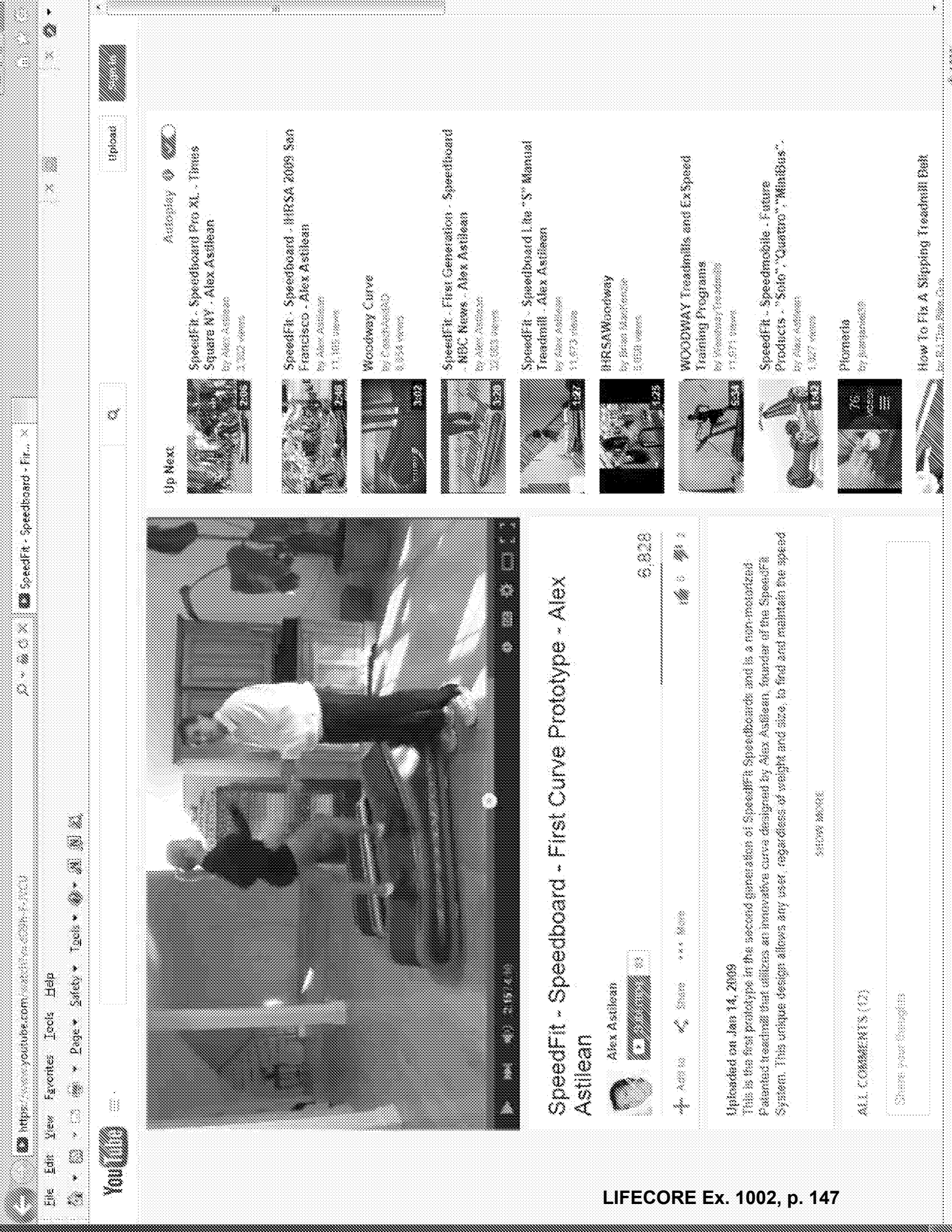
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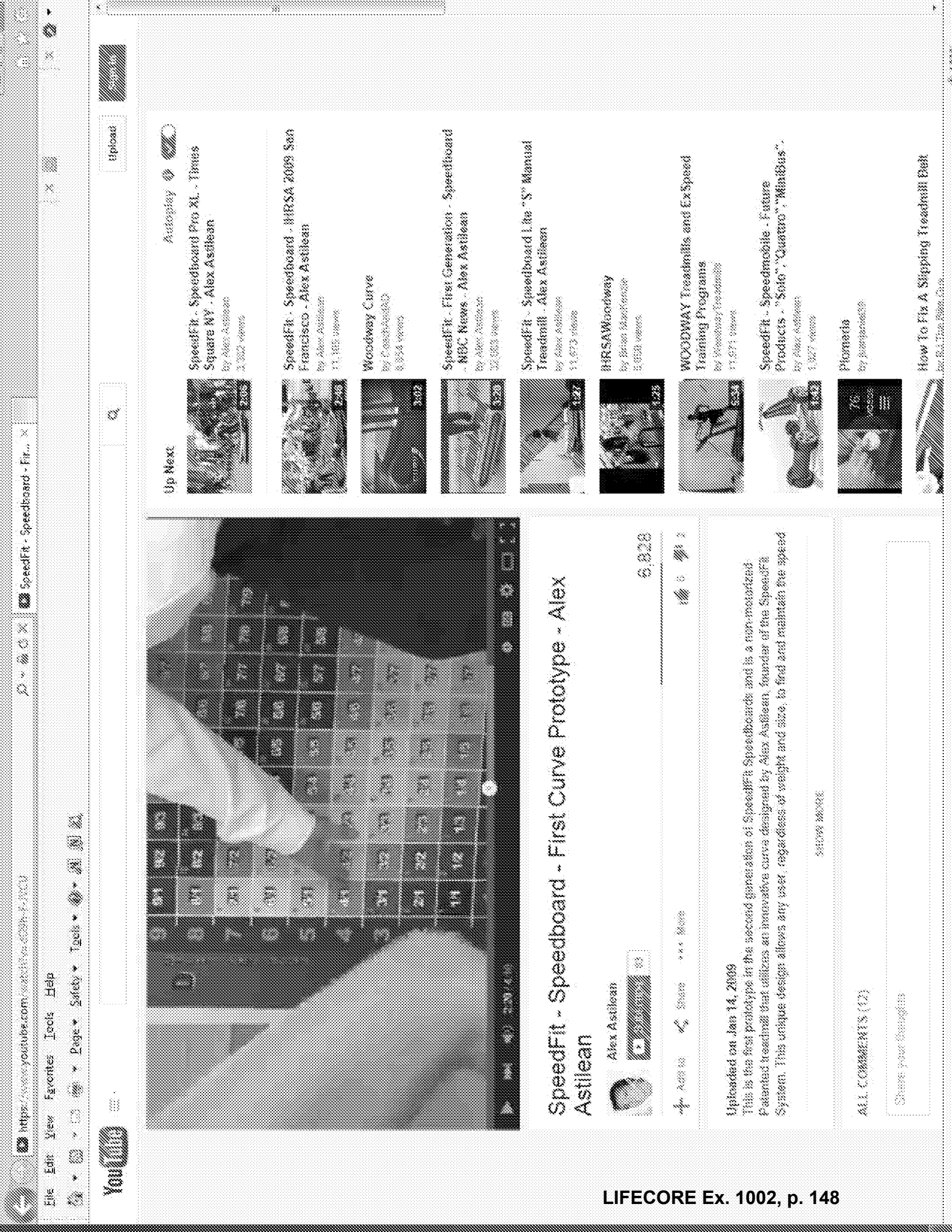


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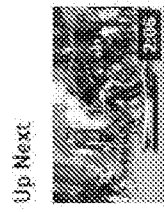




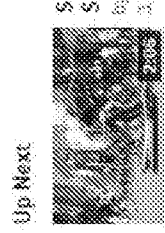
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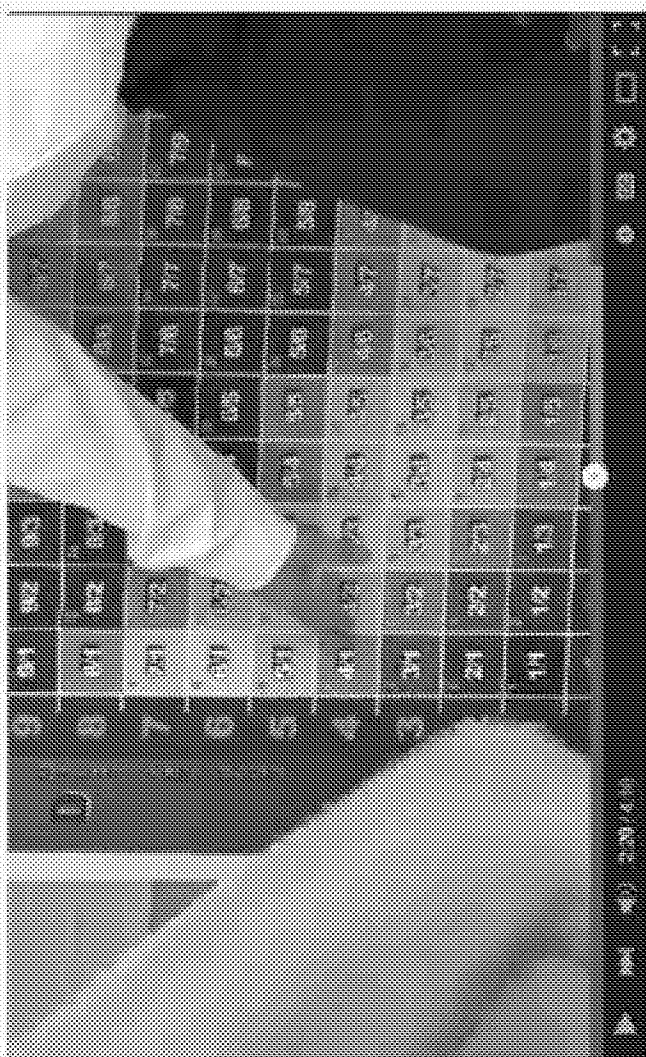
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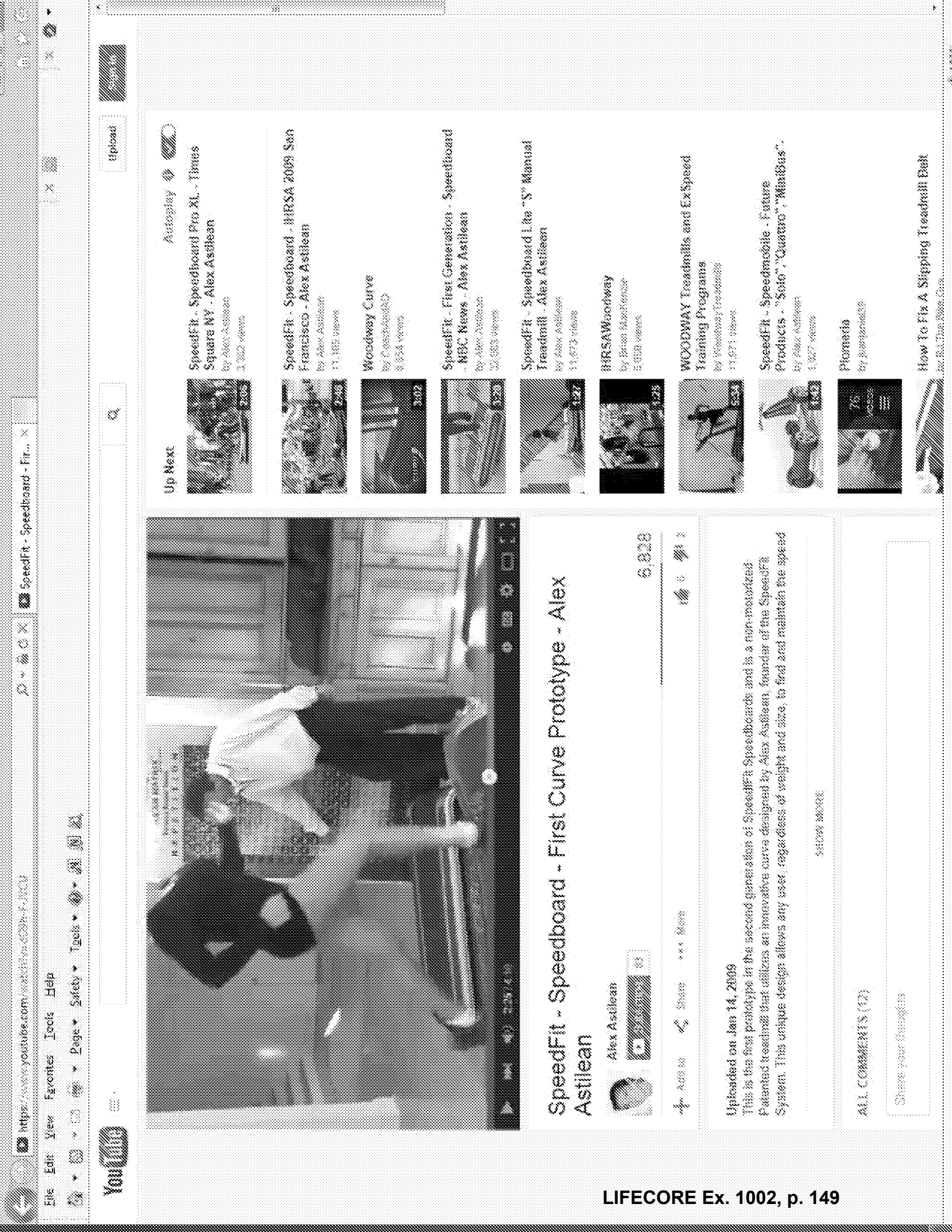
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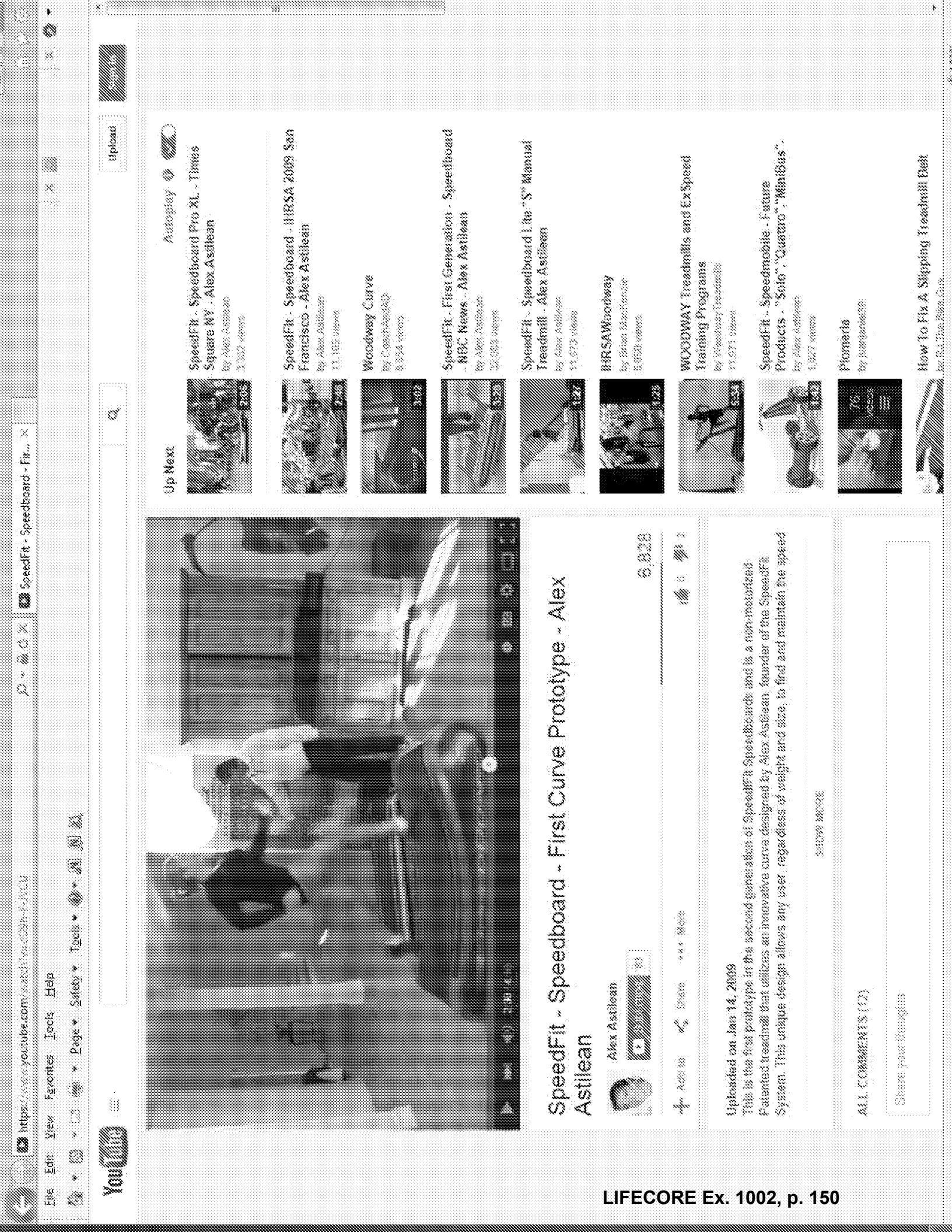
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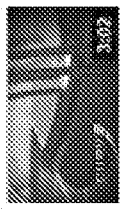
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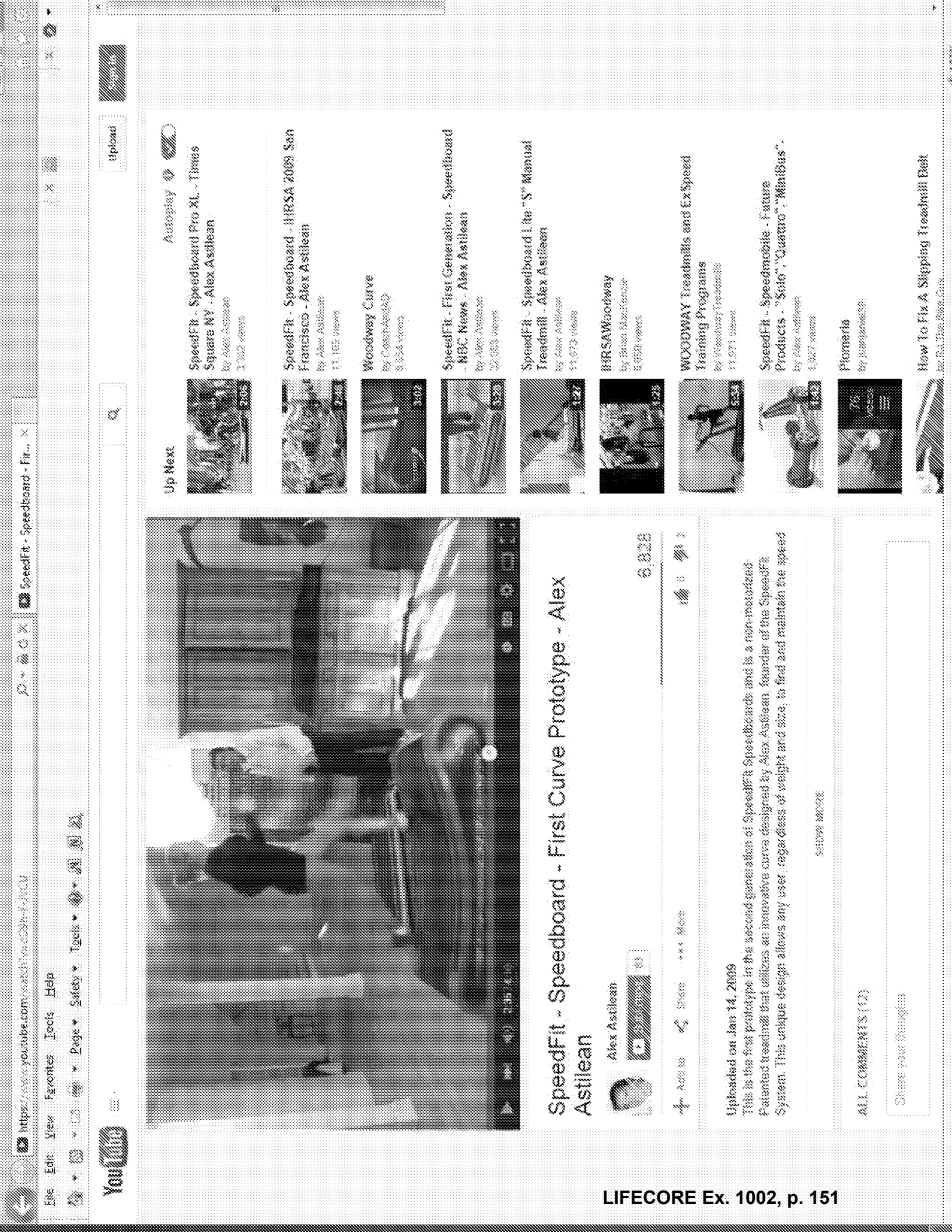
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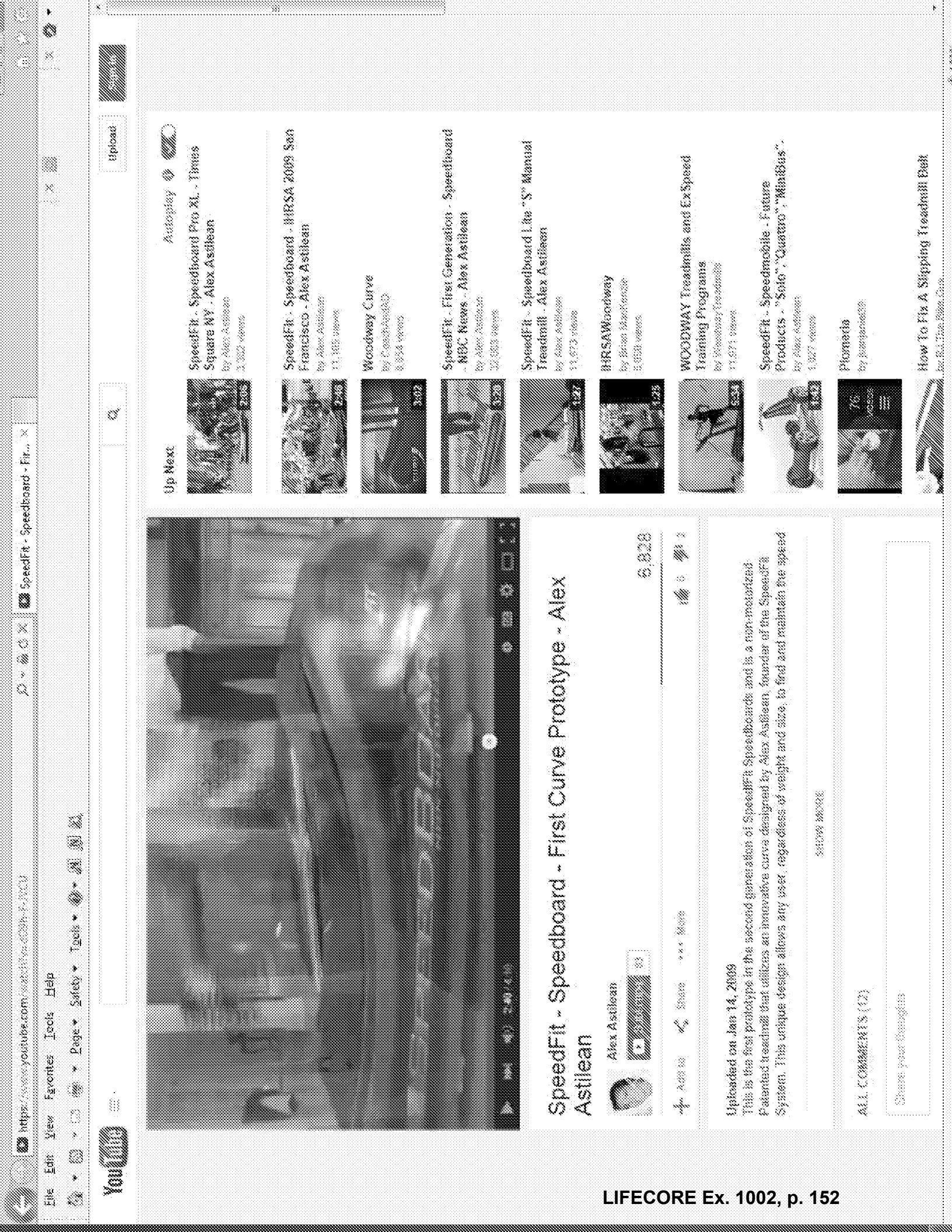
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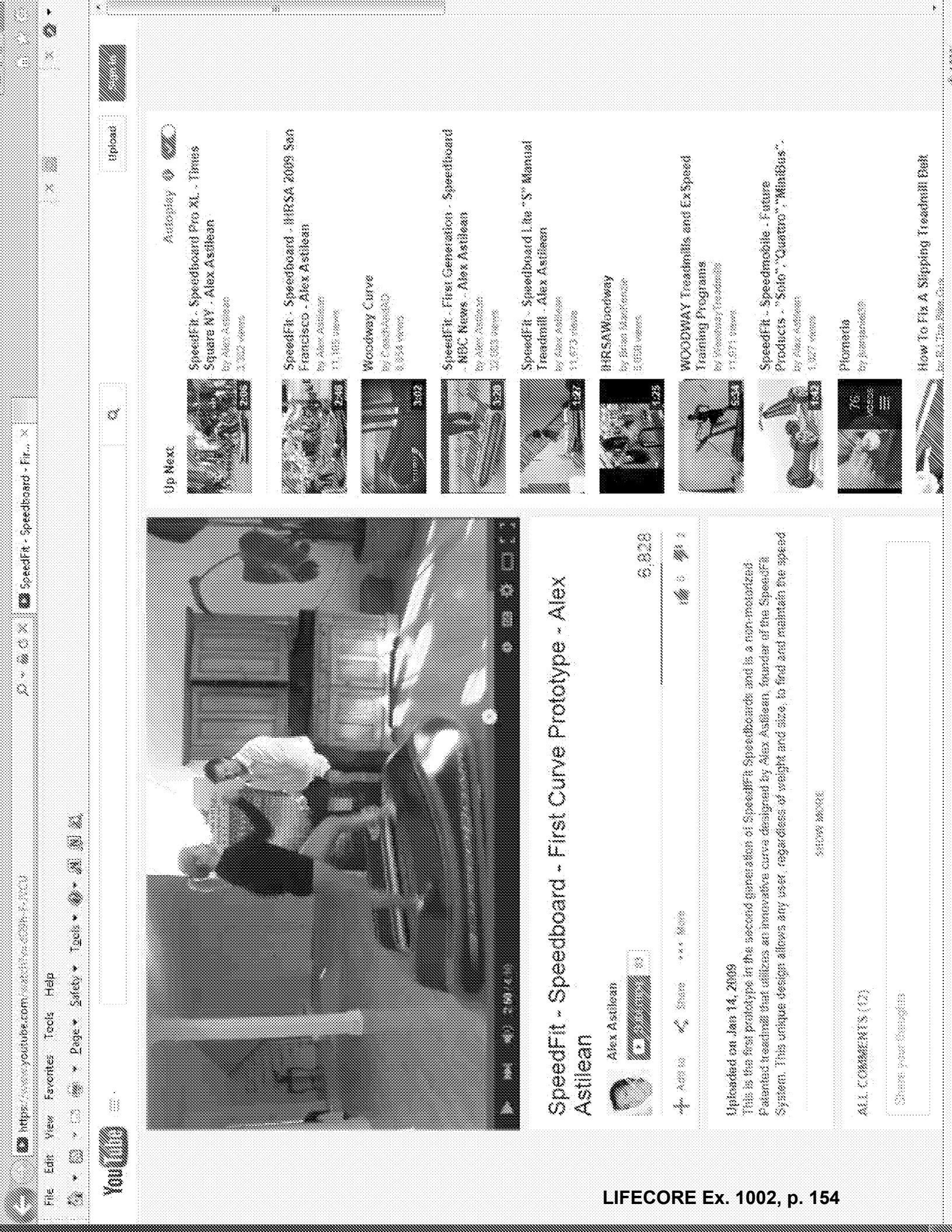
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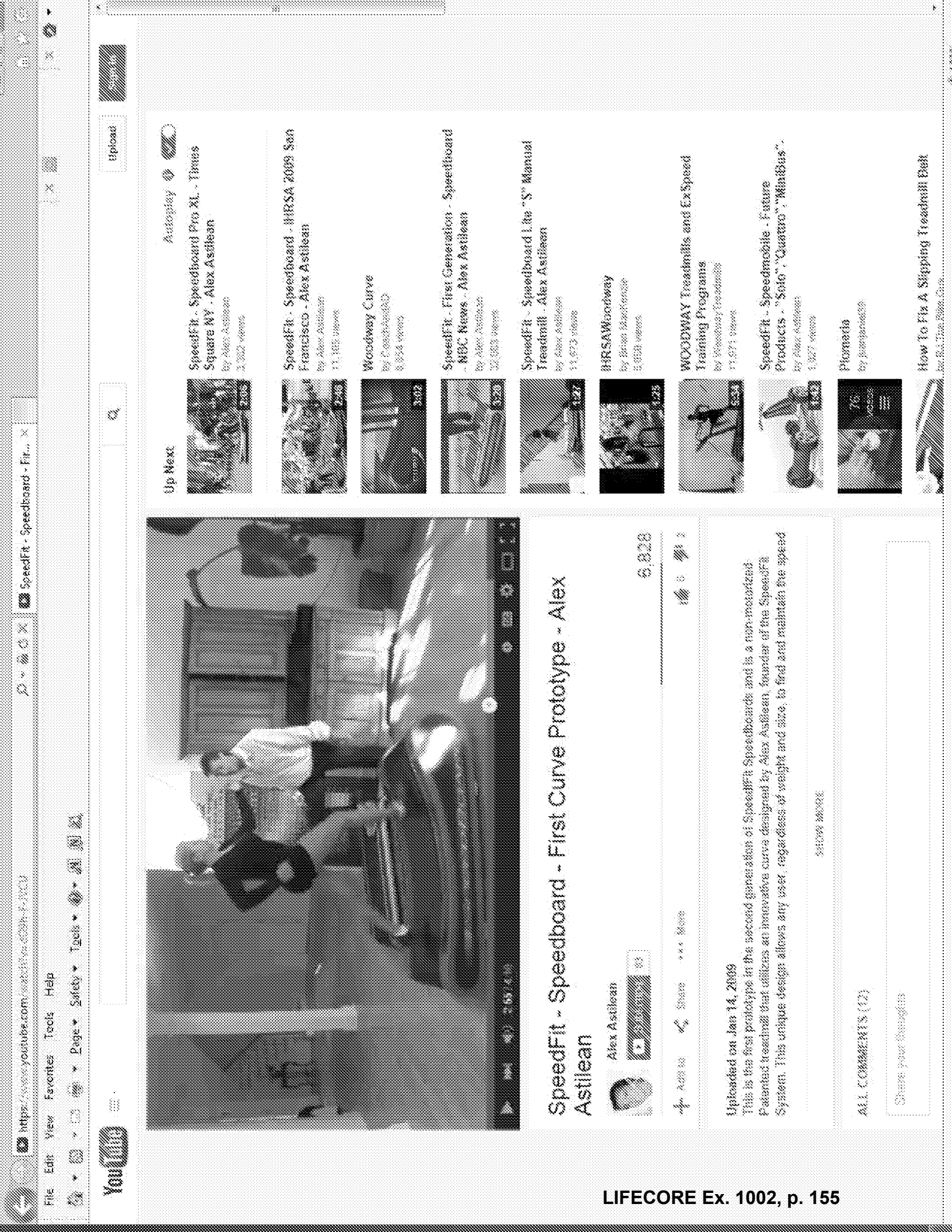
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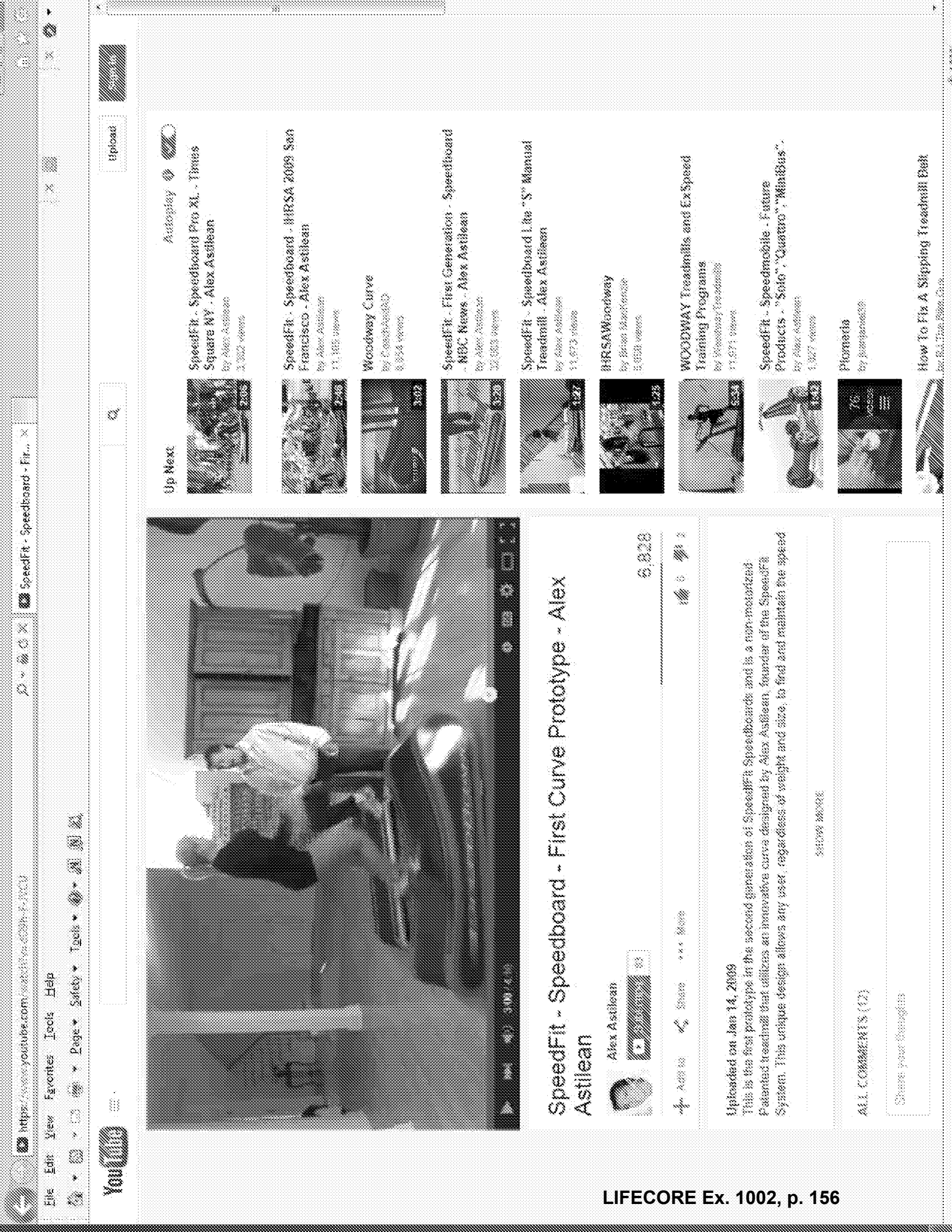
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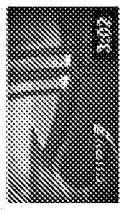
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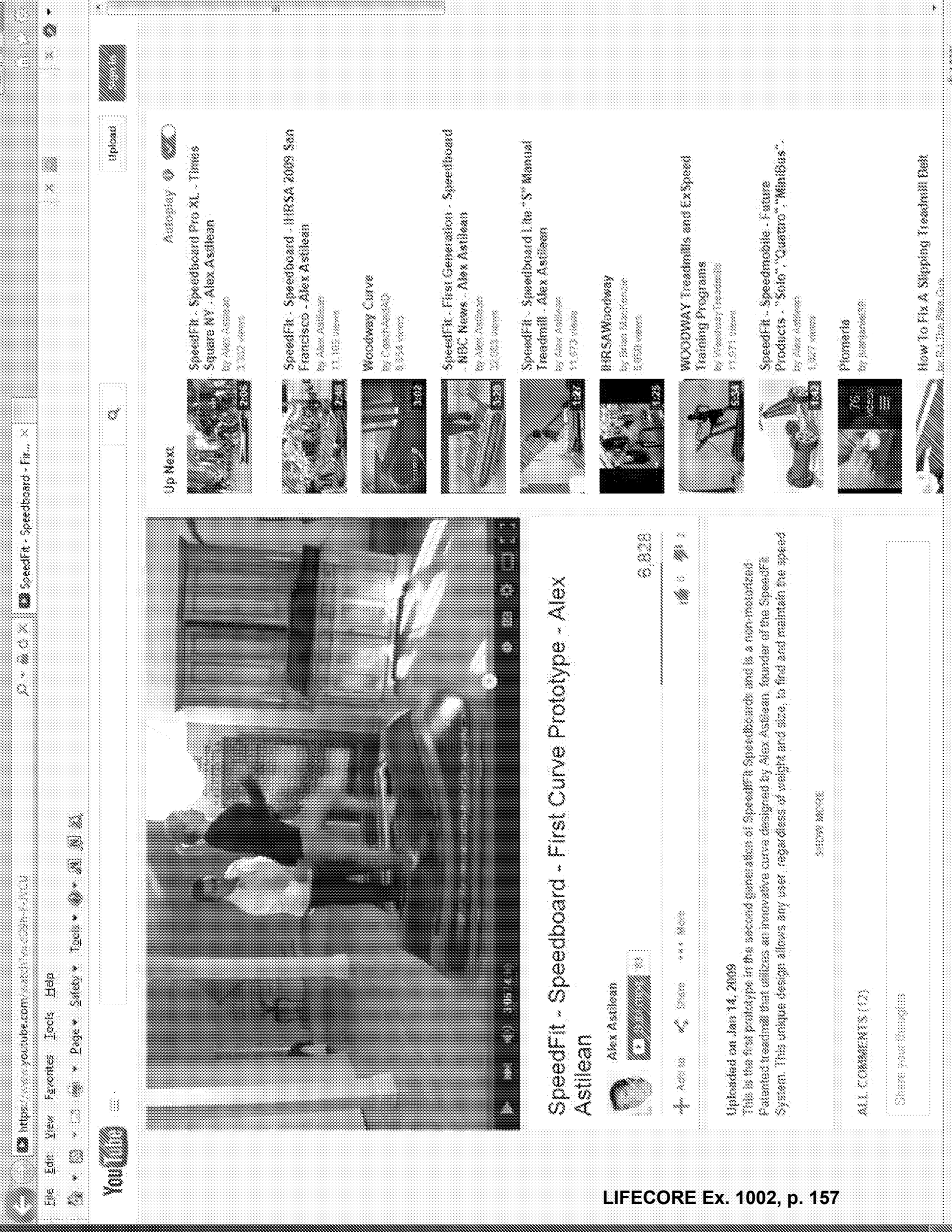
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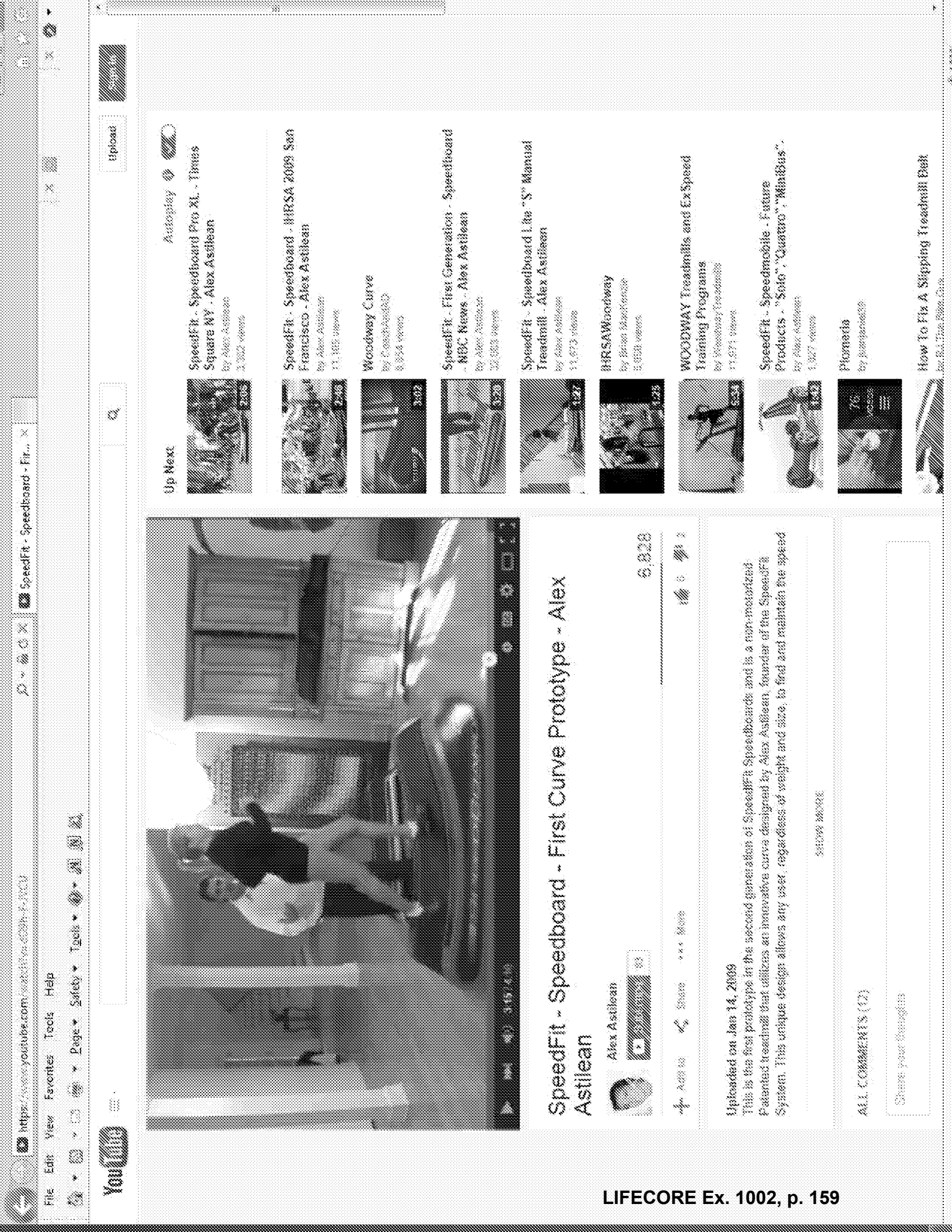


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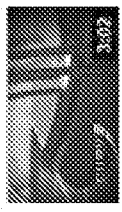
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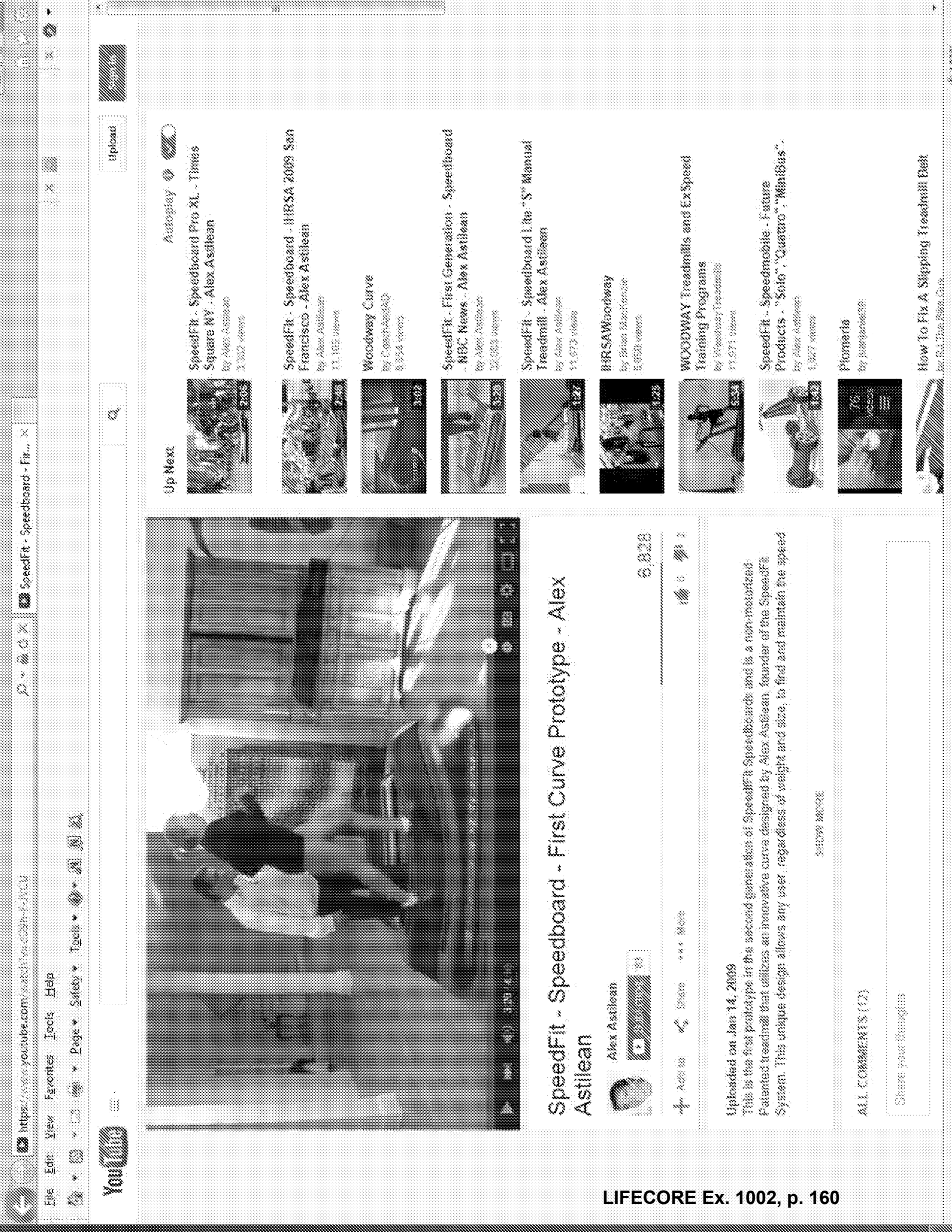
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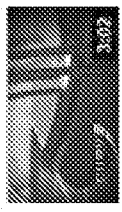
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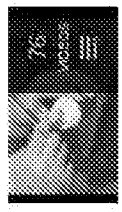
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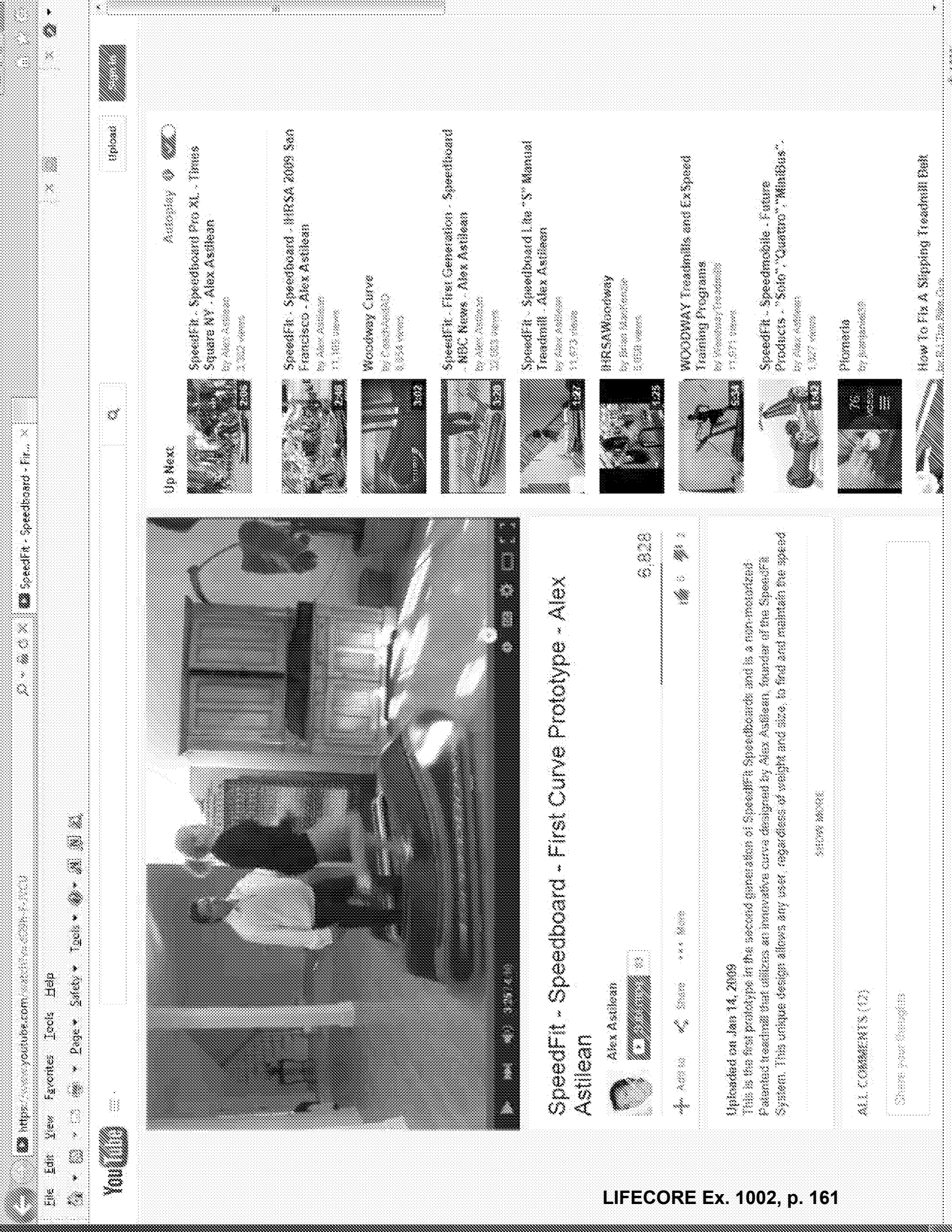
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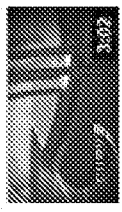
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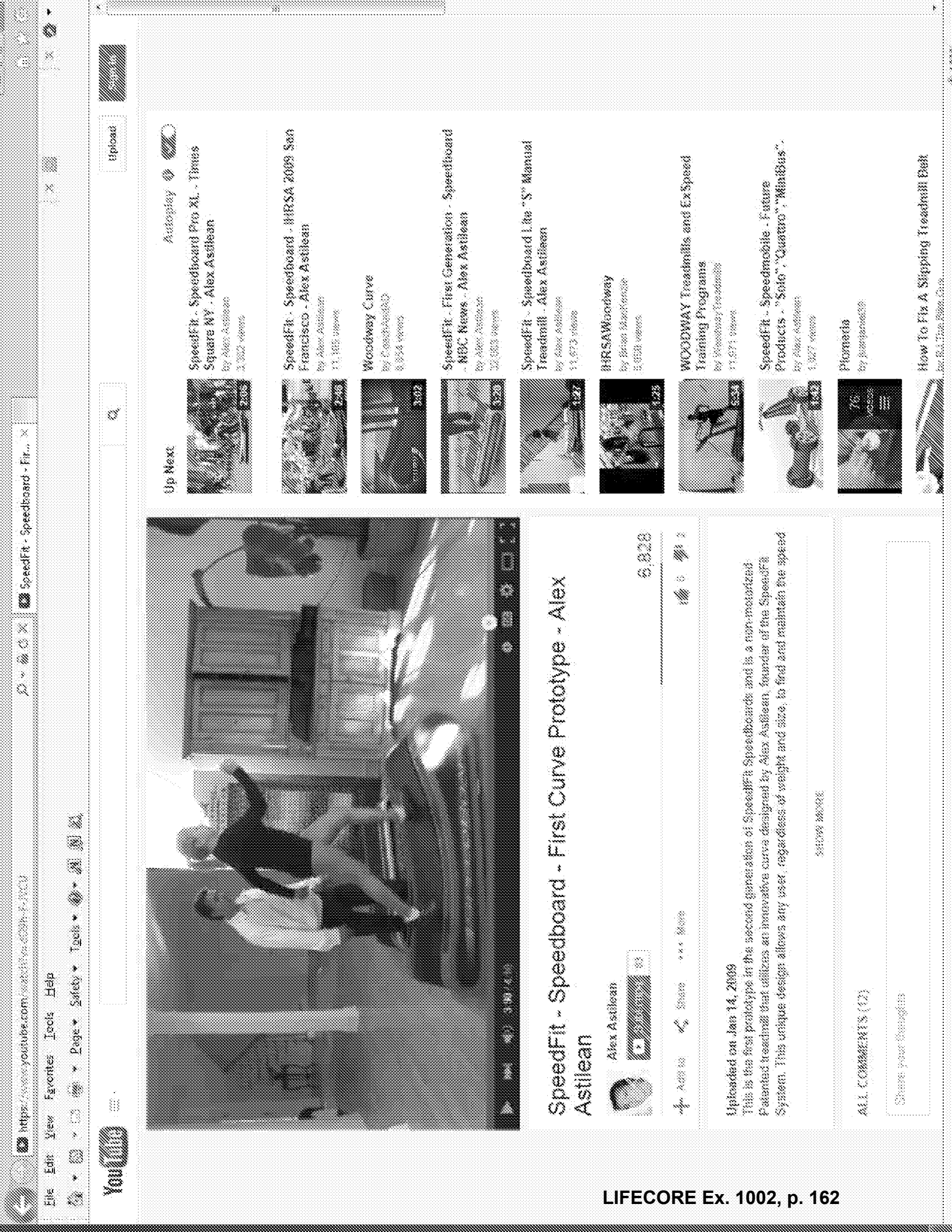
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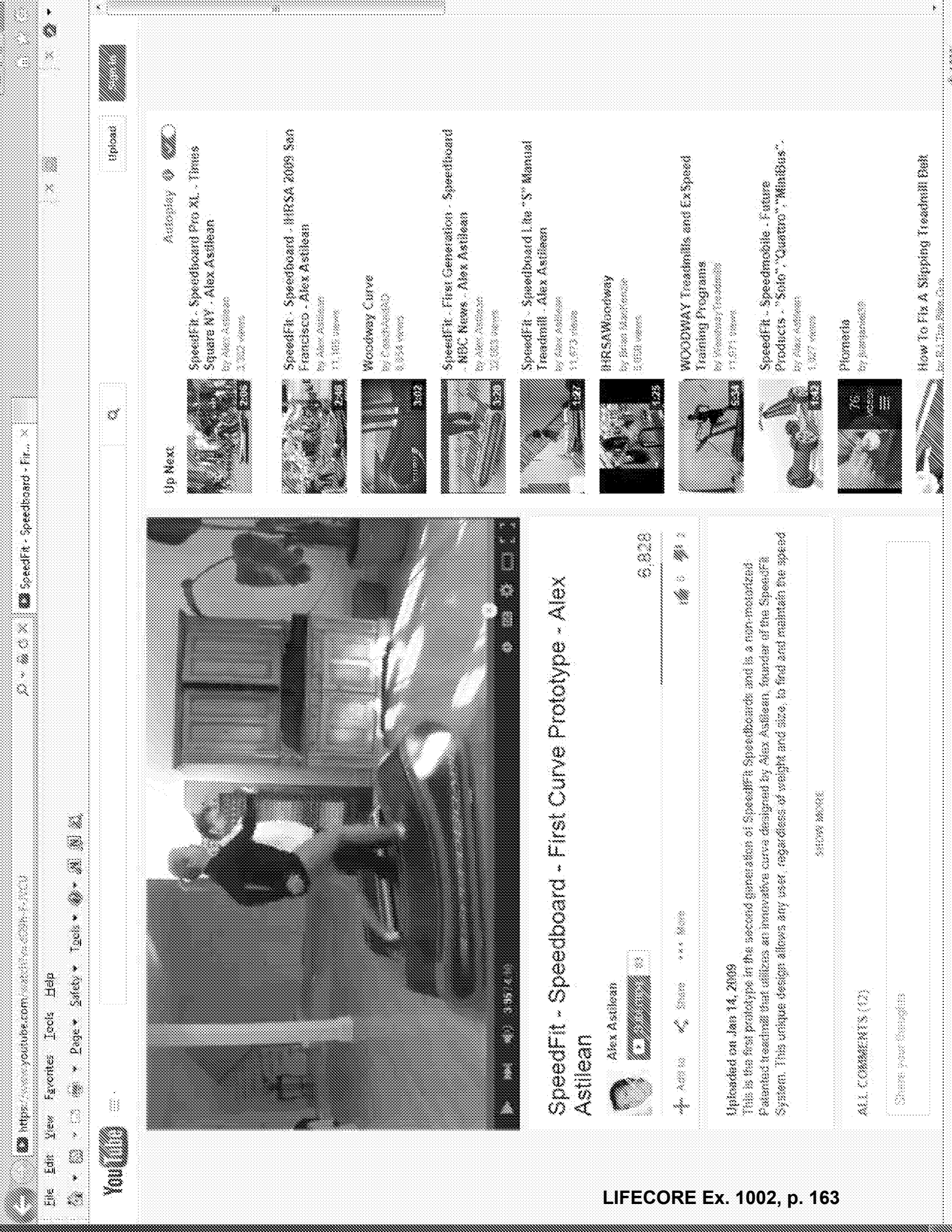


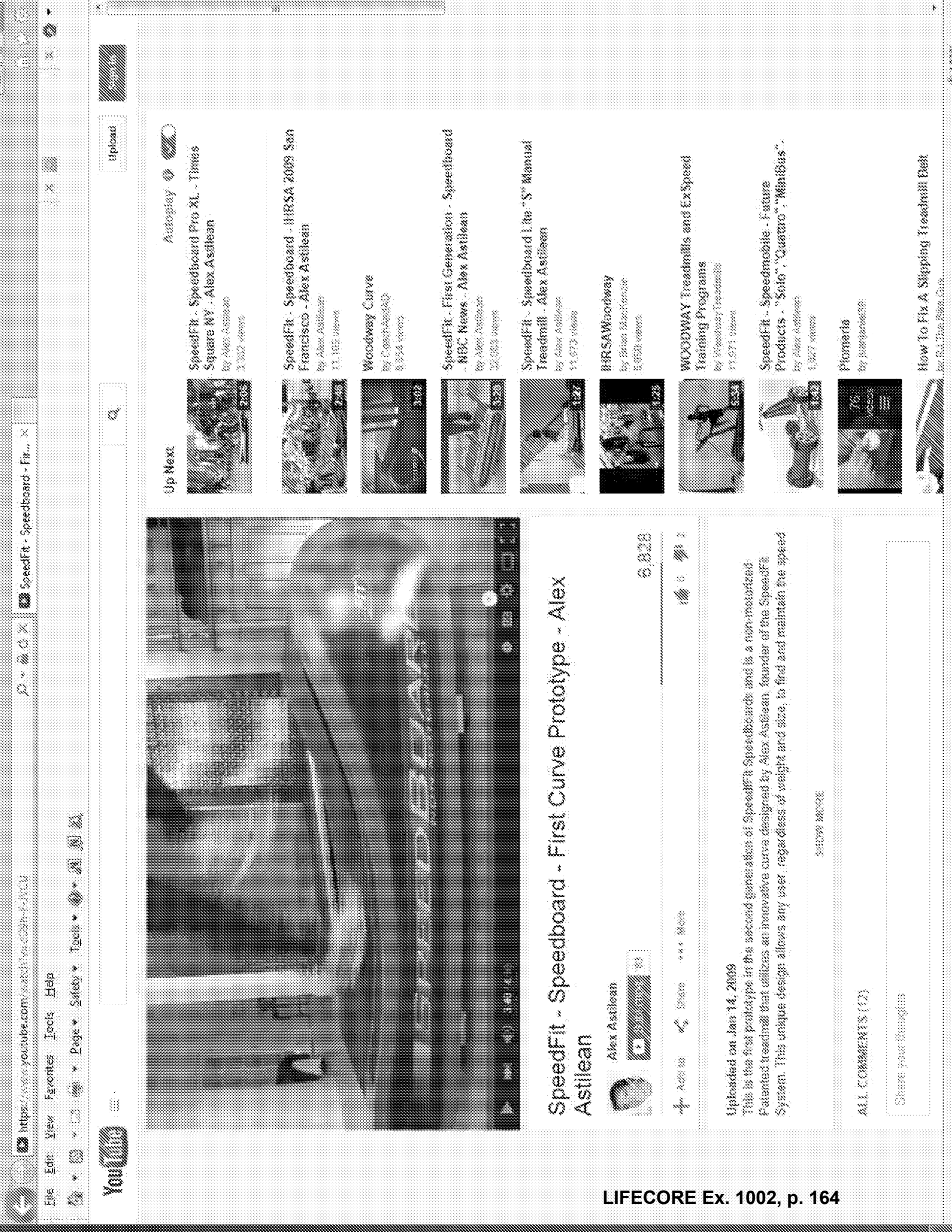
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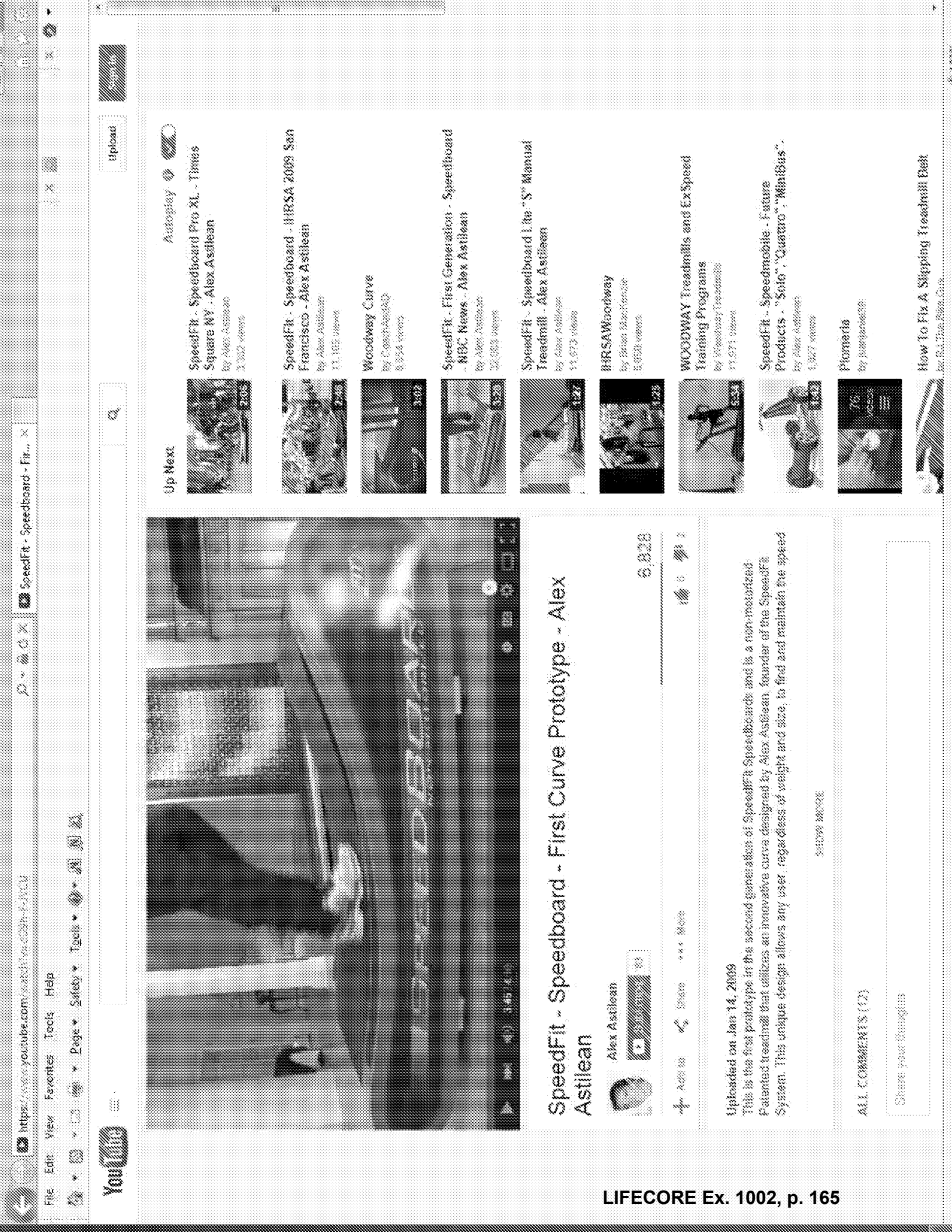


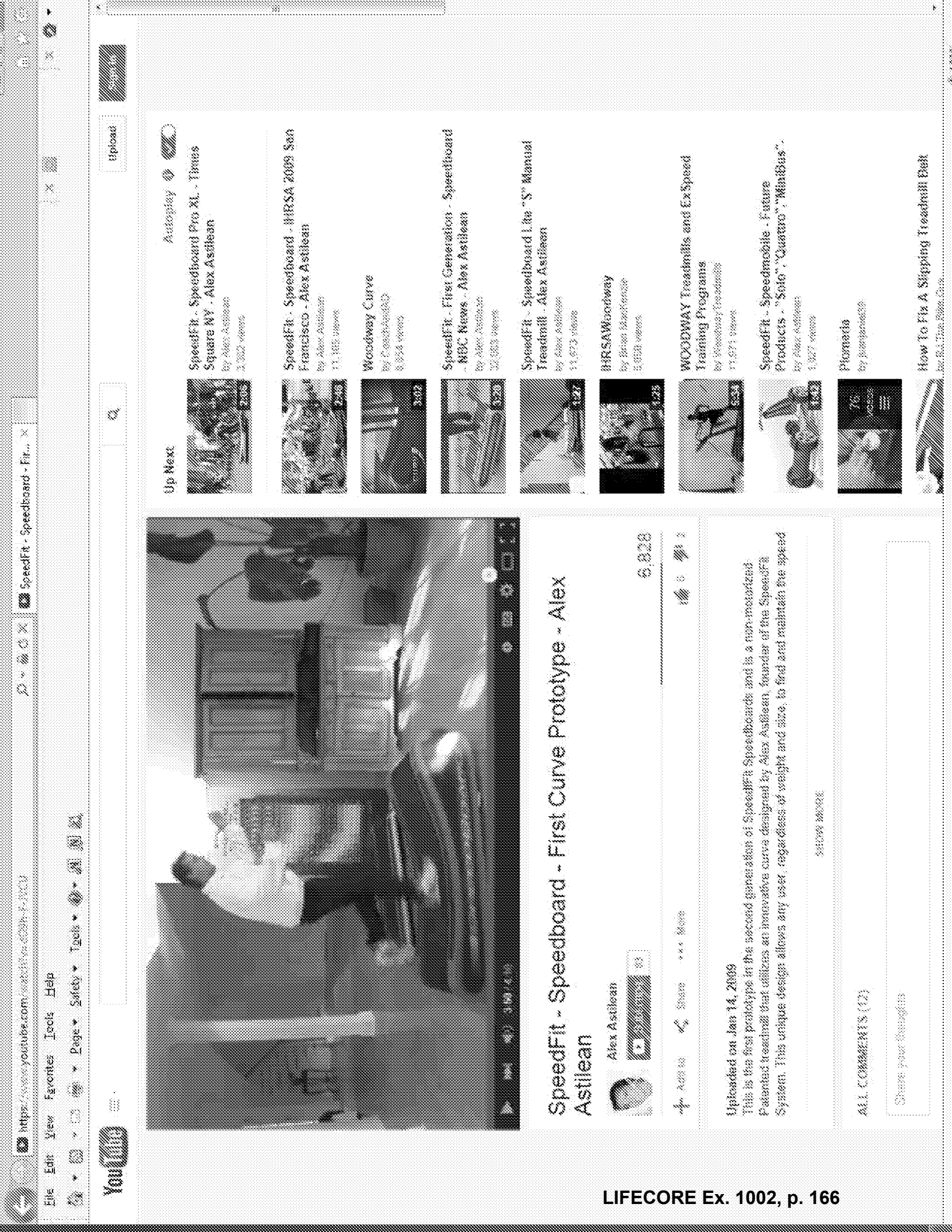
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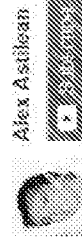








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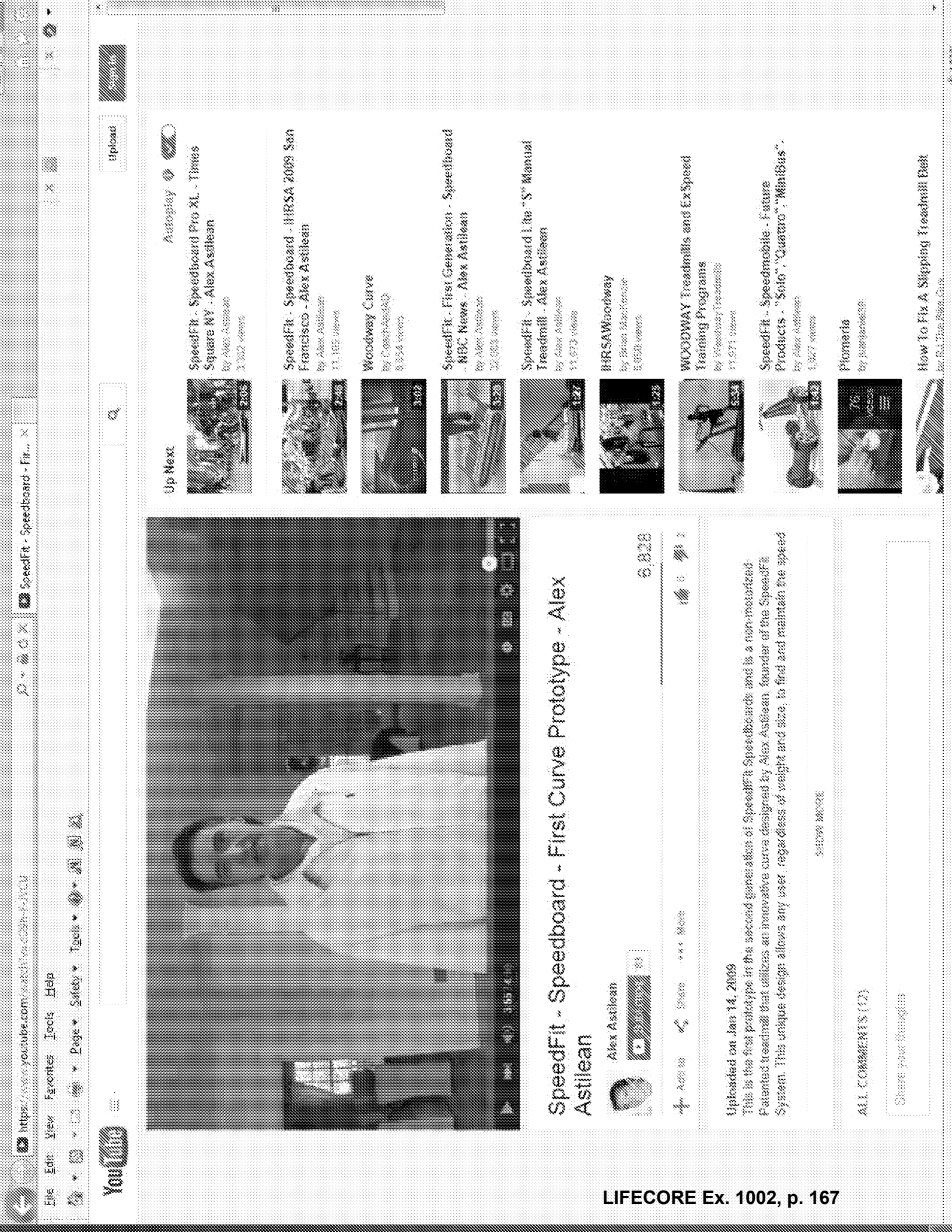
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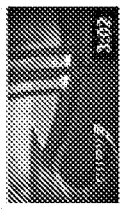
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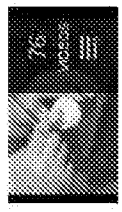
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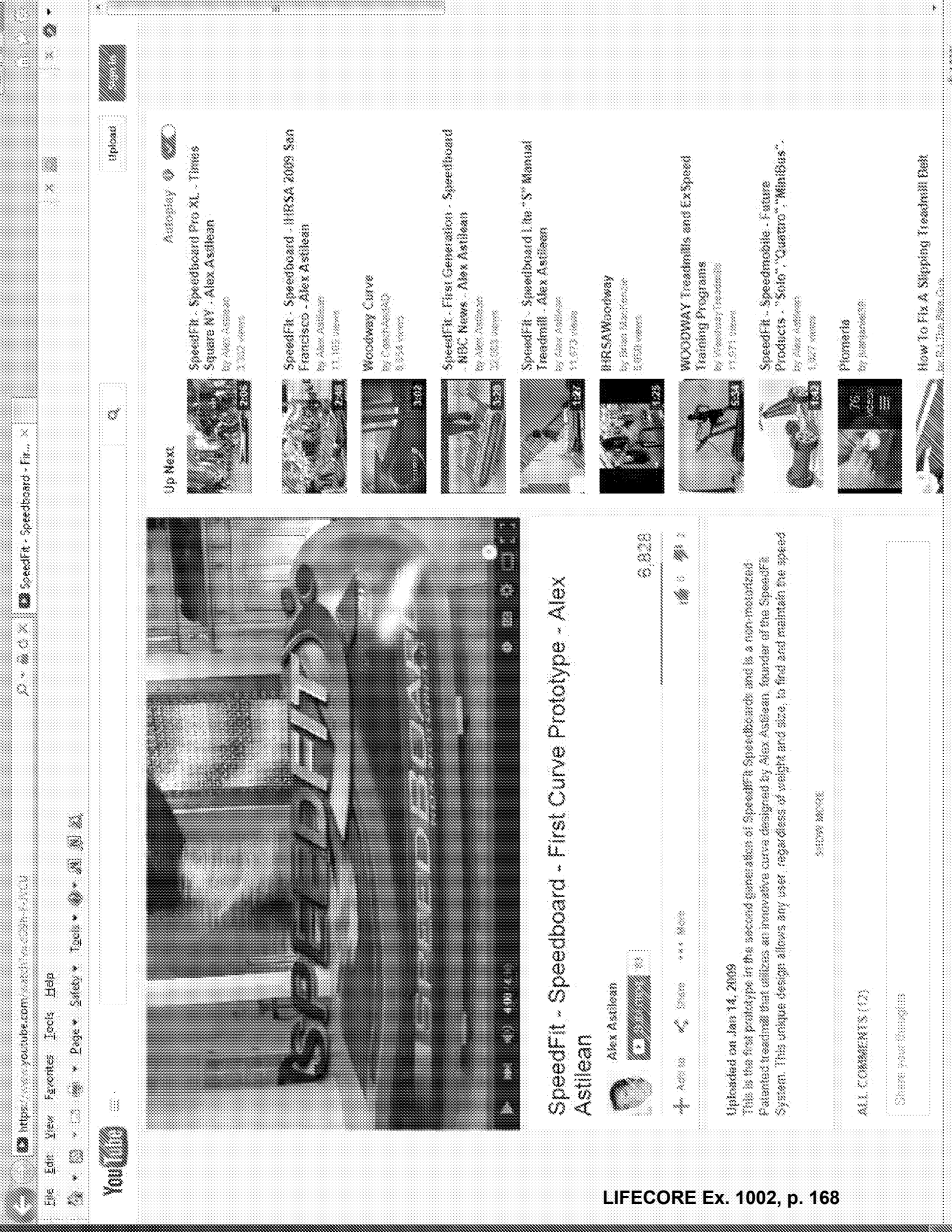
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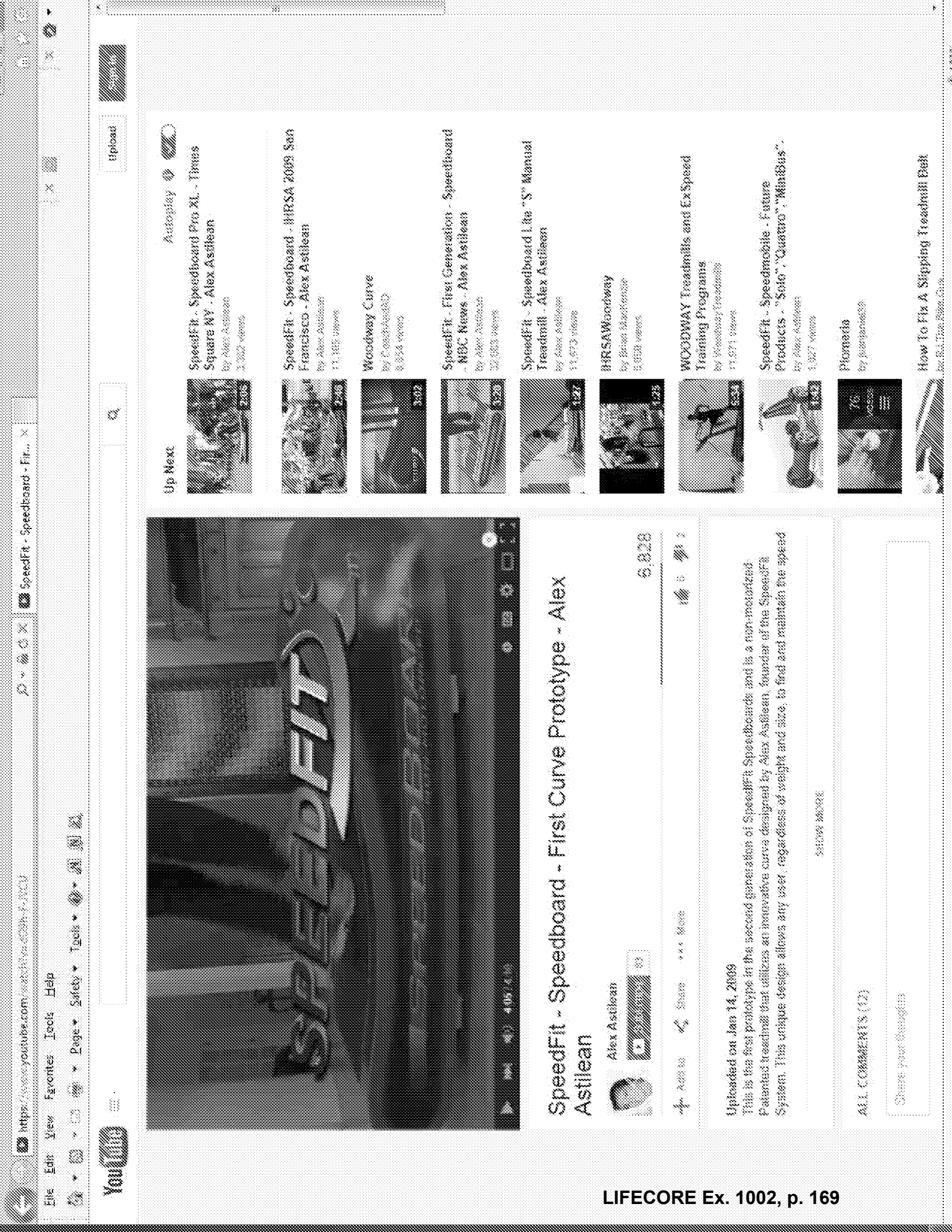
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First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Alexander J. Neuworth/Justin Fons
Filer Authorized By:	Alexander J. Neuworth
Attorney Docket Number:	097208-0204
Receipt Date:	07-APR-2015
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Application Type:	Utility under 35 USC 111(a)

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Warnings:					
Information:					
4	Non Patent Literature	Photographs_1-4.pdf	6674590 50469f0ca4835c431b49064c125dfd01f6b 9531	no	4
Warnings:					
Information:					
5	Non Patent Literature	Photographs_5-8.pdf	5479017 3a4bb43cbb997547ba3c9b153751b82efec 43d64	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			18815826		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name: Douglas G. Bayerlein
Title: MANUAL TREADMILL AND METHODS
OF OPERATING THE SAME
Appl. No.: 14/656,942
Filing Date: 3/13/2015
Examiner: GINSBERG, Oren Isaac
Art Unit: 3764
Confirmation Number: 5409

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicant respectfully requests that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including application no. PCT/US10/27543, filed 3/16/2010; application no. 13/235,065, filed 9/16/2011; application no. 14/243,716, filed 4/2/2014, for copies of references of record therein that are not

being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

Regarding reference A3, Applicant is citing the YouTube video entitled "SpeedFit-Speedboard-First Curve Prototype" by Alex Astilean that is asserted as having been uploaded on January 14, 2009. Document A3 is a pictorial representation of screenshots of the video in five (5) second increments.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the filing date of the application.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date 4-7-2015

By /Alexander J. Neuworth/

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (414) 319-7029
Facsimile: (414) 297-4900

Alexander J. Neuworth
Attorney for Applicant
Registration No. 72,021

To: ipdocketing@foley.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

Apr 07, 2015 05:39:27 AM

Dear PAIR Customer:

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 26371 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:

The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
14656942	TRACK1.GRANT	04/02/2015	097208-0204

To view your correspondence online or update your email addresses, please visit us anytime at <https://portal.uspto.gov/secure/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

26371 7590 04/16/2015
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

EXAMINER

GINSBERG, OREN ISAAC

ART UNIT

PAPER NUMBER

3764

DATE MAILED: 04/16/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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14/656,942

03/13/2015

Douglas G. Bayerlein

097208-0204

5409

TITLE OF INVENTION: MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	07/16/2015

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

26371 7590 04/16/2015
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,942	03/13/2015	Douglas G. Bayerlein	097208-0204	5409

TITLE OF INVENTION: MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	07/16/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
GINSBERG, OREN ISAAC	3764	482-054000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.	2. For printing on the patent front page, list (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____ (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____ 3 _____
---	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order - # of Copies _____	4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above) <input type="checkbox"/> A check is enclosed. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input type="checkbox"/> The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).
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5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,942	03/13/2015	Douglas G. Bayerlein	097208-0204	5409

26371 7590 04/16/2015
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

EXAMINER

GINSBERG, OREN ISAAC

ART UNIT PAPER NUMBER

3764

DATE MAILED: 04/16/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/656,942	Applicant(s) BAYERLEIN ET AL.	
	Examiner OREN GINSBERG	Art Unit 3764	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the filing dated 3/13/2015.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-17 and 19-26. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>3/13/2015, 4/7/2015</u> 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>see attached</u> .	5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____.
---	---

/OREN GINSBERG/ Primary Examiner, Art Unit 3764	
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EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard McKenna on 4/7/2015.

The application has been amended as follows:

Claim 18 has been canceled.

Claim 11:

Line 4, --a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;

a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;-- was inserted after "rear end;"

Line 5, "rear shaft, wherein" has been changed to --rear shaft and at least partially supported by the first bearing rail and the second bearing rail, wherein--.

Claim 19:

Line 1, "18" has been changed to --11--.

Claim 26:

Line 4, --each comprising a plurality of bearings and-- was inserted after "rails".

Line 7, --the plurality of bearings of-- was inserted after "belt on".

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

The prior art fails to disclose or render obvious the limitations of the independent claims. The prior art discloses a human-powered treadmill with a frame, a pair of shafts, and a curved running belt disposed on the shafts. *See, e.g.*, U.S. Patent 1,211,765 (Schmidt). However, the prior art lacks the same in combination with a pair of bearing rails, each bearing rail comprising a plurality of bearings, the bearing rails supporting the running belt, and a safety device associated with one of the shafts to prevent that shaft and the running belt from rotating one direction while allowing free rotation in the opposite direction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OREN GINSBERG whose telephone number is (571)270-3074. The examiner can normally be reached on Mon-Thur, 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LoAn Thanh can be reached on (571)272-4966. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OREN GINSBERG/
Primary Examiner, Art Unit 3764

<i>Examiner-Initiated Interview Summary</i>	Application No. 14/656,942	Applicant(s) BAYERLEIN ET AL.	
	Examiner OREN GINSBERG	Art Unit 3764	

All participants (applicant, applicant's representative, PTO personnel):

(1) OREN GINSBERG. (3) ____.

(2) RICHARD MCKENNA. (4) ____.

Date of Interview: 4/7/2015.

Type: ☒ Telephonic ☐ Video Conference
 ☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
 If Yes, brief description: _____.

Issues Discussed ☐ 101 ☐ 112 ☐ 102 ☐ 103 ☒ Others
 (For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 11 AND 26.

Identification of prior art discussed: SCHMIDT AND MAGID.

Substance of Interview
 (For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The Examiner received Applicant's permission to amend the claims via Examiner's Amendment to put the Application in condition for allowance.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/OREN GINSBERG/ Primary Examiner, Art Unit 3764	
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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: April 7, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/656,942
		Filing Date	03/26/2015
		First Named Inventor	Douglas G. Bayerlein
		Art Unit	3764
		Examiner Name	GINSBERG, OREN ISAAC
Sheet	1	of	1
		Attorney Docket Number	097208-0204

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² <i>(if known)</i>			
	A1	2014/0011642	01-09-2014	ASTILEAN, ALEX	
	A2	8,690,738	04-08-2014	ASTILEAN, ALEX	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A3	Photographs of public display of Speedfit Speedboard by Woodway presented at IHRSA Tradeshow on March 17, 2009, 8 pages	
	A4	ASTILEAN, ALEX, YouTube Video entitled "SpeedFit – Speedboard – First Curve Prototype" asserted to be uploaded on January 14, 2009, retrieved from the internet at: https://www.youtube.com/watch?v=dO9h-F-JVCU on April 6, 2015, 49 pages of screenshots.	

Examiner Signature	/Oren Ginsberg/	Date Considered	04/08/2015
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CONFIRMATION NO. 5409

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
14/656,942	03/13/2015	482	3764	097208-0204		
APPLICANTS Woodway USA, Inc., Waukesha, WI, Assignee (with 37 CFR 1.172 Interest); INVENTORS Douglas G. Bayerlein, Oconomowoc, WI; Vance E. Emons, Hartland, WI; Nicholas A. Oblamski, Waukesha, WI; Scott D. Hoerig, Brookfield, WI; Matthew J. Zank, Milwaukee, WI; Robert L. Zimpel, Menomonee Falls, WI; Joel W. Richards, Wauwatosa, WI; ** CONTINUING DATA ***** This application is a CON of 14/243,716 04/02/2014 PAT 8986169 which is a CON of 13/235,065 09/16/2011 which is a CIP of PCT/US10/27543 03/16/2010 which claims benefit of 61/161,027 03/17/2009 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 03/24/2015						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and /OREN ISAAC GINSBERG/ Acknowledged Examiner's Signature		<input type="checkbox"/> Met after Allowance Initials	STATE OR COUNTRY WI	SHEETS DRAWINGS 20	TOTAL CLAIMS 26	INDEPENDENT CLAIMS 4
ADDRESS FOLEY & LARDNER LLP 3000 K STREET N.W. SUITE 600 WASHINGTON, DC 20007-5109 UNITED STATES						
TITLE MANUAL TREADMILL AND METHODS OF OPERATING THE SAME						
FILING FEE RECEIVED 1180	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	14	((Douglas) near2 (Bayerlein)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S2	8	((Vance) near2 (Emons)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S3	12	((Nicholas) near2 (Oblamski)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S4	5	((Scott) near2 (Hoerig)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S5	4	((Matthew) near2 (Zank)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S6	8	((Robert) near2 (Zimpel)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
S7	92	((Joel) near2 (Richards)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:15
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S12	21	("1211765" "20120010048" "20120010053" "20120157267" "3489408" "3637206" "3642279" "3669238" "4614337" "5470293" "5577598" "5709632" "6053848" "6146315" "6348025").PN. OR ("8308619" "8343016").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:51
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S14	238	a63b22/0285.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/04/07 09:58
S15	875	a63b69/0028,0035.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/04/07 10:01
S16	101389	a63b\$/\$.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2015/04/07 10:09
S17	1249	S16 and treadmill and bearing	US- PGPUB; USPAT; USOCR	OR	ON	2015/04/07 10:09
S18	132	("5607376" "6217487" "6217487" "5447479" "5558605" "6042514" "4502679" "4844449" "4974831" "4984810" "5184988" "5368532" "5382207" "5441468" "5484362" "5599259" "5752897" "5857942" "5899834" "5976061" "6004244" "6013012" "6033347" "6053849" "6095951" "6132340" "6165107" "6171216" "6179754" "6213919" "6213919" "6350218" "6390955" "6394933" "6409633" "6436008" "6786853" "6878100" "6923746" "7455620" "7955225" "7955225" "8864627" "8986169" "20040106503" "20040242377" "20040259690" "20090036272" "20110152037" "20120010053").pn.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/07 13:15

EAST Search History (I nterference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S19	1	(treadmill and belt and roller and safety and bearing).clm.	USPAT; UPAD	OR	ON	2015/04/07 13:40

C:\Users\oginsberg\Documents\EAST\Workspaces\Applications\14\14656942\14656942.wsp

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>		Application Number	Not yet assigned
		Filing Date	Herewith
		First Named Inventor	Douglas G. Bayerlein
		Art Unit	Not yet assigned
		Examiner Name	Not yet assigned
Sheet	1	of	5
		Attorney Docket Number	097208-0204

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Examiner Signature		Date Considered	
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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 (use as many sheets as necessary)				Complete if Known	
				Application Number	Not yet assigned
				Filing Date	Herewith
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	Not yet assigned
				Examiner Name	Not yet assigned
Sheet	2	of	5	Attorney Docket Number	097208-0204

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Examiner Initials*	Cite No. ¹	U.S. Patent Application Document Serial Number-Kind Code ² (if known)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

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Examiner Signature		Date Considered	
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Sheet	3	of	5
		Attorney Docket Number	097208-0204

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>		Application Number	Not yet assigned
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Sheet	4	of	5
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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
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Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: March 13, 2015 <i>(use as many sheets as necessary)</i>		Application Number	Not yet assigned
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		Art Unit	Not yet assigned
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Sheet	5	of	5
		Attorney Docket Number	097208-0204

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Examiner Signature	/Oren Ginsberg/	Date Considered	04/07/2015
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Issue Classification 	Application/Control No. 14656942	Applicant(s)/Patent Under Reexamination BAYERLEIN ET AL.	
	Examiner OREN GINSBERG	Art Unit 3764	

CPC						
Symbol					Type	Version
A63B		22		02	F	2013-01-01
A63B		22		0285	I	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
 				
 				

NONE		Total Claims Allowed:	
		25	
(Assistant Examiner)	(Date)		
/OREN GINSBERG/ Primary Examiner.Art Unit 3764	04/07/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5

Search Notes 	Application/Control No. 14656942	Applicant(s)/Patent Under Reexamination BAYERLEIN ET AL.
	Examiner OREN GINSBERG	Art Unit 3764

CPC- SEARCHED		
Symbol	Date	Examiner
A63B: 22/02,0285; 2022/0207,0214,0221,0228; 69/0028,0035	4/7/15	OG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
INVENTOR SEARCHED IN PALM AND EAST	4/7/15	OG
PLUS SEARCH	4/7/15	OG

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	INTERFERENCE SEARCHED PGPUBS	4/7/15	OG

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To: ipdocketing@foley.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

Apr 16, 2015 05:37:16 AM

Dear PAIR Customer:

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 26371 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

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Application	Document	Mailroom Date	Attorney Docket No.
14656942	NOA	04/16/2015	097208-0204
	INTV.SUM.EX	04/16/2015	097208-0204
	1449	04/16/2015	097208-0204
	1449	04/16/2015	097208-0204

To view your correspondence online or update your email addresses, please visit us anytime at <https://portal.uspto.gov/secure/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

26371 7590 04/16/2015
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,942	03/13/2015	Douglas G. Bayerlein	097208-0204	5409

TITLE OF INVENTION: MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	07/16/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
GINSBERG, OREN ISAAC	3764	482-054000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 **Foley & Lardner LLP**

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Woodway USA, Inc.

Waukesha, WI

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☒ Payment by credit card. ~~Form PTO-2038 is attached.~~ **Via EFS**
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number **19-0741** (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Alexander J. Neuworth/

Date 4-20-2015

Typed or printed name Alexander J. Neuworth

Registration No. 72,021

Electronic Patent Application Fee Transmittal

Application Number:	14656942			
Filing Date:	13-Mar-2015			
Title of Invention:	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME			
First Named Inventor/Applicant Name:	Douglas G. Bayerlein			
Filer:	Alexander J. Neuworth/Michele Mathes			
Attorney Docket Number:	097208-0204			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt

EFS ID:	22113836
Application Number:	14656942
International Application Number:	
Confirmation Number:	5409
Title of Invention:	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Alexander J. Neuworth/Michele Mathes
Filer Authorized By:	Alexander J. Neuworth
Attorney Docket Number:	097208-0204
Receipt Date:	20-APR-2015
Filing Date:	13-MAR-2015
Time Stamp:	18:03:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 480
RAM confirmation Number	5603
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	097208-0204_IF_Transmittal.pdf	98987	no	2
			09e28b2c427de008803ea08165609d4ff7b4dec9		
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	097208-0204_PTOL-85B.pdf	189915	no	1
			1b30faf18a8fbf2c06293d38e75071890cf49627		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30799	no	2
			f1ffd0dda0510f1c66914b006949f123ad090973		
Warnings:					
Information:					
Total Files Size (in bytes):			319701		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name: Douglas G. Bayerlein
Title: MANUAL TREADMILL AND
METHODS OF OPERATING
THE SAME
Appl. No.: 14/656942
Filing Date: 3/13/2015
Examiner: GINSBERG, Oren Isaac
Art Unit: 3764
Confirmation Number: 5409

ISSUE FEE TRANSMITTAL

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Enclosed herewith please find Issue Fee Transmittal Form PTOL-85(B).

Fees in the amount of \$480.00 for payment of the Issue Fee are being paid by credit card via EFS-Web.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

While the Applicants agree that the allowed claims recite a combination of subject matter that is patentable over the cited references, the Applicants do not necessarily agree with or acquiesce in the reasoning of the Examiner. Moreover, the Applicants note that various other subject matter and/or combinations of subject matter may be patentable for other reasons than those given by the Examiner. The Applicants expressly reserve the right to set forth additional and/or alternative reasons for patentability and/or allowance in connection with the present Application or any future proceeding.

REMARKS

These comments on Statement of Reasons for Allowance under 37 C.F.R. § 1.104 are intended to be responsive to the Notice of Allowance dated April 16, 2015.

Respectfully submitted,

Date 4-20-2015

By /Alexander J. Neuworth/

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (414) 319-7029
Facsimile: (414) 297-4900

Alexander J. Neuworth
Attorney for Applicant
Registration No. 72,021



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,942	05/26/2015	9039580	097208-0204	5409

26371 7590 05/06/2015
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Douglas G. Bayerlein, Oconomowoc, WI;
Woodway USA, Inc., Waukesha, WI, Assignee (with 37 CFR 1.172 Interest);
Vance E. Emons, Hartland, WI;
Nicholas A. Oblamski, Waukesha, WI;
Scott D. Hoerig, Brookfield, WI;
Matthew J. Zank, Milwaukee, WI;
Robert L. Zimpel, Menomonee Falls, WI;
Joel W. Richards, Wauwatosa, WI;

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To: ipdocketing@foley.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

May 07, 2015 05:44:20 AM

Dear PAIR Customer:

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
14656942	ISSUE.NTF	05/06/2015	097208-0204

To view your correspondence online or update your email addresses, please visit us anytime at <https://sportal.uspto.gov/secure/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Wisconsin on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 15-CV-956	DATE FILED 8/11/2015	U.S. DISTRICT COURT Eastern District of Wisconsin
PLAINTIFF Woodway USA Inc		DEFENDANT Samara Fitness LLC and Chapco Inc
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,986,169	3/24/2015	Woodway USA Inc
2 9,039,580	5/26/2015	Woodway USA Inc
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Jon W. Sanfilippo	(BY) DEPUTY CLERK s/Becky Ray	DATE 8/11/2015
----------------------------	----------------------------------	-------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy