CV 03-1092 #1

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

VECTRA FITNESS, INC ,
a Washington corporation,

Plaintiff,

v

INTERNETFITNESS, INC ,
d/b/a/ SMOOTHFITNESS
d/b/a/ HOMEGYMBYNET
a Delaware corporation,

Defendant

Civil Action No. 03-1092

COMPLAINT FOR PATENT INFRINGEMENT, TRADEMARK INFRINGEMENT, TRADEMARK DILUTION, AND UNFAIR COMPETITION

JURY TRIAL DEMANDED

Plaintiff, Vectra Fitness, Inc ("Vectra"), for its complaint against defendant InternetFitness, Inc ("InternetFitness"), alleges as follows

I. NATURE OF ACTION

1 This action is based on the Patent Laws of the United States, 35 U S C § 100 *et seq* , the U S Lanham Act, 15 U S C § 1051 *et seq* , and, the Washington Consumer Protection Act, RCW 19 86 010 *et seq*

2 This action arises out of defendant's use in commerce of the mark Vectra on its website located at www.homegymbynet com

ORIGINAL

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903 8800
(206) 9038820

3 This action also arises out of defendant's use in commerce of a false and misleading comparison of Vectra's products with those of its competitors

4 This action also arises out of defendant's making, using, selling, and/or offering for sale exercise equipment that infringes valid patents owned by plaintiff

II. THE PARTIES

5 Vectra is a Washington corporation with its principal place of business at 7901 S 190th Street, Kent, Washington 98032

6 On information and belief, InternetFitness is a Delaware corporation, with a place of business at 717 Fellowship Road, Suites C,D, & E, Mt. Laurel, New Jersey 08054

III. JURISDICTION AND VENUE

7 This action arises under the Patent Act, 35 U.S C § 1 *et seq* , the Lanham Act, 15 U S C § 1051 *et seq* , and, the Washington Consumer Protection Act, RCW 19 86 010 *et seq* The Court has original subject matter jurisdiction over the federal trademark claims under 28 U S C §§ 1331 and 1338(a) The court has supplemental jurisdiction over the state law claims under 28 U S C. § 1367(a)

8 The Court has personal jurisdiction over the parties, and venue in this Judicial District is proper under 28 U S C §§ 1391(a), (b), and (c), and/or 1400(b)

IV. PLAINTIFF AND ITS RIGHTS

9 Vectra has developed several innovative types of exercise equipment The United States Patent and Trademark Office ("PTO") has recognized Vectra's innovation by awarding two United States patents covering such equipment

10 On March 29, 1994, United States Reissue Patent No Re 34,572 (hereinafter "the '572 patent"), entitled *Exercise Machine With Multiple Exercise Stations,* was lawfully issued to Vectra The '572 patent is a reissue of United States Patent No 4,809,972 (hereinafter "the '972

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903-8800
(206) 9038820

patent"), issued March 7, 1989 Vectra is the assignee and sole owner of the '972 patent and of the '572 patent A copy of the '572 patent is attached as Exhibit A.

11 On July 14, 1998, United States Patent No 5,779,601 (hereinafter "the '601 patent"), entitled *Compact Multi-Station Exercise Machine,* was lawfully issued to Vectra. Vectra is the assignee and sole owner of the '601 patent, a copy of which is attached as Exhibit B

12 Vectra is in the business of designing, manufacturing, marketing and selling various exercise products, including exercise products covered by the '572 and '601 patents

13 On April 18, 1989, the United States Patent and Trade Office ("PTO") issued United States Trademark Registration No 1,535,505 (hereinafter "the '505 registration") for the mark VECTRA for Multi-Station Exercise Machines in International Class 028 Vectra is the sole owner of the mark VECTRA and the '505 registration, a copy of which is attached as Exhibit C

14 Vectra is in the business of designing, manufacturing, marketing and selling various exercise products and conducts such business under the mark VECTRA

15 Since at least 1987, Vectra has adopted and used the mark VECTRA continuously in interstate commerce in the United States as a trademark in connection with its business

16 Since its initial use of this mark, Vectra has conducted substantial business using the VECTRA mark

17 As a result of Vectra's extensive use in advertising and promoting its mark, the VECTRA mark is well known in the United States and is recognized as identifying Vectra exercise equipment and related goods and services. This mark, and the associated goodwill, are valuable assets of Vectra

18 As between Vectra and InternetFitness, Vectra was the first entity to use the trademark VECTRA in commerce

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903-8800
(206) 9038820

V. DEFENDANT AND ITS UNLAWFUL ACTIVITIES

19 On information and belief, InternetFitness has been, and is, infringing, both literally and under the doctrine of equivalents, one or more claims of the '572 and '601 patents by manufacturing, using, selling, offering to sell, causing to be manufactured, used, sold and/or offered for sale, exercise products covered by the '572 and '601 patents in the United States and in this judicial district

20 On information and belief, InternetFitness has actual and constructive notice of Vectra's rights respecting the'572 and '601 patents.

21. On information and belief, InternetFitness uses the mark VECTRA on its website.

22 On information and belief, InternetFitness purports to sell and offer for sale Vectra products through its website.

23. On information and belief, InternetFitness provides a false and misleading comparison of Vectra's products

24 On information and belief, InternetFitness had actual knowledge that Vectra had the exclusive right to use the VECTRA trademark in commerce

25 InternetFitness has been, and is, infringing the VECTRA mark by using it on its website to sell fitness products in the United States and in this judicial district.

26 InternetFitness has been, and is, diluting the VECTRA mark by using it on its website to sell fitness products in the United States and in this judicial district

27 InternetFitness has been, and is, engaging in unfair competition by providing a false and misleading comparison of Vectra's products

VI. FIRST CLAIM – PATENT INFRINGEMENT

28 Vectra repeats and realleges each of the allegations contained in the paragraphs above as if fully set forth herein

29 On information and belief, defendant has been, and is, infringing directly, by

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE WASHINGTON 98101
(206) 903-8800
(206) 9038820

inducement, and/or under the doctrine of contributory infringement and/or the doctrine of equivalents, one or more claims of the '572 patent by manufacturing, using, selling, and/or offering for sale exercise equipment, and/or related products in the United States and in this Judicial District

30. On information and belief, defendant has been, and is, infringing directly, by inducement, and/or under the doctrine of contributory infringement and/or the doctrine of equivalents, one or more claims of the '601 patent by manufacturing, using, selling, and/or offering for sale exercise equipment, and/or related products in the United States and in this Judicial District

31 By infringing directly, by inducement and/or under the doctrine of contributory infringement and/or under the doctrine of equivalents one or more claims of the '572 and '601 patents, defendant has unfairly reaped a substantial commercial advantage and savings in research and development time and cost, all to Vectra's detriment

32 Defendant's activities with respect to its exercise equipment, and related products constitute willful infringement of one or more claims of each of the '572 and '601 patents

33 Vectra has been, and will continue to be, damaged by such direct, contributory, and induced infringement in an amount to be proven at trial and in a manner and amount that cannot be fully measured or compensated in economic terms and for which there is no adequate remedy at law The actions of defendant have damaged, and will continue to damage, Vectra's business, market, reputation, and goodwill Such irreparable damage will continue unless the acts of defendant are enjoined during the pendency of this action and thereafter. Vectra is, therefore, entitled to the remedies provided by 35 U S C §§ 283-285

VII. SECOND CLAIM – FEDERAL TRADEMARK INFRINGEMENT

34 Vectra repeats and realleges each of the allegations contained in the paragraphs above as if fully set forth herein

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE WASHINGTON 98101
(206) 903-8800
(206) 9038820

35 InternetFitness's unauthorized use of the VECTRA mark in connection with exercise equipment sold and offered for sale on its website constitutes a false designation of origin, false or misleading description, and/or false or misleading representation Such unauthorized use causes, and is likely to cause, confusion, mistake, or deception of others, as to the affiliation, connection, or association of InternetFitness with Vectra, and also causes, and is likely to cause, confusion, mistake, or deception as to the origin, sponsorship, or approval of the services and commercial activities of InternetFitness

36 Such false designation, description, and/or representation constitutes unfair competition and is an infringement of Vectra's rights in its VECTRA mark in violation of Section 43(a) of the Lanham Act, 15 U S.C § 1125(a)

37 InternetFitness knew, or should have known, of Vectra's rights, and InternetFitness's false description, false representation, and false designation of origin are knowing, willful, and deliberate, making this an exceptional case within the meaning of 15 U S C § 1117 Annexed hereto as Exhibit D is a March 12, 1999 letter from Joe Sanchez, General Counsel for Vectra, to Joe Alter of Club Source, Inc complaining about Club Source's unfair trade practices. Annexed hereto as Exhibit E is a May 3, 1999 letter from Joe Sanchez to Mr Alter of Club Source, Inc. asking Mr Alter to "remove all mention of Vectra and its products from [Club Source's] website" On information and belief, defendant does business at times as "Club Source" Defendant refused to comply with Vectra's requests

38 Vectra has been, and will continue to be, damaged by such false description, false representation, and false designation of origin in a manner and amount that cannot be fully measured or compensated in economic terms InternetFitness's actions have damaged, and will continue to damage, Vectra's market, reputation, and goodwill, and may discourage current and potential customers from dealing with Vectra Such irreparable harm will continue unless

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903 8800
(206) 9038820

InternetFitness's acts are restrained and/or enjoined during the pendency of this action and thereafter

VIII. THIRD CLAIM – FEDERAL TRADEMARK DILUTION

39 Vectra repeats and realleges each of the allegations contained in the paragraphs above as if fully set forth herein.

40 The VECTRA trademark as used by Vectra in connection with its exercise equipment and related goods and services has become famous in Washington and in interstate commerce through substantially exclusive and continuous use The duration of use and the extent of the advertising of the VECTRA mark have been significant and substantial

41 InternetFitness's unauthorized use of the VECTRA mark constitutes use in commerce and dilutes the distinctive quality of Vectra's famous VECTRA mark InternetFitness willfully intended to trade on Vectra's reputation and to dilute Vectra's aforementioned mark in violation of Section 43(c) of the Lanham Act, 15 U S C § 1125(c) and RCW 19 77 160

42 Vectra has been, and will continue to be, damaged by InternetFitness's dilution of Vectra's trademark and trademark rights in a manner and amount that cannot be fully measured or compensated in economic terms. InternetFitness's actions have damaged, and will continue to damage, Vectra's market, reputation, and goodwill, and may discourage current and potential customers from dealing with Vectra. Such irreparable harm will continue unless InternetFitness's acts are restrained and/or enjoined during the pendency of this action and thereafter

IX. FOURTH CLAIM – STATE UNFAIR COMPETITION

43. Vectra repeats and realleges each of the allegations contained in the paragraphs above as if fully set forth herein

44 InternetFitness's unauthorized use of the VECTRA mark in connection with providing exercise equipment and related goods and services causes, and is likely to cause,

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE SUITE 3400
SEATTLE WASHINGTON 98101
(206) 903 8800
(206) 9038820

confusion and mistake InternetFitness's use of the designation VECTRA deceives, and is likely to deceive, others into believing that InternetFitness's exercise equipment is sponsored by, approved by, or affiliated with Vectra

45 InternetFitness's unauthorized use of the VECTRA mark in connection with providing exercise equipment and related goods and services causes, and is likely to cause, dilution of the distinctiveness of the VECTRA mark

46 InternetFitness's false and misleading comparison of Vectra's products to those of its competitors is an act of unfair competition

47 InternetFitness's acts, as alleged hereinabove, constitute infringement and dilution of Vectra's VECTRA trademark

48 InternetFitness knew, or should have known, of Vectra's rights in and to the VECTRA mark InternetFitness's unauthorized use of the VECTRA mark has been knowing, willful, and deliberate

49 InternetFitness's trademark infringement, trademark dilution, and use of a false and misleading product comparison constitute unfair competition, which will be injurious to the public interest, in violation of the Washington State Unfair Business Practices and Consumer Protection Act, RCW 19.86 010 *et seq*

50 Vectra has been, and will continue to be, damaged by InternetFitness's actions in a manner and amount that cannot be fully measured or compensated in economic terms InternetFitness's actions have damaged, and will continue to damage, Vectra's market, reputation, and goodwill, and may discourage current and potential customers from dealing with Vectra Such irreparable harm will continue unless InternetFitness's acts are restrained and/or enjoined during the pendency of this action and thereafter.

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE, SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903-8800
(206) 9038820

X. FIFTH CLAIM – COMMON LAW UNFAIR COMPETITION

51 Vectra repeats and realleges each of the allegations contained in the paragraphs above as is fully set forth herein.

52 Vectra has been using the VECTRA trade name and mark in Washington and in interstate commerce on, or in close association with, exercise equipment and providing related goods and services since prior to 1989

53 InternetFitness's unauthorized use of the VECTRA mark constitutes an attempt to palm off its goods and services as those of Vectra and to compete unfairly with Vectra This conduct constitutes common law unfair competition

54 InternetFitness's false and misleading product comparison constitutes an attempt to compete unfairly with Vectra This conduct constitutes common law unfair competition

55. Vectra has been, and will continue to be, damaged as a result of InternetFitness's unfair competition in a manner and amount that cannot be fully measured or compensated in economic terms. InternetFitness's actions have damaged, and will continue to damage, Vectra's market, reputation, and goodwill, and may discourage current and potential customers from dealing with Vectra Such irreparable harm will continue unless InternetFitness's acts are restrained and/or enjoined during the pendency of this action and thereafter

XI. REQUEST FOR RELIEF

Vectra requests the following relief

1 Defendant and its officers, directors, agents, servants, employees, attorneys, confederates, and all persons acting for, with, by, through, or under them or any of them, be permanently enjoined

(a) From infringing any claim of the '572 patent, either directly or by contributing to the infringement,

(b) From inducing others to infringe any claim of the '572 patent,

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE SUITE 3400
SEATTLE WASHINGTON 98101
(206) 903 8800
(206) 9038820

(c) From infringing any claim of the '601 patent, either directly or by contributing to the infringement;

(d) From inducing others to infringe any claim of the '601 patent,

(e) From making any false and misleading comparison of Vectra and Vectra products with any of its competitors or their products, and from making any false and misleading statements about Vectra and Vectra products, and,

(f) From using in any way the trademark VECTRA, or other trademark or designation confusingly similar to, or likely to cause dilution of, plaintiff's VECTRA mark, and from representing or holding themselves out as affiliated with Vectra, or from representing that any of its goods or services are sponsored, approved by, or affiliated with Vectra, or from otherwise unfairly competing with Vectra

2 Defendant be required to deliver up to the Court the following items in defendant's possession, custody or control:

(a) Any and all exercise products that infringe any claim of the '572 and/or '601 patents and parts thereof and all machinery, tooling, and dies and any other equipment used in the manufacture, finishing or refinement of any of the above items or products,

(b) Any and all labels, signs, prints, emblems, devices, literature, advertising, and any other marketing materials in its possession containing false and misleading comparisons involving Vectra products or false and misleading statements about Vectra and Vectra products, and

(c) Any and all labels, signs, prints, emblems, devices, literature, advertising, and any other marketing materials in its possession bearing the trademark

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE SUITE 3400
SEATTLE WASHINGTON 98101
(206) 903-8800
(206) 9038820

VECTRA or any other trademark or designation confusingly similar to plaintiff's VECTRA trademark, pursuant to 15 U S C § 1118,

3 Defendant be required to prepare and deliver to the plaintiff a complete list of entities from whom defendant purchased, and to whom it distributed or sold, products that infringe any claim of the '572 or '601 patents or that bear the mark VECTRA

4 Defendant, within thirty days after service of judgment, with notice of entry thereof upon it, be required to file with the Court and serve upon Vectra's counsel a written report under oath setting forth in detail the manner in which defendant has complied with paragraphs 1 through 3 hereof

5 Defendant account for and pay over to Vectra the damages sustained by Vectra by reason of defendant's patent infringement, trademark infringement, dilution, and unfair competition

6 The Court award pre-judgment interest to compensate Vectra for the damages it has sustained,

7 Defendant account for and pay over to Vectra such damages as Vectra has sustained and adequate to compensate for the patent infringement, including Vectra's lost profits, but in no event less than a reasonable royalty, as provided by 35 U S C § 284

8 Defendant's infringement of Vectra's patent be found willful and that treble damages, together with interest and costs, be awarded under 35 U S C § 284 and R C W 19 86 010 et seq.

9 The Court order InternetFitness to pay to Vectra the costs of this action, including reasonable attorneys' fees, costs, and interest, pursuant to 35 U S C § 285, 15 U S C § 1117, RCW 19 86 010 *et seq* or as otherwise permitted by law

10. Vectra have such other and further relief as the Court may deem just and proper

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903-8800
(206) 9038820

DATED this ___ day of May, 2003

Respectfully submitted,

DORSEY & WHITNEY LLP

Paul T Meiklejohn WSBA No 17477
Christopher J Clugston WSBA No.32045
U S. Bank Centre
1420 Fifth Avenue, Suite 3400
Seattle, WA 98101
Telephone (206) 903-8800
Facsimile (206) 903-8820

Jose L Sanchez WSBA No 27187
Vectra Fitness, Inc
7901 S 190th Street
Kent, WA 98032
Telephone (425) 291-9550
Facsimile (425) 291-9560

Attorneys for Plaintiff

DORSEY & WHITNEY LLP
U S BANK CENTER
1420 FIFTH AVENUE SUITE 3400
SEATTLE, WASHINGTON 98101
(206) 903-8800
(206) 9038820

EXHIBIT A

US00RE34572E

United States Patent [19]

Johnson et al.

[11] E Patent Number: Re. 34,572

[45] Reissued Date of Patent: Mar. 29, 1994

[54] **EXERCISE MACHINE WITH MULTIPLE EXERCISE STATIONS**

[75] Inventors: **Jeffrey B. Johnson; Arthur B. Ish, III, both of Redmond, Wash**

[73] Assignee: **Vectra Fitness, Inc., Redmond, Wash**

[21] Appl No **697,949**

[22] Filed **May 9, 1991**

Related U.S. Patent Documents

Reissue of:

[64] Patent No **4,809,972**
Issued **Mar. 7, 1989**
Appl No **97,549**
Filed **Sep. 16, 1987**

[51] Int. Cl.[5] A63B 21/06

[52] U.S. Cl. 482/99; 482/100, 482/138

[58] Field of Search 272/93, 117, 118, 123, 272/130, 134, 136, 142, 144, 482/93, 94, 97, 98, 99, 100, 101, 102, 103, 104, 106, 133, 134, 135, 136, 137, 138, 142

[56] **References Cited**

U.S PATENT DOCUMENTS

723,625	3/1903	Thornley	272/118
931,699	8/1909	Medart	272/118
2,648,540	8/1953	Hunter	272/118
2,977,120	3/1961	Morris	272/118
3,640,528	2/1972	Proctor	272/118
3,815,903	6/1974	Blomquist	272/118
4,199,139	4/1980	Mahnke et al	272/118
4,372,553	2/1983	Hatfield	272/134 X
4,390,179	6/1983	Szkalak	272/118
4,456,245	6/1984	Baldwin	272/134 X
4,505,475	3/1985	Olschansky et al	272/118
4,509,746	4/1985	Mask	272/117 X
4,634,127	1/1987	Rockwell	272/134
4,643,420	2/1987	Riley et al	272/136 X
4,697,809	10/1987	Rockwell	272/118
4,744,559	5/1988	Mahnke et al	272/118

FOREIGN PATENT DOCUMENTS

3326426	1/1985	Fed Rep. of Germany	272/118
7609655	3/1978	Netherlands	272/117
2158362	11/1985	United Kingdom	272/118

Primary Examiner—Robert Bahr
Attorney, Agent, or Firm—Seed and Berry

[57] **ABSTRACT**

An exercise machine has multiple stations at each of which two or more exercises are performed in opposition to a selected amount of weight in a weight stack. A cable and pulley system connects the exercise apparatus at the exercise stations with the weight stack in such a manner that only one pull cable in the system is connected to the weight stack

22 Claims, 4 Drawing Sheets

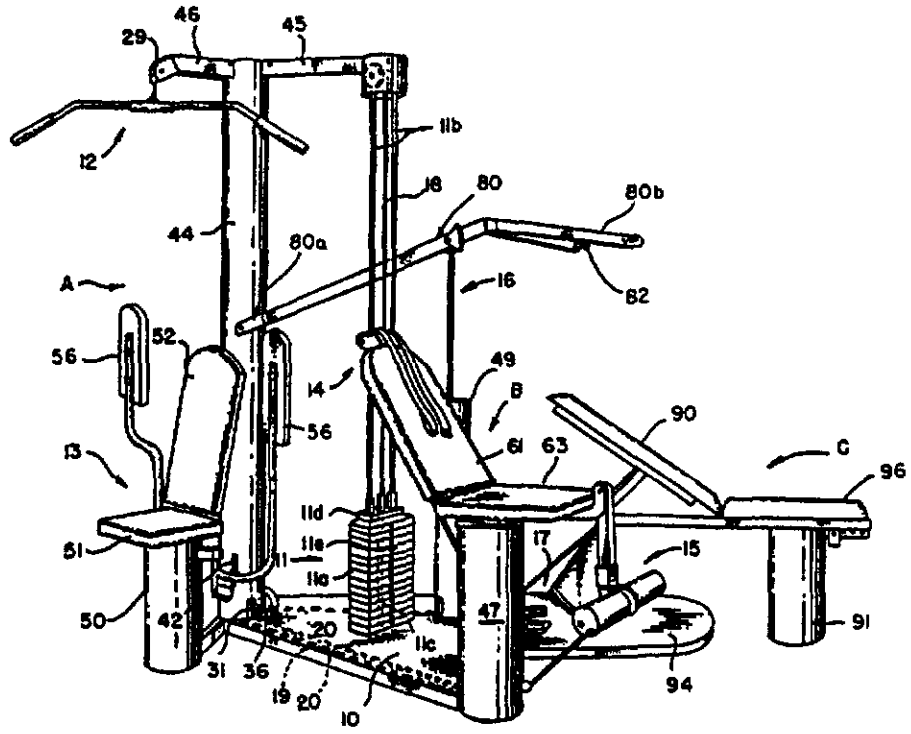
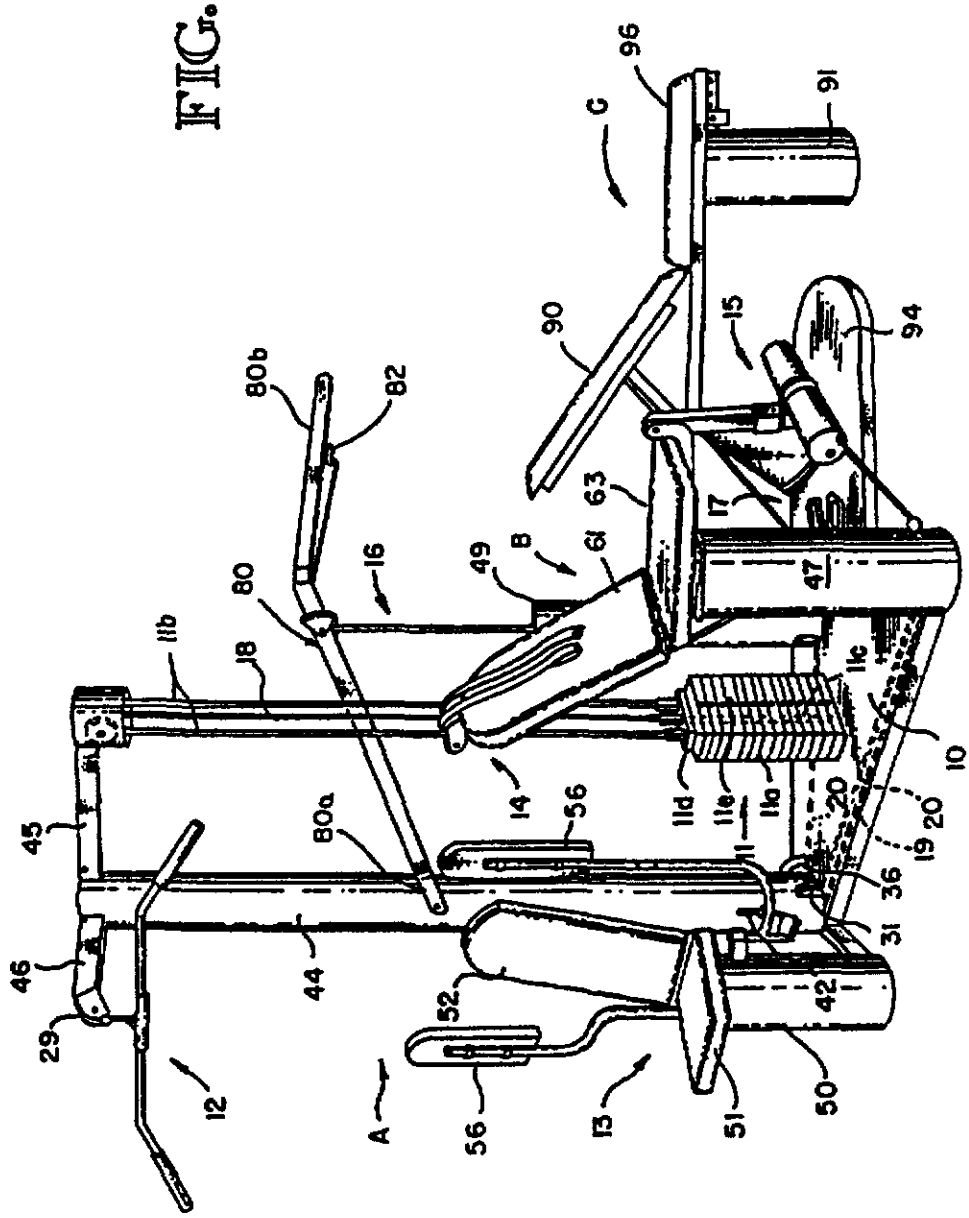


FIG. 1


96
91
C
90
15
94
80b
82
63
17
16
49
B
61
80
47
11b
18
11c
10
14
56
11d
11e
11a
20
20
19
80a
11
36
45
31
46
44
52
42
29
12
A
56
13
51
50

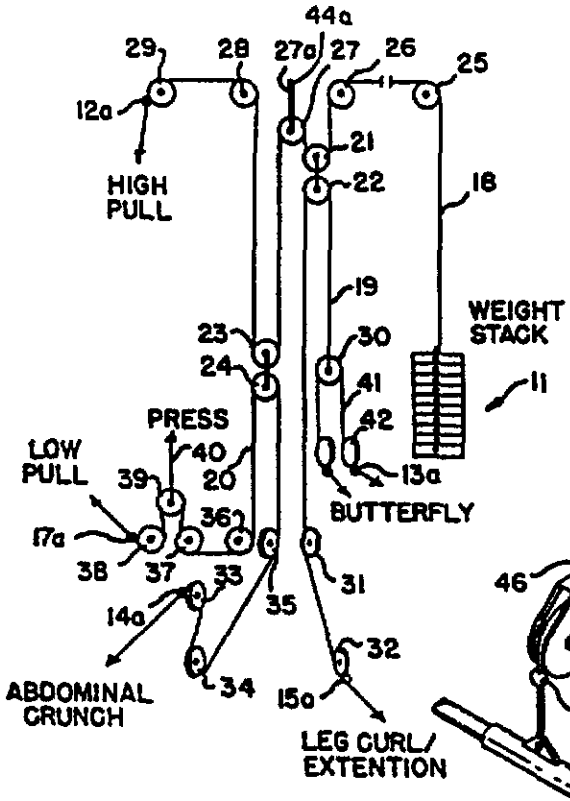

44a
29
28
27a
27
26
25
12a
HIGH PULL
21
22
18
19
WEIGHT STACK
23
30
24
41
11
PRESS
42
LOW PULL
40
20
39
13a
BUTTERFLY
36
17a
38
37
33
31
35
14a
32
ABDOMINAL CRUNCH
34
15a
LEG CURL/ EXTENTION

FIG. 2

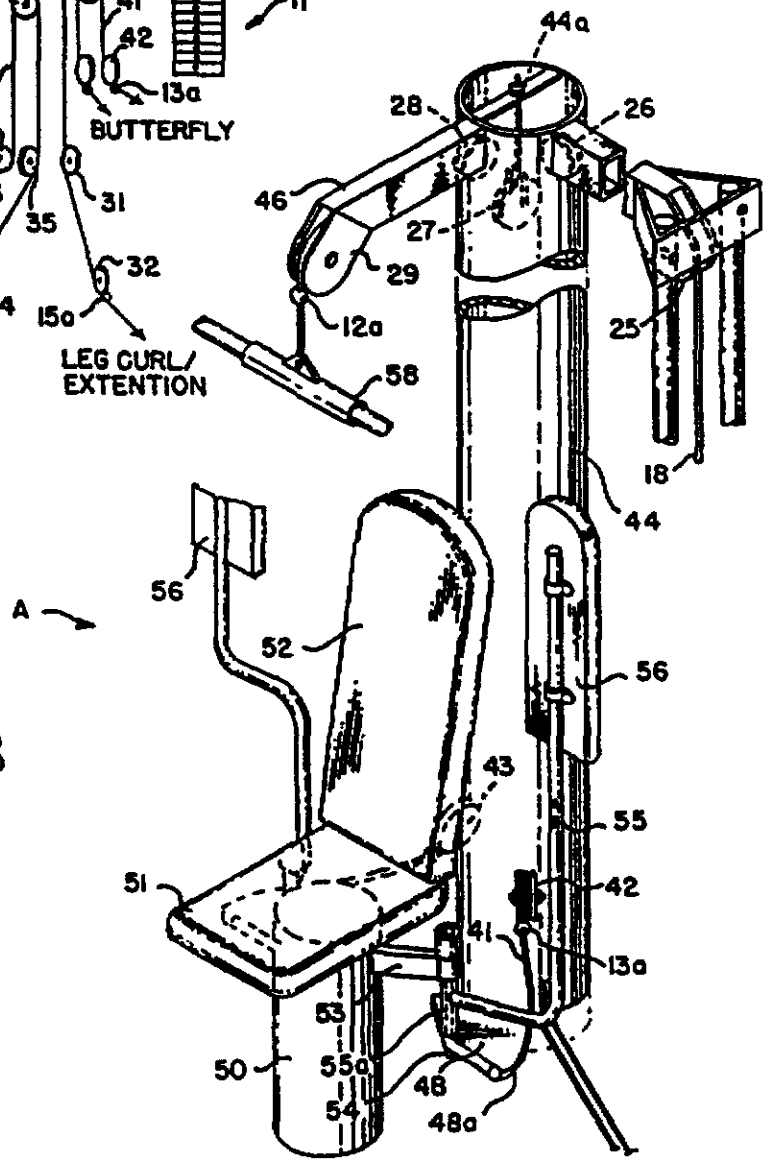

44a
28
26
46
27
29
12a
25
58
18
44
A
56
52
56
43
55
51
42
41
13a
53
50
55a
48
54
48a

FIG. 3

FIG. 4

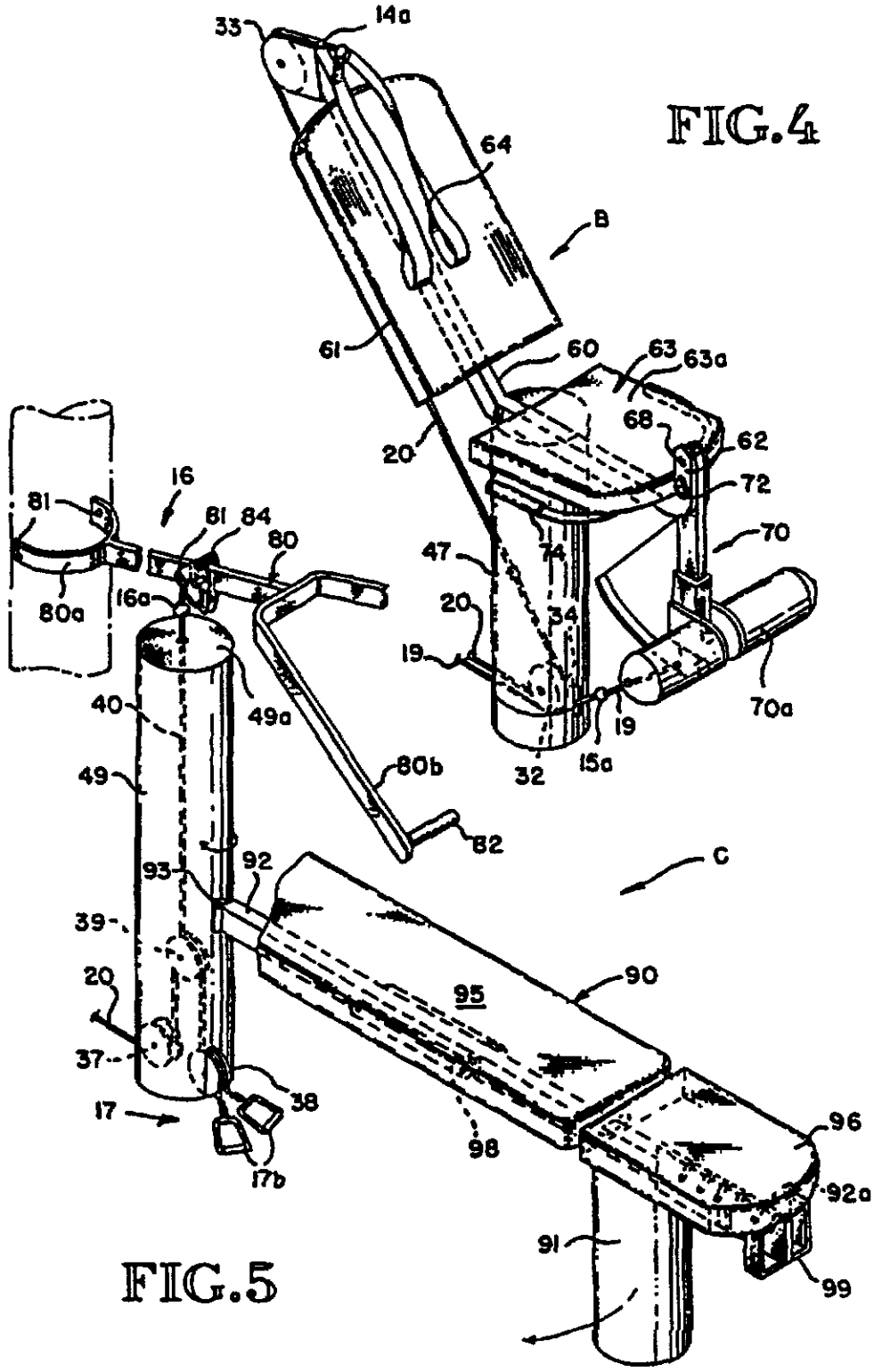

33
14a
64
B
61
60
63
63a
68
62
72
70
20
16
81
81
84
80
80a
16a
47
74
20
34
19
19
70a
40
49a
49
80b
32
15a
82
C
93
92
39
20
95
90
37
38
17
17b
98
96
92a
91
99

FIG. 5

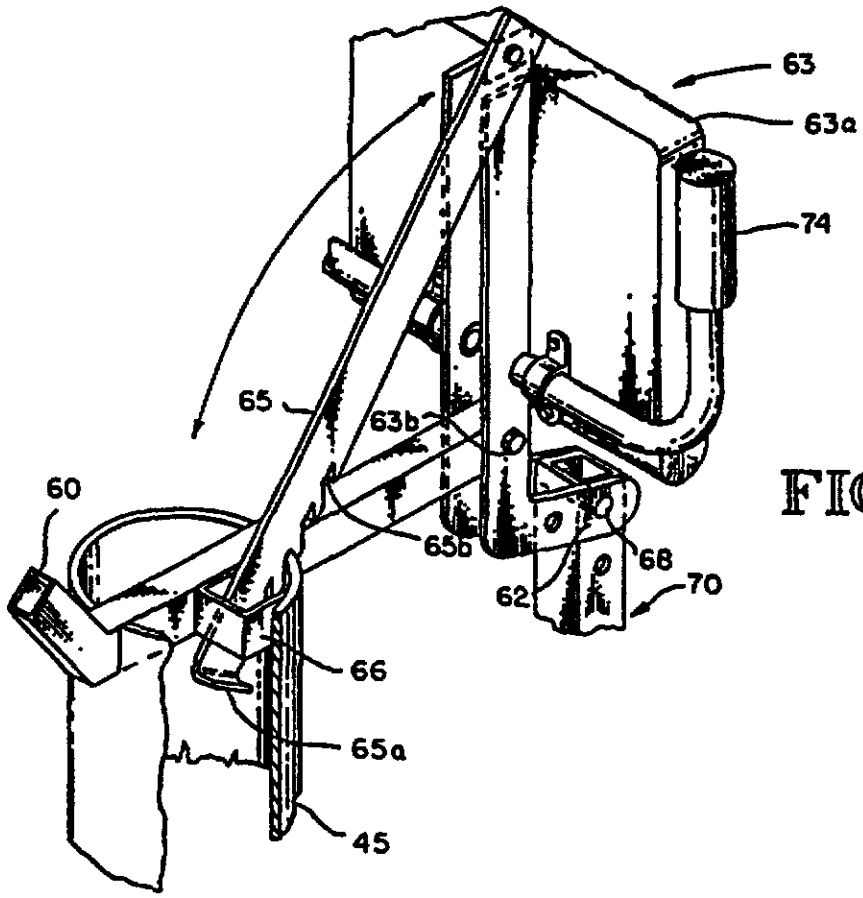


FIG. 6

EXERCISE MACHINE WITH MULTIPLE EXERCISE STATIONS

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

TECHNICAL FIELD

The present invention relates to exercise machines of the type having multiple exercise units which operate in opposition to a single set of weights

BACKGROUND ART

A variety of exercise units have been used in exercise centers for many years each having a set of weights lifted responsive to manual force exerted for muscular development. The exerciser can normally vary the amount of weight resisting the exercising effort As the need for compact exercise equipment has developed for use, for example, in residences, attempts have been made to provide arrangements in which multiple exercise units operate on a single set of weights rather than providing an individual set of weights for each exercise unit. One approach has been an arrangement in which each exercise unit had to be connected to the weight set whenever it was to be used and then disconnected when another of the exercise units was to be used Another approach has been to connect to the single set of weights by a respective cable for each exercise unit in such a manner that each of these cables is only tensioned when the respective exercise unit is used This usually results in an arrangement in which the pull line of the cables when tensioned is off center relative to the center of gravity of the weight set.

With the foregoing shortcomings in mind, the present invention aims to provide a simplified arrangement in which multiple exercise units are continuously connected to a single weight set by a pulley and cable system which only attached to the weight set by a single centered cable

DISCLOSURE OF THE INVENTION

In carrying out the invention, multiple exercise stations are provided, each preferably incorporating more than one exercise unit Each exercise unit is connected to one of multiple cables each of which is tensioned when one of the exercise units is used The cable connected to the weight set has an exercise unit at its opposite end and passes over sets of floating pulleys through which are reeved other cables each having exercise units at its ends. Each cable end has a stop to prevent retracting of the cable so that each cable in the system can be tensioned responsive to the use of one of the exercise units. Additional exercise units can be incorporated by use of single floating pulleys on one of the cables which are directly connected to an exercise unit In some instances, instead of connecting the end of a cable directly to an exercise unit, it can be connected to a pulley which in turn has a secondary cable reeved thereon and connected at its ends to an exercise unit as, for example, a butterfly exercise unit having its wings connected to the ends of the secondary cable

In the preferred embodiment, three exercise stations are arranged in a generally triangular configuration, with the weight set on a base platform therebetween. Each station has two exercise units. A hollow column

houses part of the cable and pulley system and provides a reach arm overlying the weight unit and a second reach arm overlying one of the exercise stations. A first cable connects to the weight set and is guided over the first reach arm into the column where it is reeved through two sets of floating pulleys and then is guided to the outer end of the second reach arm to connect to one of the exercise units Two other cables were reeved in the column through the respective of the two floating pulley sets and are guided out of the column to the exercise stations. A fourth cable passes over a single floating pulley in the column and connects at its ends to one of the exercise units.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of an exercise machine embodying the present invention;

FIG. **2** is a schematic showing the cable and pulley system for the exercise machine,

FIG. **3** is a perspective view of one of the exercise station which incorporates a high pull exercise unit and a butterfly exercise unit;

FIG. **4** is a perspective view of the second exercise station which incorporates an abdominal crunch exercise unit and a leg curl/extension exercise unit, the station having its seat in the lowered position for performing the abdominal crunch exercise;

FIG **5** is a perspective view of the third exercise station which incorporates the press exercise unit and low pull exercise unit, and

FIG **6** is a fragmentary perspective view of the second exercise station showing the seat raised to the position for performing the leg curl/extension exercise.

BEST MODE FOR CARRYING OUT THE INVENTION

Referring to the drawings, the exercise machine of the present invention has three exercise stations A, B and C at the apexes of a generally triangular base frame **10** Each exercise station has two exercise unit individually operative to lift weight in a weight stack unit **11** resting on the base frame For ease of explanation, the exercise units **12–13** at station A are designated the "high pull unit" and the "butterfly unit," the exercise units **14–15** at station B are designated the "abdominal crunch unit" and the "leg curl/extension unit," and the exercise units **16–17** are designated the "press unit" and the "low pull unit."

The weight stack unit **11** is of standard construction, comprising a stack of rectangular weights **11a** which are slide-mounted on a pair of vertical guide rods **11b**, each weight having a central horizontal hole registering with a respective hole in a central pick-up rod **11c** This pick-up rod depends from a head plate **11d** which is also slide-mounted on the rods **11b** and has a lift cable **18** secured thereto. The amount of weight to be lifted is selected by engaging a lock pin **11e** through the appropriate one of the weights **11a** into the pick-up rod **11c** Hence, when the cable **18** is adequately tensioned, the selected number of weights in the stack is lifted.

As shown in FIG **2**, the cable **18** functions in conjunction with cables **19** and **20** by way of floating pulley sets **21–22** and **23–24**, the two pulleys in each of these sets being coupled together. Cable **18** is guided by five guide pulleys **25–29** and passes beneath the floating pulley **21**. The center pulley **27** is vertically adjustable for slack take-up. Cable **19** passes over the floating

pulley 22, is connected to a floating pulley 30, and is guided by guide pulleys 31–32. Cable 20 passes over floating pulley 24, is guided by six guide pulleys 33–38, and passes over a floating pulley 39 which is connected to the lower end of a cable component 40 of the press unit 16. Another cable 41 passes over the floating pulley 30 and is guided by guide pulleys 42–43.

The high pull unit 12 is connected to one end of the cable 18, the butterfly unit 13 is connected to the ends of cable 41, the leg curl extension unit 15 is connected to one end of the cable 19, and the abdominal crunch unit 14 and the low pull unit 17 are connected to the ends of cable 20. The cable component 40 and the cables 18, 19, 20 and 41, have ball-like stop fittings 16a, 12a, 13a, 14a, 15a and 17a, respectively mounted thereon to restrict retraction thereof

With the described pulley and cable arrangement it can be seen that the tension in the three cables 18–20 is equal whenever one of them is tensioned by operation of an exercise unit, that the tension in the cable 41 is one-half the tension in the cables 18–20, and that the downward pull force on the cable component 40 of the press unit 16 is twice the tension in the cables 18–20

Adjacent the butterfly unit 13 and at one apex of the base 10 there is mounted a column 44 having two reach arms 45, 46 mounted at its upper end Reach arm 45 projects above the weight stack 11 and is connected to the upper end of the guide rods 11b. The guide pulleys 25, 26 are mounted at the outer and inner ends of the reach arm 45, and the guide pulleys 28, 29 are mounted at the inner and outer ends of the reach arms 46. Slack adjusting pulley 27 is mounted on the lower end of a threaded rod 27a passing downwardly through a top bracket 44a on the column 44 and having an adjusting nut above the bracket

The sets 21–22 and 23–24 of floating pulleys and the floating pulley 30 float within the column 44, and the guide pulleys 42–43 for the cable 41 are mounted between two pairs of cheeks projecting from the sides of openings in the column spaced above the lower end thereof and facing the butterfly unit 13. At its lower end, the column 44 has internal supports for the guide pulleys 31, 35. These pulleys are in staggered relationship and guide the cables 19, 20 through openings in the column 44 toward station B The column 44 has a third pair of cheeks projecting near the lower end thereof from the sides of an opening to receive the guide pulley 36, which is arranged to guide the cable 20 toward station C

At station B, a cylindrical pedestal 47 is mounted on the base frame 10 and has the pulleys 32 and 34 mounted in its lower end with adjacent openings for the cables 19, 20 Another pedestal 49 is mounted on the base frame 10 for housing the floating pulley 39 below the press unit 16 The guide pulleys 37, 38 are mounted at the lower end of the pedestal 49 at openings for entry of the cable 20 and exit thereof to make connection to the low pull unit 17 after passing over the floating pulley 39, which floats within the pedestal 49 and is connected to the cable component 40 of the press unit 16

Directing attention to the butterfly unit 13 (FIG. 3), the ends of the cable 41 pass out of the column 44 beneath the guide pulleys 42–43 and are anchored at the front of a pair of generally horizontal cam members 48 which are located at opposite sides of a pedestal 50 for a seat 51 having an upstanding back rest 52 The pedestal 50 and back rest 52 are rigidly connected to the columnn 44 by suitable rear braces A pair of brackets 53 project laterally from opposite sides of the pedestal 50, and each supports a depending pivot pin 54 on which a sleeve 55a is journal-mounted which is connected to a swinging support rod 55 of generally Z-shape for a respective padded wing 56. At its lower end, each sleeve 55a is secured to a respective one of the cams 48 The pivot pins 54 extend downwardly beyond the sleeves 55a to receive cotter keys therethrough for retaining the wings 56 and related apparatus. The stops 13a are fixed on the cable 41 so that they will engage the column 44 at the exit openings for the cable 41 from the column 44 at the pulleys 42–43 and leave slack in the portions of the cable 41 between the stops 13a and the cams 48 when the wings 56 are swung rearwardly toward the column 44 sufficiently to be out of the way of an exerciser seated on the seat 51 and pulling down on the overhead handlebar 58 of the exercise unit 12, in opposition to the selected number of weights in the weight stack 11

When an exerciser desires to perform the butterfly exercise after seating on the seat 5, the exerciser swings the wings 56 forwardly taking out the slack in the outer end portions of the cable 41, and then swings the wings 56 forwardly by pressure of the forearms applied at the back of the wings This forward swinging motion tensions the cable 41 over the outer surface of curved convex cams 48a at the back of the cam members 48 as they rotate with the wings 56 about the axis of the pivot pins 54 in opposition to the selected number of weights in the weight stack 11. I is noteworthy that the described arrangement makes it possible for the seat 51 to be used for both the butterfly unit 13 and high pull unit 12 without the movable components of either unit being in the way of the exerciser when not in use

Continuing to station B (FIGS. 4 and 6), the pedestal 47 rigidly supports a rearwardly sloped back support member 60 to which is connected a padded back rest 61 The member 60 continues horizontally at its lower end over the top of the pedestal 47 and is straddled by the frame 62 of a seat assembly 63 The frame 62 extends upwardly forwardly of the seat to provide a pivot support 62a. The seat assembly has a padded seat 63a and is pivoted at 63b so that it can swing upwardly to a generally vertical position, as shown in FIG 6, preparatory to performance of the leg curl exercise The back support member 60 supports the pulley 33 at the top on a pulley bracket which is engaged by the stop ball 14a on the respective end of the cable 20 when the exercise unit 14 is idle. A pair of elongated strap loops 64 are connected to the end of the cable 20 to function as part of the apparatus for the abdominal crunch exercise.

Pivoted at an upper end to the back of the seat 63 is a link 65 which has its lower end bent at right angles to the rest of the link to provide a stop 65a for cooperating with the underside of a U-shaped bracket 66 mounted on the inside of the seat pedestal 47. The link 60 extends through the bracket 66 and is formed with a notch 65b to serve as a catch for fitting onto the upper end of the seat pedestal 47 when the seat assembly 63 is swung upwardly so that the seat assembly 63 cannot then swing down from the upright position without the link 65 being lifted free of the seat pedestal 47 preparatory to swinging the seat back to a horizontal seating position

A dual-purpose element 70 of inverted T-shape having padded bottom arms 70a is pivotally suspended at 68 from the pivot support 62a. The cable 19 passes from the guide pulley 32 in the seat pedestal 45 forwardly through a front opening in the pedestal and connects to

the lower end of the dual-purpose element 70 The stop ball 15a is fixed on the cable 19 to engage the outer face of the pedestal when the dual-purpose element 70 is in a down position and a releasable lock pin 72 passes through the pivot support 62 and upper end of the dual-purpose element 70 so that the latter can be selectively held in a fixed down position or be free to be swung forwardly away from the seat pedestal 47. It will be noted that the seat assembly 63 also has a pair of side handles 74 which are laterally offset from the seat 63a and are positioned so that they may be conveniently grasped by a rearwardly facing exerciser when the seat occupies its horizontal or upright position

The abdominal crunch exercise is performed when the seat assembly 63 is in its horizontal position, as shown in FIG 4, and the dual-purpose element 70 is locked against swinging movement by the pin 72. The exerciser seats on the seat 63a, rests his back against the back rest 61 with the loops 64 passing over his shoulders, and positions his legs so the front of his ankles bear against the back of the padded bottom arms 70a. Then the exerciser performs the abdominal crunch exercise by grasping the loops 64 and pulling them downwardly and outwardly away from the upper pulley 33 in opposition to the selected load at the weight stack while keeping his lower back against the back rest 61

To perform the leg extension exercise, the exerciser unlocks the dual-purpose element 70 by removing the pin 72 and then grasps the handles 74 while seated Using both legs, the exerciser pivots his legs at the knee away from the seat pedestal 47, engaging the padded arms 70a and forcing element 70 to swing forwardly in opposition to the selected load at the weight stack 11.

Preparatory to performing the leg curl exercise, the seat assembly 63 is swung upwardly and locked in upright position by use of the link 65, and the lock pin 72 is released so that the dual-purpose element 70 is free to swing forwardly in opposition to the selected load at the weight stack 11 As the seat assembly 63 swings upwardly, the pivot 68 swings forwardly and lowers In the raised position of the pivot 68, the arms 70a of the dual-purpose element 70 are at the most suitable height for the leg extension exercise; and when the pivot 68 is in its lowered position, the pivot 68 and arms 70 are in the most suitable position for the standing leg curl exercise The exerciser faces rearwardly in standing position with his legs behind the padded bottom arms 70a and grasps the upright seat handles 74 Then the exerciser pivots one of his legs at the knee away from the seat pedestal 47 so that the back of the ankle of the leg engages the respective padded arm 70a and forces the dual-purpose element 70 to swing forwardly away from the seat pedestal 47 in opposition to the selected load at the weight stack 11 After swinging the leg back and forth the selected number of times, the exercise is repeated with the other leg.

Continuing to station C, the cable 20 passes forwardly from the guide pulley 38 (FIG. 5), through a front opening in the pedestal 49 and is connected, for example, to a pair of hand grips 17b for performing a low pull exercise The pulley 38 is preferably mounted for swinging movement of about thirty degrees on a vertical axis. The stop 17a on the cable 20 is arranged to engage a stop bracket at the underside of the pulley 38 to restrict retraction of the cable.

As previously indicated, the cable component 40 is connected to the floating pulley 39 within the pedestal 49 It extends upwardly through a center opening in a

head plate 49a at the top of the pedestal 49 and has the stop 16a arranged to engage the upper surface of the head plate 49a when the press unit 16 is not in use. The cable component 40 is connected at its upper end to a swing bar 80 having a forked rear end portion 80a which straddles the column 44 and is pivotally connected thereto at 81. The forward end of the swing bar 80 has rigid fork extensions 80b which are bridged at their forward ends by a handle bar 82. It is preferred that the cable component 40 be connected to the swing bar 80 approximately midway between the pivot 81 and the handlebar 82 so that the exerciser has a 2:1 mechanical advantage when he pushes up on the handle bar 82 in opposition to the load of the selected weights in the weight stack 11 in performing the press exercise This 2.1 mechanical advantage, by doubling the upward force exerted on the pulley 39 for a given manual upward force exerted on the handle bar 82, results in substantially the same tension in the cables 18–20 as results when the same manual force is applied to the cables 18–20 at any one of the other exercise units. The function of stop 16a can be performed by having the handle 80 rest directly on the pedestal 49.

To provide adjustment of the height of the handle bar 82 during performance of the press exercise, the swing bar 80 is articulated forwardly of the cable component 40 to provide rear and forward swing bar sections 80a, 80b The rear section 80a has a sector plate 84 forwardly of the articulation This plate has an arcuate row of holes for selectively receiving a pin registering with a hold through the front section 80b

For body support while performing the press exercise, a bench assembly 90 is provided at station C which comprises a pedestal 91 supporting the forward end portion of a bench frame 92 At its rear end the bench frame 92 is pivotally mounted at 93 to the pedestal 49 for horizontal swinging movement so that the bench assembly can be swung laterally out of the way when optional exercises are to be performed using exercise unit 16 or a low pull exercise is to be performed using grips 17b. In this regard, a resilient floor mat 94 connected to pedestal 49 may be provided for stability when performing low pull exercised with exercise unit 17 or press exercises with exercise unit 16 without use of the bench 90

The bench assembly has padded adjustable back rest and seat rest sections 95–96 swingably connected together The back rest section 95 has a pair of pivoted links 98 pivotally connected to the frame 92 and the seat section 96 is slidable along the frame 92 for adjusting the slope of the back rest section. Notches 92a in the frame 92 are selectively engaged by a slide element 99 on the seat section 96 to hold it in the horizontal position corresponding to the desired slope, if any, for the back section 95

It will be apparent that additional exercise stations can be added incorporating the cable and pulley system concepts of the invention. It is also apparent that sprockets and chains can be substituted for the pulleys and cables of the system; hence, it is intended that "pulley" and "cable" when used in the claims be interpreted to include sprockets and chains or belts.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended

Claims 1, 2, 3, 4, 13, 20, 21 and 24 of U.S. Pat. No. 4,809,972, reissued as this reissue patent, were canceled by a Statutory Disclaimer filed Feb. 20, 1990.

We claim

5. An exercise machine comprising

a load,

first, second and third exercise units;

a first set of floating pulleys coupled together,

a second set of floating pulleys coupled together,

a first cable passing over one of said floating pulleys of said first set and one of said floating pulleys of said second set, and connected at one of its ends to said load and connected at its other end to said first exercise unit;

a second cable passing over the other of said floating pulleys of said first set and connected at one of its ends to said second exercise unit and connected at its other end to a stop;

a third cable passing over the other of said floating pulleys of said second set and connected at one of its ends to said third exercise unit and connected at its other end to a stop; and

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second exercise unit, or to said third cable by use of said third exercise unit, applies a like force to said load and to all of said stops except the stop for the exercise unit in use.

6. An exercise machine comprising

a load,

first, second, third, fourth and fifth exercise units,

a first set of floating pulleys coupled together,

a second set of floating pulleys coupled together,

a first cable passing over one of said floating pulleys of said first set and one of said floating pulleys of said second set, and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys of said first set and connected at its ends to said second and third exercise units,

a third cable passing over the other of said floating pulleys of said second set and connected at its ends to said fourth and fifth exercise units, and

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second or third exercise units, or to said third cable by use of said fourth or fifth exercise units, applies a like force to said load and to all of said stops except the stop for the exercise unit in use.

7. An exercise machine comprising

a base support,

a column mounted on said base support and having first and second reach arms projecting therefrom,

first, second and third exercise units arranged with said first exercise unit at a higher elevation than said second and third exercise units located adjacent the outer end of said second reach arm;

a weight carried by said base support and positioned beneath the outer end of said first reach arm,

a first cable connected at one of its ends to said weight and connected at its other end to said first exercise unit,

first and second floating pulleys coupled together, said first floating pulley having said first cable passing thereunder below the level of said reach arms and adjacent said column,

guide means on said reach arms for guiding said first cable from said weight to the outer end of said first reach arm, along said first reach arm and down to said first floating pulley, up to said second reach arm from said first floating pulley, and along said second reach arm to said first exercise unit;

a second cable connected at one of its ends to said second exercise unit and connected at its other end to said third exercise unit,

said second cable passing over said second floating pulley,

guide means for guiding said second cable from said second floating pulley to the base of said column and from there to said second and third exercise units;

each of said exercise units having a respective stop whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second or third exercise unit applies a lifting force to said weight and a force of the same magnitude to all of said stops except the stop for the exercise unit in use.

8. An exercise machine comprising

a base support,

a column mounted on said base support and having first and second reach arms projecting therefrom,

first, second, third, fourth and fifth exercise units arranged with said first exercise unit at a higher elevation than said second and third exercise units and located adjacent the outer end of said second reach arm,

a weight carried by said base support and positioned beneath the outer end of said first reach arm,

a first cable connected at one of its ends to said weight and connected at its other end to said first exercise unit;

first and second floating pulleys coupled together, said first floating pulley having said first cable passing thereunder below the level of said reach arms and adjacent said column;

first guide means on said reach arms for guiding said first cable from said weight to the outer end of said first reach arm, along said first reach arm and down to said first floating pulley, up to said second reach arm from said first floating pulley and along said second reach arm to said first exercise unit;

a second cable connected at one of its ends to said second exercise unit and connected at its other end to said third exercise unit, said second cable passing over said second floating pulley,

second guide means for guiding said second cable from said floating pulley to the base of said column and from there to said second and third exercise units;

third and fourth floating pulleys coupled together at a level lower than that of the first and second floating pulleys, said first cable also passing under said third floating pulley;

a third cable passing over said fourth floating pulley, said third cable being connected at one of its ends to said fourth exercise unit and connected at its other end to said fifth exercise unit,

third guide means for guiding said third cable from said fourth floating pulley to the base of said col-

umn and from there to said fourth and fifth exercise units;

each of said exercise units having a respective stop whereby a manual exercising force applied either to said first cable by use of said exercise unit, or to said second cable by use of said second or third exercise unit, or to said third cable by use of said fourth or fifth exercise unit, applies a lifting force to said weight and a force of the same magnitude to all of said stops except the stop for the exercise unit in use.

9 An exercise machine according to claim 8 in which a pedestal is mounted on said base support and carries said third and fourth exercise units, and part of said second and third guide means is carried by said pedestal

[10 An exercise machine comprising

a load,

first, second and third exercise units,

two floating pulleys coupled together;

an adjustable idler pulley;

a first cable passing over one of said floating pulleys and said adjustable idler pulley, and connected at one of its ends to said load and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys and connected at one of its ends to said second exercise unit and connected at its other end to said third exercise unit,

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second or third exercise unit applies a like force to said load and to all of said stops except the stop for the exercise unit in use.]

11 An exercise machine comprising

a load,

first, second, third, fourth and fifth exercise unit,

a first set of floating pulleys coupled together;

a single floating pulley,

a second set of floating pulleys coupled together;

a first cable passing over one of said floating pulleys of said first set and one of said floating pulleys of said second set, and connected at one of its ends to said load and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys of said first set and connected at one of its ends to said second exercise unit and connected at its other end to said single floating pulley,

a third cable passing over the other of said floating pulleys of said second set, and connected at one of its ends to said third exercise unit and connected at its other end to said fourth exercise unit,

a fourth cable passing over said single floating pulley and connected at its ends to said fifth exercise unit,

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second exercise unit, or to said fourth cable by use of said fifth exercise unit, applies a force to said load and to all of said stops except the stop for the exercise unit in use

12. An exercise machine comprising

a load,

first, second, third, fourth, fifth and sixth exercise units,

a first set of floating pulleys coupled together,

a second set of floating pulleys coupled together,

first and second single floating pulleys;

a first cable passing over one of said floating pulleys of said first set and one of said floating pulleys of said second set and connected at one of its ends to said load, and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys of said first set and connected at its ends to said second exercise unit and to said first single floating pulley;

a third cable passing over the other of said floating pulleys of said second set and said second single floating pulley, and connected at its ends to said fourth and fifth exercise units;

a fourth cable passing over said first single floating pulley and connected at its ends to said third exercise unit;

said sixth exercise unit being connected to said second single floating pulley,

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second exercise unit, or to said third cable by use of said fourth, fifth or sixth exercise units, or to said fourth cable by use of said third exercise unit, applies a force to said load and to all of said stops except the stop for the exercise unit in use.

14 An exercise machine comprising·

a weight,

first, second, third and fourth exercise units,

two floating pulleys coupled together as a set,

a single floating pulley,

a first cable passing over one of said floating pulleys of said set and connected at one of its ends to said weight and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys of said set and over said single floating pulley, and connected at one of its ends to said second exercise unit and connected at its other end to said third exercise unit,

said fourth exercise unit having a pull element connected to said single floating pulley and having a swing arm which is pivoted at a first of its ends, has a handle at its other end, and is centrally pivotally connected to said pull element whereby manual force applied to said handle will be multiplied at said single floating pulley

15. An exercise machine according to claim 14 in which said arm is pivotally connected at its said first end to a hollow column in which said set of floating pulleys is housed

16 An exercise machine according to claim 15 in which said column has a first reach arm extending over said weight and has a second reach arm from which said first exercise unit is suspended by said first cable, and in which said first cable extends from said first reach arm to said weight;

said second cable passing out of said column to said column below the level of said set of floating pulleys to pass over said single floating pulley and to connect to said second and third exercise units

17 An exercise machine according to claim 14 in which said swing arm extends over a hollow pedestal in which said single floating pulley is housed, said hollow pedestal having a transverse element connected thereto

with an opening through which said pull element passes, and

said pull element having a stop above said opening for engaging the transverse element to restrict downward movement of said single floating pulley when said fourth exercise unit is idle.

18 An exercise machine according to claim 17 in which said pedestal has entry and exit guide pulleys below the level of said single floating pulley, said second cable passing over said guide pulleys and said third exercise unit being located adjacent said exit guide pulley

19. An exercise machine according to claim 17 in which a bench is swing mounted about a vertical axis at one of its ends on said pedestal below said handle.

22. An exercise machine comprising·

a load,

first, second, and third exercise units,

two floating pulleys coupled together;

a single pulley,

a first cable passing over one of said floating pulleys and connected at one of its ends to said load and connected at its other end to said first exercise unit,

a second cable passing over the other of said floating pulleys and connected at one of its ends to said second exercise unit and connected at its other end to said single pulley,

a third cable passing over said single pulley and connected to said third exercise unit; and

respective stop means for said exercise units whereby a manual exercising force applied to said first cable by use of said first exercise unit, or to said second cable by use of said second exercise unit, or to said third cable by use of said third exercise unit, applies a force to said load and to all of said stop means except the stop means for the exercise unit in use

23 An exercise machine according to claim 22 in which said third exercise unit is a butterfly exercise unit including a pair of swing arms operatively associated with the ends of said third cable

25 An exercise machine comprising

a load,

first, second, third and fourth exercise units,

two floating pulleys coupled together,

a third floating pulley,

a first cable passing over one of said two floating pulleys and connected at one of its ends to said load and connected at its other end to said first exercise unit,

a second cable passing over said third floating pulley and the other of said two floating pulleys, and connected at one of its ends to said second exercise unit and connected at its other end to said third exercise unit,

said fourth exercise unit being operatively associated with said third floating pulley;

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second or third exercise units, or to said third floating pulley by use of said fourth exercise unit, applies a force to said load and to all of said stops except the stop for the exercise unit in use

26 An exercise machine comprising

a movable load,

first, second, and third exercise units,

a first floating pulley unit,

a second floating pulley unit,

a first cable receiving said floating pulley units and said load and connected to said first exercise unit such that a force exerted on either one of said floating pulley units or on said first exercise unit responsively tensions said first cable and is resisted by said load,

a second cable carried by said first floating pulley unit and connected at one of its ends to said second exercise unit,

a third cable carried by said second floating pulley unit and connected at one of its ends to said third exercise unit; and

stops on said three cables whereby a manual exercising force applied either to said first cable by use of said first exercise unit, or to said second cable by use of said second exercise unit, or to said third cable by use of said third exercise unit, responsively tensions said first cable and applies a force tending to move said load

27. An exercise machine comprising.

a weight unit;

first, second, and third exercise units,

first and second floating pulley units,

a first cable operatively receiving said floating pulley units and loaded by said weight unit,

first and second nonfloating pulley units receiving said first cable and located, respectively, between said weight unit and one of said pulley units and between said weight unit and said first exercise unit,

a second cable carried by said first pulley unit and connected to said second exercise unit,

a third cable carried by said second pulley unit and connected to said third exercise unit, and

stops for said three cables arranged such that a manual exercising force applied to any of said three exercise units responsively tensions each of said three cables and is resisted by said weight unit

28. An exercise machine comprising

a vertically movable weight,

first, second, third and fourth exercise units;

a set of upper and lower floating pulleys coupled together for unitary vertical movement;

a bodily moveable pulley associated with said fourth exercise unit such that a manual exercising force applied to said fourth exercise unit causes displacement of said bodily moveable pulley,

two upper guide pulleys at a higher elevation than said set of floating pulleys,

two lower guide pulleys at a lower elevation than said set of floating pulleys,

an additional guide pulley,

a frame assembly supporting all of said guide pulleys,

a first cable passing part way around said additional guide pulley, over the top of said upper guide pulleys and looping downwardly between the latter by a loop passing beneath the underside of the upper one of said floating pulleys, said first cable being connected at one of its ends so as to be loaded by said weight and connected at its other end to said first exercise unit, said first cable also looping part way around said bodily moveable pulley at a location between said upper guide pulleys and said additional guide pulley;

a second cable passing beneath the underside of said lower guide pulleys and looping upwardly therebetween by a loop passing over the top of the lower one of said floating pulleys, and said second cable being connected at one of its ends to said second exercise

unit and connected at its other end to said third exercise unit, and

stops for said exercise units whereby a manual exercising force applied either to said first cable by use of said first and fourth exercise units or applied to said second cable by use of said second or third exercise unit, applies a lifting force to said weight and a force to all of said stops except the stop for the exercise unit in use, whereby said set of floating pulleys remains vertically stationary and said weight lifts when said first or

fourth exercise unit is used, and whereby said set of floating pulleys lowers and said weight lifts responsive to use of said second or third exercise unit.

29. An exercise machine according to claim 28 in which said additional guide pulley is located between said upper guide pulleys and said first exercise unit.

30. An exercise machine according to claim 29 in which said additional guide pulley is located between said upper guide pulleys and said weight.

* * * * *

EXHIBIT B

US005779601A

United States Patent [19]

Ish, III

[11] Patent Number: 5,779,601

[45] Date of Patent: Jul. 14, 1998

[54] **COMPACT MULTI-STATION EXERCISE MACHINE**

[75] Inventor A. Buell Ish, III, Renton, Wash

[73] Assignee Vectra Fitness, Incorporated, Redmond, Wash

[21] Appl. No 597,522

[22] Filed Feb. 2, 1996

[51] Int. Cl.[6] A63B 21/00

[52] U.S. Cl. 482/100, 482/102, 482/138

[58] Field of Search 482/94, 97–103 482/112 113, 130, 133–138, 142, 148 908, D21/195

[56] References Cited

U.S PATENT DOCUMENTS

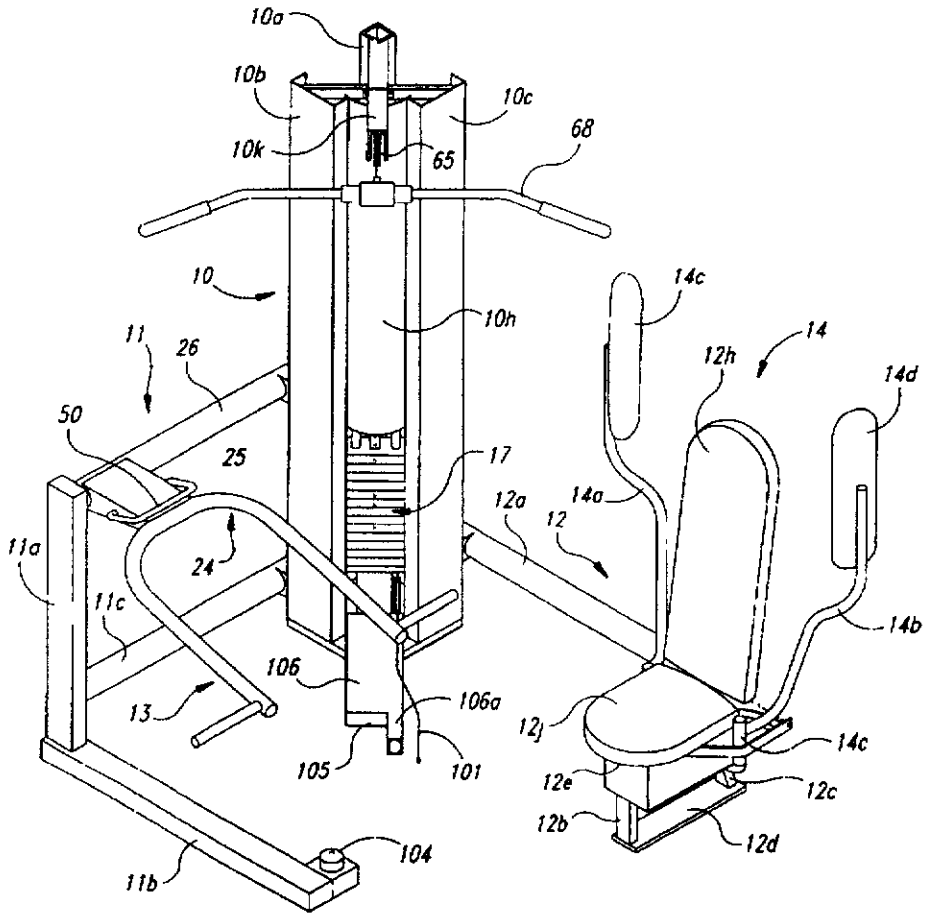
Re 34,577	4/1994	Habing et al	482/138
4,711,448	12/1987	Minkow et al	482/142
4,986,538	1/1991	Ish, III	482/138
5,042,801	8/1991	Sterba et al	482/137 X
5,263,915	11/1993	Habing	482/138 X
5,336,148	8/1994	Ish, III	482/137 X
5,362,290	11/1994	Huang	482/138 X
5,518,477	5/1996	Simonson	482/138 X

Primary Examiner—Richard J Apley
Assistant Examiner—John Mulcahy
Attorney, Agent, or Firm—Seed and Berry LLP

[57] **ABSTRACT**

A multi-station exercise machine in which each of the exercise stations is interconnected with a weight stack using a reeving system having corner frame with right and left wings at right angles to one another. High and low pull cables in the reeving system extend from the corner frame. The wings have butterfly and press stations at their outer end. The press station connects to the reeving system via a horizontal extension member which turns responsive to swinging of a press arm. An adjustment linkage permits the starting position of the press arm to be varied by operation of a lever at the press station An adjustable bench with a leg exercising mechanism is optionally used at the press station as only a bench or is used in a diagonal position at which the leg exercising mechanism is connected to the low pull cable

16 Claims, 8 Drawing Sheets



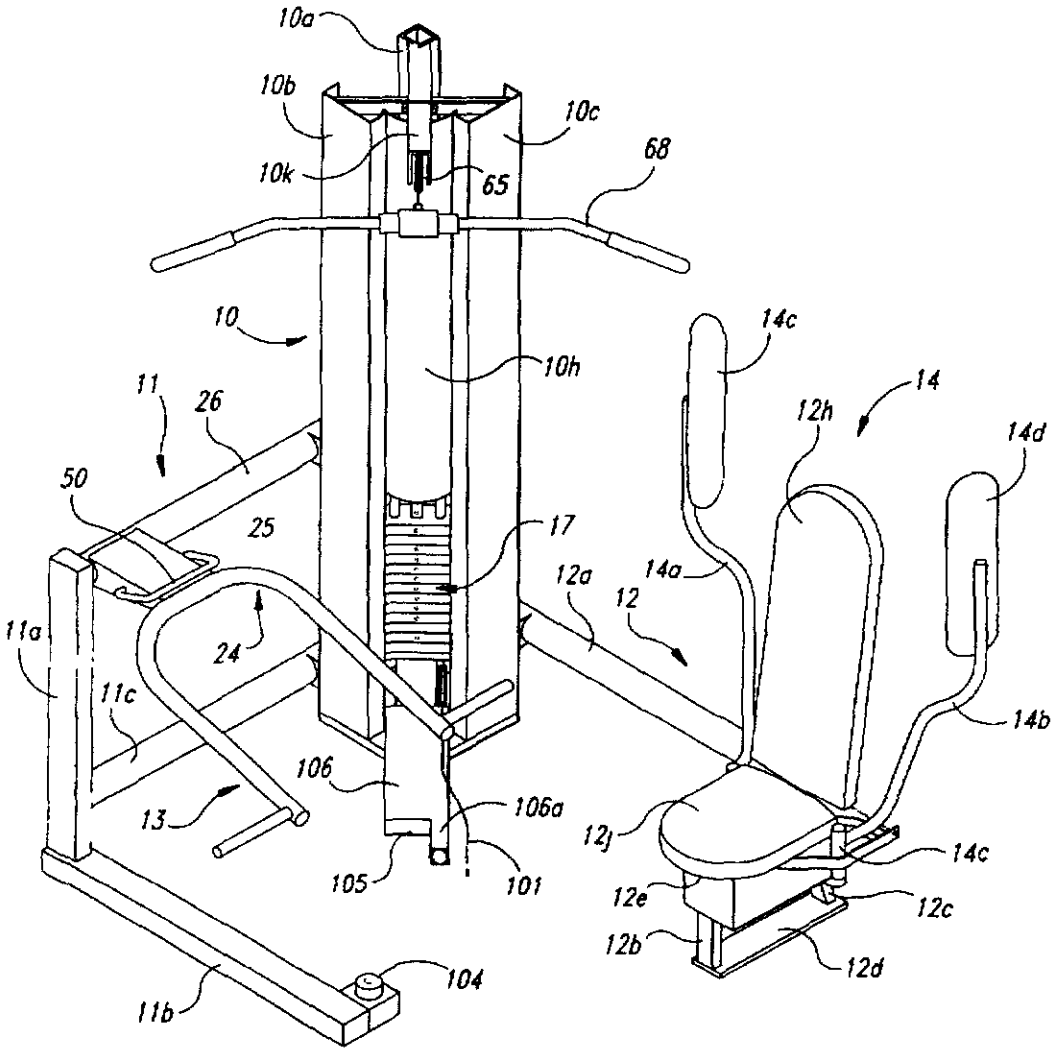

10a
10b
10c
10k
65
68
10
10h
14c
14
12h
14d
11
26
50
25
17
12a
14a
12
11a
24
11c
14b
106
106a
13
12j
14c
105
101
12e
12c
12b
12d
104
11b

Fig. 1

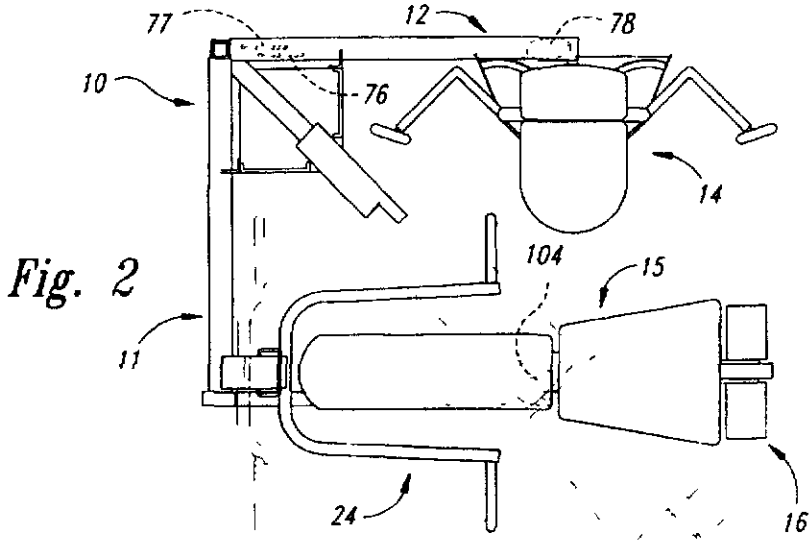


Fig. 2

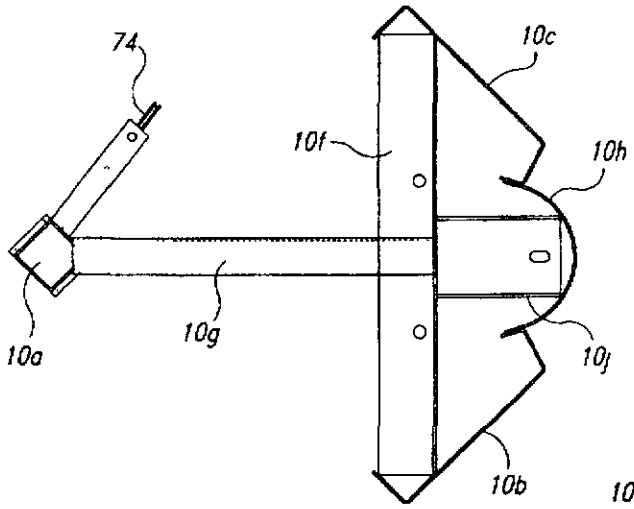


Fig. 3A

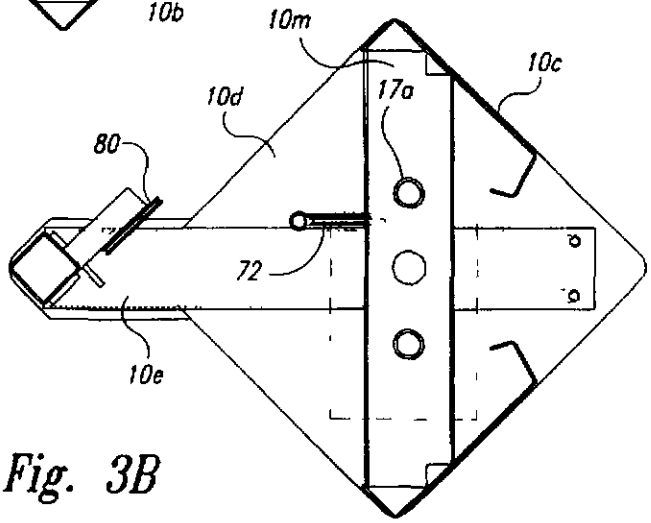


Fig. 3B

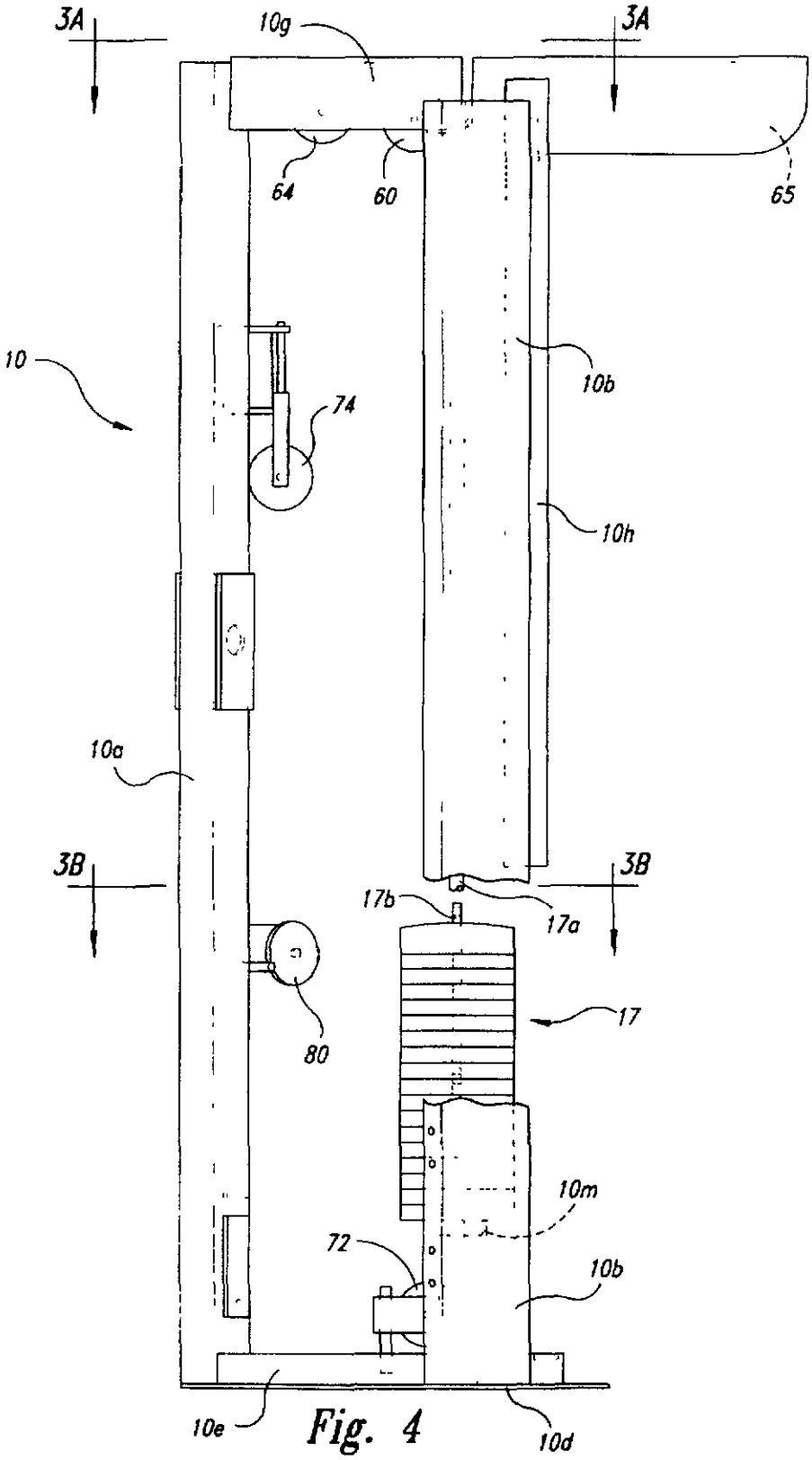

3A
10g
3A
64
60
65
10
10b
74
10h
10a
3B
3B
17b
17a
17
80
10m
72
10b
10e
10d

Fig. 4

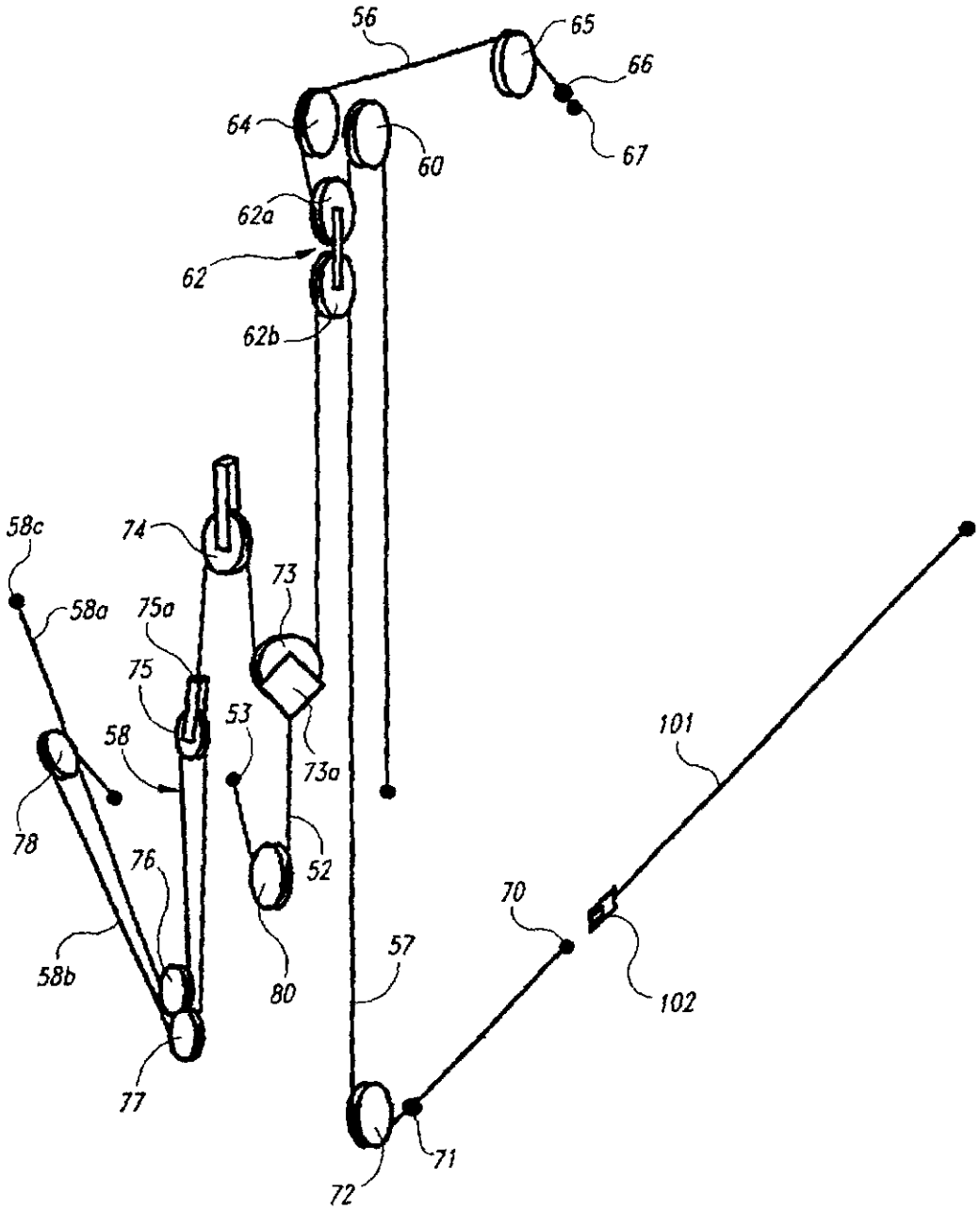

56
65
66
67
64
60
62a
62
62b
58c
74
73
58a
75a
75
53
58
73a
101
78
76
52
70
57
58b
80
102
77
71
72

Fig. 5

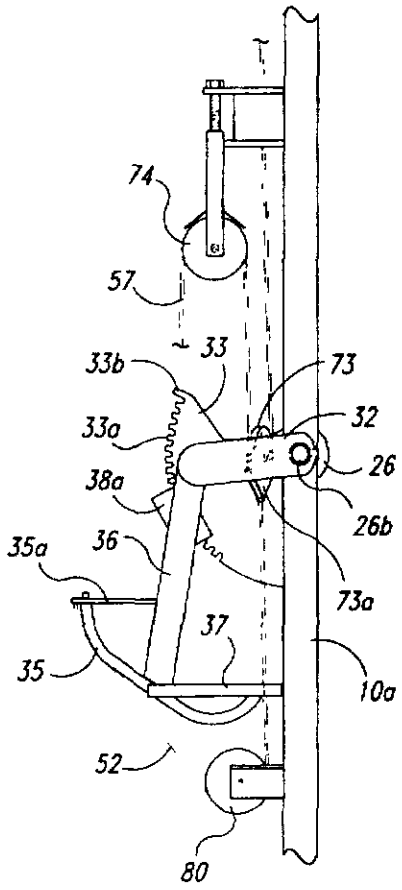


Fig. 6A

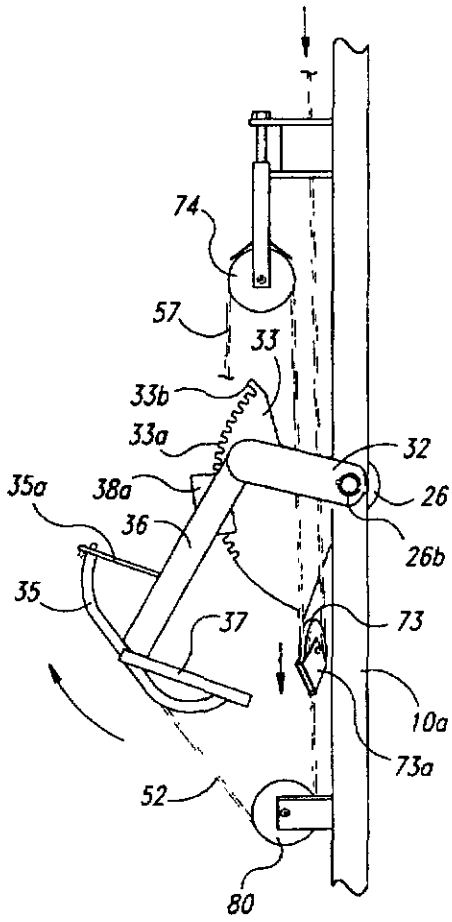


Fig. 6B

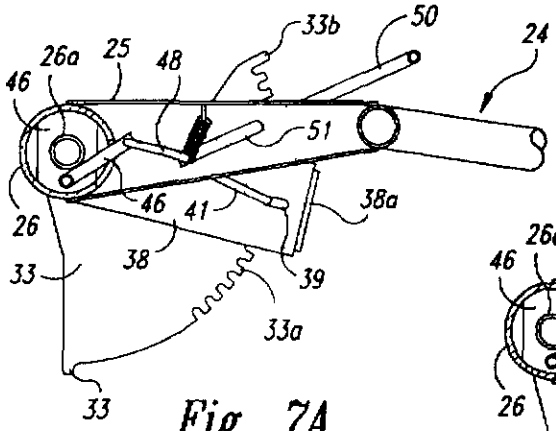


Fig. 7A

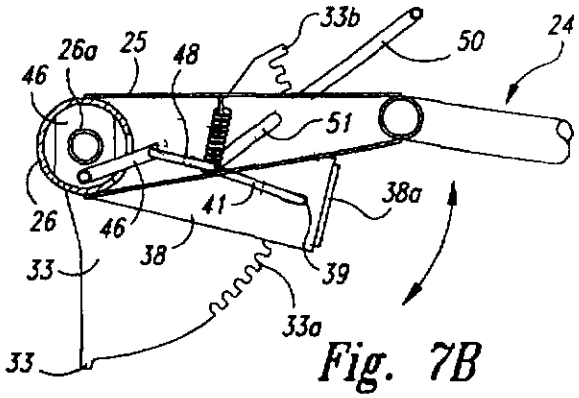


Fig. 7B

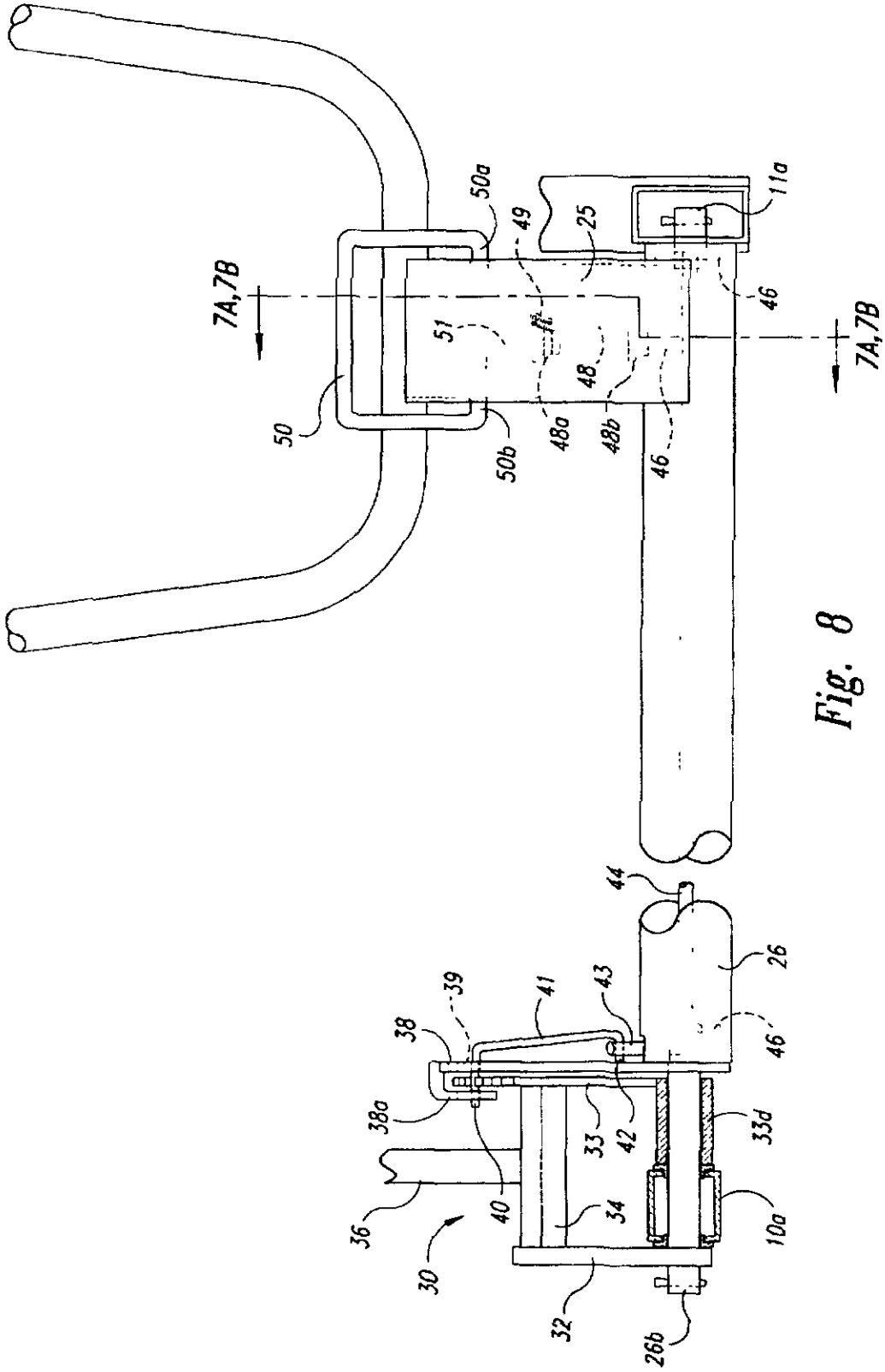

7A,7B
7A,7B
50a
49
25
11a
46
51
48
48a
48b
50
50b
46
44
26
39
41
43
38
46
38a
33
42
33d
36
40
34
10a
30
32
26b

Fig. 8

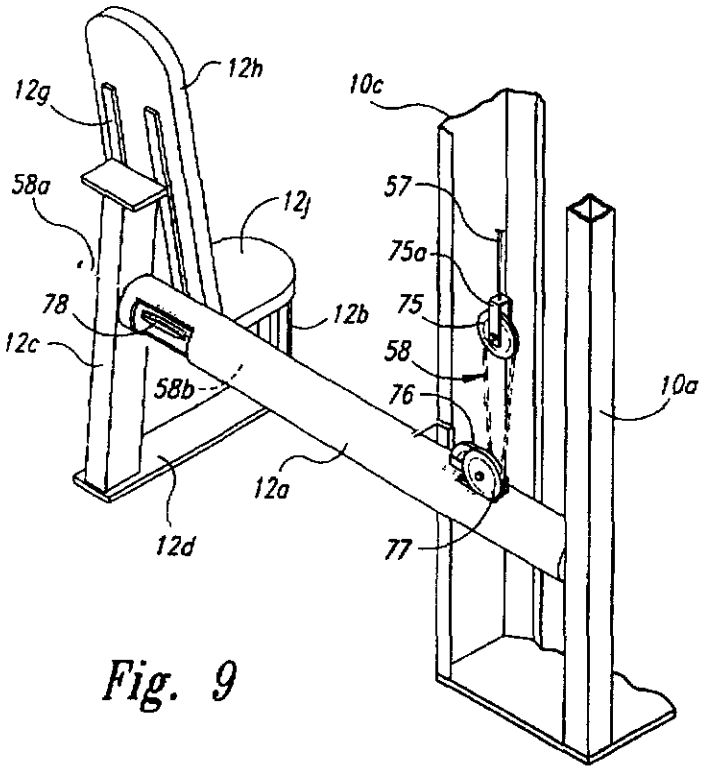

12h
12g
10c
58a
57
12j
75a
78
75
12b
12c
58
58b
76
10a
12a
12d
77

Fig. 9

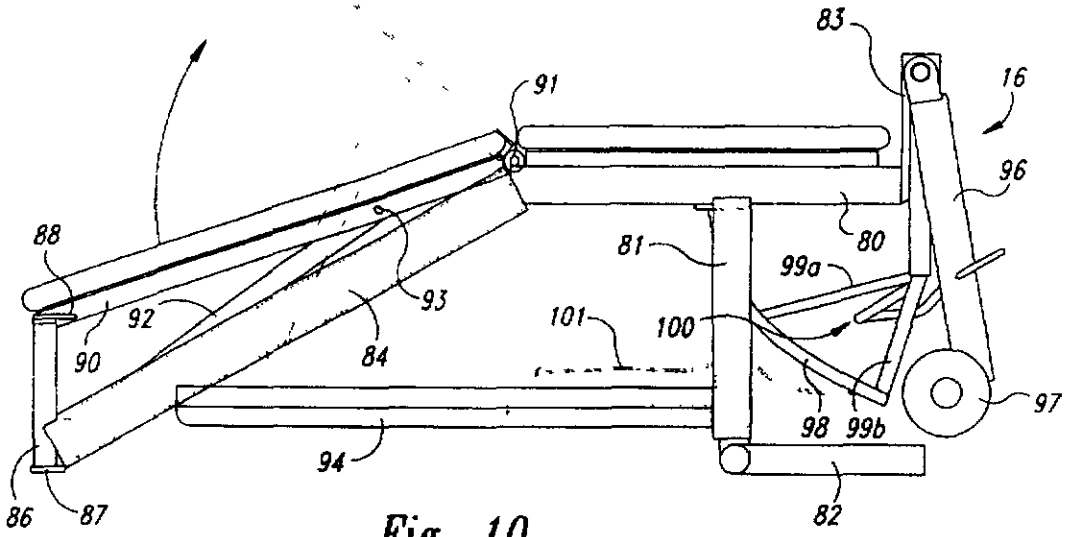

83
91
16
96
88
81
80
99a
92
93
101
100
90
84
97
98
99b
94
86
87
82

Fig. 10

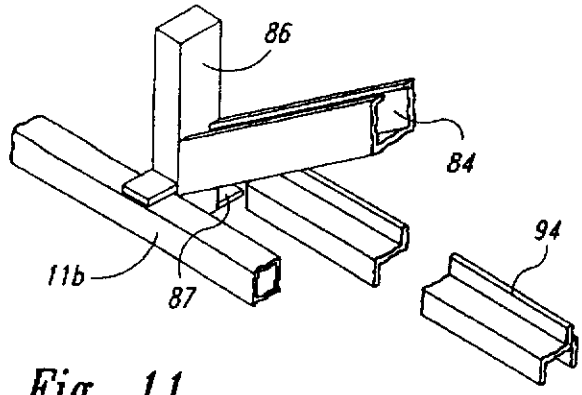


Fig. 11

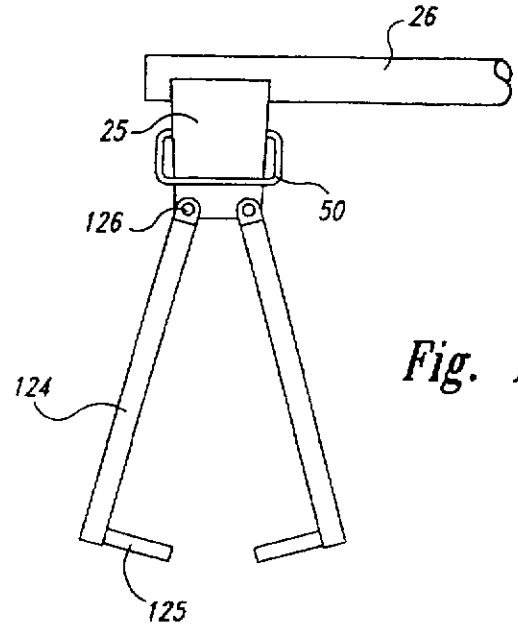


Fig. 12

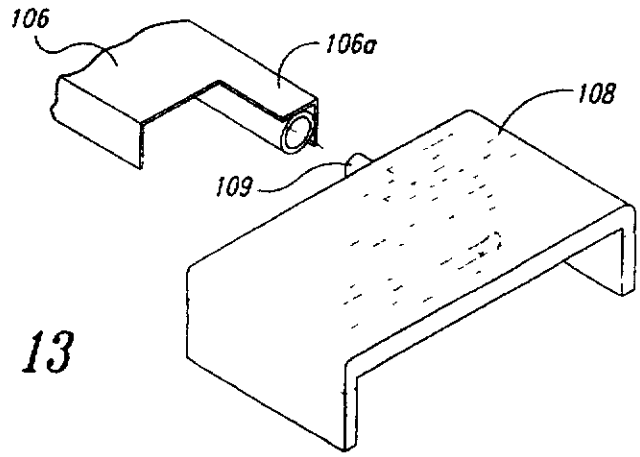


Fig. 13

COMPACT MULTI-STATION EXERCISE MACHINE

TECHNICAL FIELD

The present invention relates to exercise machines of the type having multiple exercise stations on a single support frame assembly

BACKGROUND OF THE INVENTION

Multi-station exercise machines having press, butterfly and leg curl/extension exercise stations operating from a single weight stack have become popular for home use but have required more floor space than may be available or desirable because typically these stations have been arranged to occupy different quadrants This necessitates a floor area about 8 ft. by 11 ft. for the machine and the additional body space required to perform the exercises Thus, a need has arisen for a more compact multi-exercise machine requiring substantially less floor area.

SUMMARY OF THE INVENTION

The present invention answers the need for a more compact exercise machine by providing a machine which will fit conveniently against adjoining walls at the corner of a room and require only a floor space of about 5 ft. by 6 ft. This is accomplished by providing a frame with a corner column and two wing extensions at right angles to one another One of these extensions supports a butterfly station at which the exerciser faces with his (her) back to the wall which is behind the butterfly station, and the other one of the extensions has a press station in which the press arms swing toward and away from the adjoining wall which is directly behind the press station The leg curl/extension station is provided at the outer end of an adjustable bench and is used when the bench is positioned to extend from the corner column diagonally outwardly between the press and butterfly stations The bench is shifted to extend from the press station at right angles to the adjacent wall when using the press station

The improved exercise machine incorporates a reeving system in which selected weights from a single weight stack is used as a load for each of the exercise stations without disconnecting any cables except for an extension cable for the leg curl/extension station on the bench. This extension cable connects to the cable for a low pull station at the base of the corner column. A high pull station is also provided at the corner column

To enable operation of the press station in the described position, the press arms are mounted on an extension tube which extends horizontally from the corner column The arrangement is such that when the tube is turned about its longitudinal axis responsive to swinging the press arms downwardly, the movement is resisted by the selected weight load applied via the reeving system. The starting position for the press arms is adjustable by operation of an adjustment handle at the press station which functions to disengage the extension tube and related latching mechanism tube from the reeving system while it is turned by the press arms to the selected starting position

BRIEF DESCRIPTION OF THE DRAWINGS

FIG 1 is a perspective view of an exercise machine embodying the present invention without the bench being shows,

FIG. 2 is an abbreviated top plan view of the exercise machine showing the alternative bench positions;

FIG 3A is a top plan view of the corner frame taken as indicted by line 3A—3A in FIG 4,

FIG 3B is a horizontal sectional view of the corner frame taken as indicated by line 3B—3B in FIG R,

FIG 4 is an elevational view of the corner frame as seen from the right side,

FIG 5 is a schematic of the reeving system for the exercise machine,

FIG 6A is a fragmentary elevational view as seen from the left side of the corner frame and showing the related parts when the press arm is at a lowered start position,

FIG 6B corresponds to FIG 6A and shows the positions of the related parts when the press arm has been raised from the start position,

FIGS. 7A and 7B are fragmentary vertical sectional views taken as indicated by line 7A, 7B–7A, 7B in FIG 8 and showing the positions of the adjustment mechanism for the press arm corresponding to FIGS. 6A and 6B,

FIG. 8 is a horizontal fragmentary sectional view taken at a level above the extension tube and related mechanism,

FIG 9 is a fragmentary perspective view looking forwardly from behind the back of the left side of the exercise machine,

FIG 10 is a side elevational view of the bench,

FIG 11 is a detail perspective view of the rear of the bench frame,

FIG 12 is a top plan view showing an alternative press arm unit; and

FIG. 13 is a perspective view showing the manner of connection of the portable platform.

DETAILED DESCRIPTION OF THE INVENTION

The exercise machine of the present invention incorporates a corner frame **10** from which extend right and left frame extensions **11–12** as wings In this description "right" and "left" designate directions as viewed by a person with his (her) back facing the corner frame **10** The right frame extension supports a press station **13** and the left frame extension supports a butterfly station **14**. The exercise machine also includes a multi-position bench **15** having a leg developer **16** at its forward end. As will be later explained in detail, this bench **15** is moved between a position opposite the butterfly station and a generally diagonal position between the press and butterfly stations as indicated in FIG **2**.

The corner frame **10** has a tubular corner member **10***a* and right and left channels **10***b*–**10***c* extending upwardly as columns from a base assembly (FIG. 3B) comprising a square bottom plate **10***d* surmounted by a diagonally extending base channel **10***e* projecting rearwardly beneath the corner tube **10***a*. As shown in FIG 3A, an upper angle bar **10***f* interconnects the corner tube **10***a* and channels **10***b*–**10***c* and supports the forward end of a downwardly opening channel **10***g* having its other end fixed to the upper end portion of the corner tube **10***a* At the front of the channel members **10***b*–**10***c* there is mounted a front cover **10***h* extending from a position spaced from slightly above the top level of the channel members **10***b*–**10***c* to a level part way down from the top thereof The front cover **10***h* has a central rectangular cutout at the top, and an upwardly opening channel section **10***j* extends rearwardly from a weld connection at the border of this cutout to a connection to the angle bar **10***f*. An outreach channel **10***k* projects diagonally

from a rearward portion which seats on the channel section 10*j* and is bolt connected to the channel section and the angle bar 10*f*.

A standard weight stack unit 17 is supported on a cross-member 10*m* on the frame 10 which extends between the column channels 10*b*–10*c* and is welded thereto at a position raised above the base channel 10*e* The weight stack unit 17 has a pair of upright guide bars 17*a* extending between the upper angle bar 10*f* and the base channel 10*e*, and has a selector rod 17*b* passing downwardly through the stack of weight plates in the weight stack. This selector rod has a row of holes therealong registering with lateral holes in the weight plates so that a weight selector pin can be inserted through a selected weight plate and thereby couple that weight plate and those thereabove to the selector rod 17*b*

The right frame extension 11 for the press station has an upright tubular member 11*a* which is mounted on a ground engaging outrigger member 11*b* and is connected to the corner member 10*a* and right channel member 10*b* by a bolt-connected brace member 11*c* The left frame extension 12 includes a left tubular brace member 12*a* which is bolt-connected to the upright members 10*a*, 10*c* and extends at the left side of the machine to the butterfly station 14 where it attaches to the back of a seat support frame having front and back legs 12*b*, 12*c* connected together by a flat floor engaging rung 12*d* and a seat support plate 12*e* which angles downwardly at the front as a skirt and doubles back. The back leg 12*c* projects upwardly above the level of the seat support plate 12*e* to a cross-member which extends horizontally between a pair of back support members 12*g* connected at their lower ends to the seat support plate 12*e* A padded back rest 12*h* and seat 12*j* are mounted on the members 12*g* and the seat support plate 12*e*, respectively

The butterfly station 14 provides a pair of tubular swing arms 14*a*–14*b* which carry padded wings 14*c*–14*d* and have respective bottom tubular extensions 14*e* journaled on vertical stub shafts. These stub shafts extend between the ends of a upper and lower members 12*k*–12*l* on the seat structure Cam units 18—18' on the tubular extensions 14*e* swing at different levels from a stop position engaging the back of the seat skirt. Cable connection keyhole slots are provided in ears at outer ends of the cam units. It is preferred that the butterfly unit have adjustment for the rear position of the butterfly arms as provided in U.S Pat. No 5,378,216

The press station 13 includes a press arm unit 24 presenting a pair of press arms 24*a* having handles 24*b* at their outer ends The press arm unit is fixed to a bracket 25 extending laterally from a rigid connection to a horizontal extension tube 26. This tube 26 has a right stub shaft 26*a* journaled in the right upright member 11*a* and a left stub shaft 26*b* journaled in the corner column 10*a* and projecting therebeyond. A swing assembly 30 is provided including a swing arm 32 and a curved adjustment plate 33 which are journaled on the left stub shaft 26*b* at opposite sides of the corner column 10*a* and are cross-connected by a cross-member 34 which is spaced from the corner column 10*a* A lever arm 36 projects from the center of the cross-member 34, and the adjustment plate 33, has an elongated hub 33*d* journaled on the stub shaft 26*b*. A cam strip 35 shaped to receive a cable is mounted on the free end of the lever arm 36, and a stop rod 37 is fixed to the free end of the lever arm 36 and positioned to the left of the cam strip 35 The stop rod 37 extends rearwardly from the lever arm 36 toward the corner column 10*a* and preferably has a bumper on its rear end for engagement with the corner column 10*a* as a stop as seen in FIG 6A.

The adjustment plate 33 has an arcuate forward edge containing a series of teeth 33*a* and having stop ears 33*b*, 33*c* at its opposite ends. Complementing the adjustment plate is a swing plate 38 extending along side the adjustment plate laterally from a weld connection to the left end of the extension tube 26 At its outer end the swing plate 38 is formed with a retaining hook 38*a* doubling back around the toothed edge portion of the adjustment plate. This hooked portion 38*a* has a pair of aligned radially-extending slots 39 receiving a latching finger 40 extending through the slots integrally from the outer end of a link 41 of round bar stock having its inner end bent to provide an integral pin 42 passing through a hole in a crank 43. This crank projects through a side opening in the extension tube 26 from a rocker shaft 44 extending along the inside of the extension tube 26. This rocker shaft has its ends passing through openings in a pair of inserts 46 which are welded to the inner ends of the stub shafts 26*a*, 26*b* and to the extension tube 26 Adjacent its right end the rocker shaft 44 has a second crank 46 extending through a respective side opening in the extension tube to pivotally connect via an intermediate link 48 with a generally U-shaped handle 50 The handle is swing-mounted for up and down swinging movement by right and left trunnion portions 50*a*–50*b* passing through holes in laterally spaced side walls of the bracket 25 The handle continues rearwardly beyond the trunnion 50*b* as a lever 51. This lever and the crank 56 have holes therethrough receiving bent end portions 48*a*, 48*b* on the link 48 A tension spring 49 is anchored at one end on an ear mounted on the bracket 25 and has its other end hooked over the link 48 adjacent the outer end portion 48*a* of the link so as to bias the handle 50 downwardly toward the bracket 25

With the described mechanism interconnecting the adjustment handle 50 and the latching finger 40 it is seen that manually swinging the handle upwardly causes the lever 51 to swing downwardly in opposition to the spring 49 and thereby pull on the link 48 such that the crank 46 responsively is swung downwardly The resulting turning of the rocker shaft 44 in the clockwise direction when viewed from the right end, swings the crank 43 at the left end of the rocker shaft downwardly and this motion pushes on the link 41 such that the latching finger 40 is moved outwardly to the outer end of the slots 39 In this outer position the latching finger 40 is radially outward of the teeth in the adjustment plate 33 The press arm unit 24 is then free to be swung to the desired starting position resulting in swinging of the swing plate 38 and latching finger 40 relative to the adjustment plate 33 The adjustment handle 50 is then released causing the latching finger 40 to retract in the slots 39 and mesh between the adjacent teeth 33*a* on the adjustment plate 33, thereby coupling the swing plate 38 and adjustment plate 33 together. The press arm unit 24 can be lowered to a substantially vertical out of the way position as indicated by the broken line position in FIG 2, in which the latching finger engages the stop ear 33*c* on the adjustment plate 33 The other stop ear 33*b* limits upward movement of the press arm unit during adjustment of its starting position.

From the foregoing it is seen that upward swinging of the press arm unit 24 from the selected starting position in performing a press exercise results in forward and upward swinging of the cam strip 35 by connection of the press arm unit therewith via the extension tube 26, swing plate 38, latching finger 40, adjustment plate 33, and lever arm 32. As shown in FIG 6B, such movement of the cam strip 35*a*, results in tensioning of a press cable 52 positioned in a keyhole slot at the outer end of a brace 35*a* for the cam strip and having a ball stop 53 engaging the brace This press cable 52 is part of a reeving system connected to the top of the selector rod 17*b* passing downwardly through the stack

of weight plates in the weight stack unit 17. Hence, upward swinging of the press arm unit 24 is resisted by the selected load of weight plates in the weight stack.

The reeving system is shown schematically in FIG. 5 and includes a high pull cable 56, a low pull cable 57 and a butterfly cable 58. The high pulley cable 56 extends upwardly from the weight stack to a pulley 60 at the top of the frame, then loops downwardly under the upper pulley 62*a* of a double floating pulley assembly 62 and up to a single fixed pulley 64, and then over a high outreach pulley 65 in the outreach channel 10*k*. The cable 56 has a stop ball 66 adjacent its upper outer end limiting retraction of the cable and has a connector ball 67 at its upper end for interfitting with a pull bar 68. The low pulley cable 57 has a connector ball 70 at its lower outer end and a stop ball 71 adjacent the connector ball. The low pull cable 57 engages a low pulley 72 swivel mounted on the base beneath the weight stack, travels upwardly and over the lower pulley 62*b* of the double floating pulley 62, and loops downward around a single floating pulley 73. From the latter the cable 57 travels upwardly and over an adjustable pulley 74 and downwardly to connect with a hanger 75*a* carrying a floating pulley 75. This pulley 75 has the butterfly cable 58 looped thereover. The butterfly cable has one branch 58*a* passing through the tubular brace 11*a* via a first bottom guide pulley 76 in a cutout adjacent the corner column 10*a*, and then has a terminal ball 58*c* connecting to one of the cam units 18—18'. A second branch 58*b* of the butterfly cable 58 passes over guide pulleys 77–78 in cutouts adjacent opposite ends of the brace 11*a* and has a terminal ball 48*d* connected to the other cam unit. The press cable 52 is connected at an end to the frame 73*a* of the floating pulley 73, passes under a guide pulley 80 on the corner column 10*a* and terminates at stop ball 53 connecting the press cable to the cam strip 35.

When the high pull cable 56 is tensioned by an exercise load applied to the connector 67 the high pull cable 56 responsively applies an upward force on the double floating pulley unit 62 and this is resisted by the ball 71 on the low pull cable 57, the ball 53 on the press cable 52 with the stop rod 37 engaging the corner column 10*a*, and the limitation on backward swing of the butterfly arms. As a result of limiting of the upward movement of the double floating pulley unit 62 the high pulley cable 56 can only move by pulling up the selected weight load. Similarly, when the low pull cable 57 is tensioned by an exercise load applied to the connector ball 70 such as by a pull bar (not shown) responsive movement can only occur at the double floating pulley unit 62, and namely downward movement of the double floating pulley unit 62 as permitted by upward movement of the selected weight load the same distance that the low pull cable 57 is advanced. When the press arm unit 24 is swung upwardly the floating pulley 73 and double floating pulley unit 62 move downwardly, thereby raising the selected weight loads. Lastly, when the butterfly arms are swung forwardly, the pulley 75 is pulled downwardly and this causes the double floating pulley unit 62 to be pulled downwardly thereby raising the selected weight by the cable 56. Adequate space is provided between the corner column 10*a* and the cross-member 34 to accommodate the floating pulley 73 and associated cables 57 and 52.

The bench 15 is used as a multi-position support when positioned at the press station 13 and as a leg exerciser when positioned in a generally diagonal position extending from the corner frame 10 between the press and butterfly stations 13–14. The bench frame includes a seat section 80, front leg section 81, foot section 82 at the bottom of the front leg section, a front upstanding post 83 on the seat section, and a rearwardly sloping leg section 84 extending from the back of the seat section to a rear handle 86 in the form of an upwardly projecting post resting on a ground-engaging flat foot 87 projecting to the left. A stop arm 88 reaches out to the right from the handle 86. A back rest section 90 is swing-mounted at its forward end at a pivot 91 at the rear of the seat section 80 and has an adjustment strut 92 extending downwardly therefrom at a pivot 93 to assume selected positions interfitting with holes (not shown) along the bottom of the sloping rear leg section 84 for supporting the back rest section in a horizontal position and various sloped positions. The bench frame also has a horizontal rung 94 extending between the legs 81, 84 and presenting a downwardly facing channel track. Padded cushions are mounted on the seat and back frame sections 80, 90.

The leg developer 16 is swing mounted at the upper end of the front post 83 and includes a center swing leg 96 having padded leg engagement arms 97 adjacent its outer end.

A cam strip 98 is provided on support elements 99*a*, 99*b* which are interconnected by a linkage 100 to the swing leg 96 so that when the swing leg is swung upward the cam strip also swings upwardly to tension an extension cable 101. This cable 101 has a terminal portion fitting into a keyhole slot at the forward end of the cam strip 98 and held by a ball stop on the cable. The extension cable 101 is connected at its rear end to a connector 102 having a keyhole slot for receiving the ball 70 at the end of the low cable 57. The linkage 100 permits the swing leg 96 and related padded arms 97 to be alternatively positioned in raised or lowered exercise positions. The extension cable 101 is not used when the bench 15 is used in conjunction with the press station 13.

The outrigger 11*b* at the press station has at its outer end an offset to the left provided with a positioning post preferably in the form of a roller 104 for interfitting with the channel track at the bottom of the bench rung 94. The channel track is interrupted by an opening part way along its left side near the rear of the rung 94 so that if the bench is pulled outwardly somewhat from a normal use position it can be swung to the left at its forward end to easily free the bench from the roller 104 and move it all or part way from the normal exercise area.

When the bench is in its generally diagonal position for using the leg exercising mechanism at its outer end, the rear upright handle 86 occupies an offset 105 at the outer end of a diagonal ground-engaging extension member 106 bolt-connected to the base member 10*e* of the corner frame. The offset 105 is at the left side of a socket element 106*a* on the outer end of the extension member 106. This socket element is preferably raised above the ground level such that the flat foot 87 at the rear of the bench can occupy a position beneath the socket element when the adjoining bench handle 86 occupies the offset 105.

When high pull or low pull exercises are to be performed it is preferred to have the exerciser stand on a portable platform 108 placed in front of the corner frame and presenting a round positioning element 109 fitting into the socket element 106*a*. With this platform arrangement the weight of the exerciser aids in resisting tilting of the exercise machine while exercises are being performed. In this latter regard, when the bench 15 is being used it is normally positioned on the roller 104 in the manner previously described. As a result, the weight of the exercising person occupying the bench assists in resisting tilting of the exercise machine responsive to exercising forces exerted to lift the selected amount of weight from the weight stack. The

outreach position of the roller **104** provides good leverage for the exerciser's weight.

The described machine can be compactly shipped in knock-down condition in a form making assembly relatively easy, particularly as respects the reeving system. For example, the left brace member **12***a* can be supplied as a unit with the pulleys **75**, **76**, **77** and **78** and the cable **58**, by use of a ball/keyhole slot connection the cable **57** and the hanger **75***a* for the pulley **75** as well as between the ends of the cable **58** and the cam strips at the butterfly station

Referring to FIG **12**, an alternative press arm arrangement is shown in which a pair of press arms **124** are pivotally mounted at a respective pivot **126** on the member **25** for left and right swinging movement The handles **125** for the arms **124** extend toward one another During press exercises the exercising person pushes up on the arms **124** as before but can also move the arms out or in while pushing up on the arms. This can permit a more natural pushing motion

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims

I claim.

1 A multi-station exercise machine for operating in a corner area comprising

a frame assembly having a rear upright corner frame and frame extensions extending as first and second wings from said corner frame in respective first and second vertical wing planes which are in generally perpendicular relationship to one another at the rear of the corner area, said frame assembly having a ground engaging outrigger projecting by an outer end into said corner area,

high pull and low pull exercise stations facing said area and located at the top and bottom, respectively of said corner frame so as to be arranged to be used by an exerciser occupying said area,

a butterfly exercise station mounted at the outer end of said first wing to occupy a position entirely within said corner area, said butterfly exercise station including a seat extending into said area in generally parallel relation to said second wing plane and including two butterfly arms arranged to swing over said area about vertical swing axes within said area,

a press exercise station at the outer end of said second wing and including a press arm arranged to swing within a swing range entirely over said area about a horizontal swing axis which is perpendicular to said first wing plane,

a bench in said area partly seated on said outrigger and adjustable in position horizontally at one end relative to said outrigger;

a weight load at said corner frame,

and a pulley and cable system mounted on said frame assembly and continuously operatively connecting said exercise stations with said load whereby said load is moved responsive to performance of the respective exercises at said exercise stations.

2. An exercise machine according to claim **1** in which said bench has leg exercising apparatus at an outer end thereof to be operated in said area when the opposite end of the bench has a position adjacent said corner frame with the bench extending outwardly in said area between said wings clear of said seat, said leg exercising apparatus having an extension cable detachably connected to said pulley and cable system adjacent said low pull exercise station for connecting said apparatus with said load, said bench having an alternate position in said area in which its said opposite end is adjacent said press exercise station and the bench is in generally parallel relation to said first wing plane to be occupied by an exercising person at the press exercise station

3. An exercise machine according to claim **2** in which said outrigger is arranged to be seated upon by said bench when the bench is in either of its positions

4 An exercise machine according to claim **1** in which said bench is positioned in said corner area to extend from said press station in generally parallel relation to said first wing and spaced from said seat, said bench engaging said outrigger adjacent the outer end of the outrigger

5 An exercise machine according to claim **4** in which said bench has an alternative position in said corner area to extend from said corner frame between said wings and beyond said seat, said bench having a leg exercising apparatus optionally connectable to said pulley and cable system by a cable extension at said low pull station.

6 An exercise machine according to claim **4** in which said bench has leg exercising apparatus at an outer end remote from said corner frame said bench having an alternate position in said corner area extending from said corner frame between said wings and clear of said seat, for use of said leg exercising apparatus, and means for extending said system to said leg exercising apparatus

7 An exercise machine according to claim **1** in which said outrigger extends at the outer end of the second wing into said area at ground level in generally parallel relation to said first wing

8 A multi-station exercise machine comprising

a frame assembly having a corner frame section and having first and second wing sections extending in generally perpendicular relation to one another and defining the rear of a corner exercise area,

a press exercise apparatus mounted on said first wing to operate entirely in said area,

a second exercise apparatus mounted on said second wing to operate entirely in said area,

high pull and low pull stations in said area at the top and bottom, respectively, of said corner section,

a weight load at said corner section;

and a pulley and cable system carried by said frame assembly and including

a high pull cable extending between said high pull station and said load,

a low pull cable extending between said low pull station and a first floating pulley,

a double floating pulley unit having an upper pulley engaged by said high pull cable and a lower pulley engaged by said low pull cable,

a second exercise cable passing over said first floating pulley and extending to said second exercise apparatus,

a second floating pulley having said low pulley cable passing thereunder;

and a press cable extending downwardly from said second floating pulley under a guide pulley mounted on said corner frame section and then extending forwardly to said press exercise apparatus, said second floating pulley having a vertical travel range adjacent said corner frame section,

said press exercise apparatus including

a press arm,

an elongated horizontal tube fixed to said press arm and mounted at an outer end on said first wing and mounted at an inner end on said corner frame section to turn about its longitudinal axis responsive to up and down swinging movement of said press arm,

a swing-mounted cam unit interconnected with said tube adjacent its said inner end and connected to said press cable such that said cam unit engages and causes tensioning of the press cable responsive to upward swinging of said press arm and responsive forward swinging of the cam unit,

and a stop element extending between said cam unit and said corner frame section for limiting swing movement of said cam unit responsive to tensioning of said press cable when said high pull station low pull station or second exercise unit are used, said stop element extending adjacent the portion of said press cable which is between said second floating pulley and said guide pulley

9 An exercise machine according to claim 8 in which said tube is interconnected with said cam unit via an adjustment mechanism carried by said frame assembly for varying the swing range of said press arm, said adjustment mechanism including a rocker shaft extending within said tube from a position adjacent to said press arm to a position adjacent said corner frame section

10 An exercise machine according to claim 8 in which said pulley and cable system includes a low pulley engaged by said low pull cable and mounted near the base of said corner frame section, said low pull cable having an extension,

said exercise machine also having a bench carrying an exercise device detachably connected to said extension, said bench having alternative positions in said area extending from said corner frame section or from said press exercise apparatus at said first wing.

11 A multi-station exercise machine for operating in a corner area comprising

a frame assembly having a rear upright corner frame and frame extensions extending as first and second wings from said corner frame in generally perpendicular relationship to one another, first and second exercise apparatus at the top and bottom, respectively of said corner frame and arranged to be used by an exerciser occupying said area,

third and fourth exercise apparatus mounted at the outer end of said first and second wings, respectively, and arranged to be used by a exerciser occupying said area,

a weight load at said corner frame,

a pulley and cable system mounted on said frame assembly and continuously operatively connecting all four of said exercise apparatus with said load whereby said load is moved responsive to operation of each exercise apparatus,

a ground engaging outrigger on said second wing extending into said area,

a bench having a fifth exercise apparatus at an outer end thereof to be operated when an inner end of the bench is positioned at a first position adjacent said corner frame with the bench extending outwardly into said corner area approximately midway between said wings, said bench having an alternative second position in which its said inner end is adjacent said fourth exercise apparatus and the bench is in generally parallel relation to said first wing;

said bench interfitting with said outrigger at an interfit position in said area outwardly of said fourth exercise apparatus when said bench is in either of said first and second positions, and

an extension cable on said fifth exercise apparatus detachably connected to said pulley and cable system adjacent said second exercise apparatus for connecting said fifth exercise apparatus with said load.

12. An exercise machine according to claim 11 in which said interfit between said bench and outrigger comprises an upstanding roller on said outrigger at said interfit position and a downwardly facing channel along part of the length of said bench

13. An exercise machine according to claim 11 in which said bench overlies an outer end portion of said outrigger whereby the weight of an exerciser occupying such bench assists in resisting tilting of said frame assembly

14. An exercise machine according to claim 11 in which said third and fourth exercise apparatus comprise butterfly exercise apparatus and press exercise apparatus respectively, and

said butterfly exercise apparatus includes a seat in said area

15 An exercise machine comprising

a cornerframe section,

first and second wing frame sections connected to said corner frame section and extending in perpendicular relation to one another,

said first section having a ground engaging outrigger remote from said corner frame section,

a bench engaging said outrigger to assist in keeping the outrigger in ground engagement when the bench is occupied by an exercising person,

an extension member having a rotary axis and journal mounted at inner and outer ends, respectively, on said corner section and first wing frame section to turn on said axis;

a press arm mounted on an outer end portion of said member to swing over said bench,

a swing member mounted on an inner end portion of said member to swing responsive to swinging of said press arm;

an adjustment plate beside said swing member and mounted to swing on said rotary axis

a latching finger extending through a slot in said swing member to selectively latch said adjustment plate when said latching finger is in a latching position at an inner end of said slot and to disengage from said adjustment plate when said latching finger is at an outer end of said slot,

an adjustment lever adjacent said press arm adapted to be swung between engaged and disengaged positions,

a linkage mechanism between said lever and said finger for selectively moving said finger in said slot relative to movement of said lever,

a load,

and a load transfer mechanism between said load and adjustment plate for moving said load responsive to operation of said press arm when said finger is in said latching position.

16. An exercise machine according to claim 15 in which said load transfer mechanism includes a cam coupled to said adjustment plate, and a pulley and cable system interconnecting said load and cam and including a cable arranged to wrap on said cam responsive to swinging movement of said adjustment plate in a direction opposed by said load.

* * * * *

EXHIBIT C

UNITED STATES PATENT AND TRADEMARK OFFICE

TESS was last updated on Tue May 13 04 16 28 EDT 2003

LOGOUT Please logout when you are done to release system resources allocated for you

Record 1 out of 1

CHECK STATUS *(TARR contains current status, correspondence address and attorney of record for this mark. Use the "Back" button of the Internet Browser to return to TESS)*

Typed Drawing

Word Mark	VECTRA
Goods and Services	IC 028 US 022 G & S MULTI-STATION EXERCISE MACHINES FIRST USE. 19870917 FIRST USE IN COMMERCE 19870917
Mark Drawing Code	(1) TYPED DRAWING
Serial Number	73748358
Filing Date	August 25, 1988
Published for Opposition	January 24, 1989
Registration Number	**1535505**
Registration Date	April 18, 1989
Owner	(REGISTRANT) VECTRA FITNESS, INC. CORPORATION WASHINGTON 15130 N E 90TH STREET REDMOND WASHINGTON 98052
Attorney of Record	RICHARD W SEED
Type of Mark	TRADEMARK
Register	PRINCIPAL
Affidavit Text	SECT 15 SECT 8 (6-YR)
Live/Dead Indicator	LIVE

Thank you for your request. Here are the latest results from the TARR web server.

This page was generated by the TARR system on 2003-05-13 19 02 03 ET

Serial Number: 73748358

Registration Number: 1535505

Mark (words only): VECTRA

Current Status: Section 8 and 15 affidavits have been accepted and acknowledged

Date of Status: 1995-05-18

Filing Date: 1988-08-25

Registration Date: 1989-04-18

Law Office Assigned: TMEO Law Office # 1

If you are the applicant or applicant's attorney and have questions about this file, please contact the Trademark Assistance Center at TrademarkAssistanceCenter@uspto.gov

Current Location: 900 -Warehouse (Newington)

Date In Location: 1995-06-27

CURRENT APPLICANT(S)/OWNER(S)

---

1 VECTRA FITNESS, INC

Address:
VECTRA FITNESS, INC
15130 N E 90TH STREET
REDMOND, WA 98052
United States
State or Country of Incorporation: Washington
Legal Entity Type: Corporation

GOODS AND/OR SERVICES

MULTI-STATION EXERCISE MACHINES
International Class: 028
First Use Date: 1987-09-17
First Use in Commerce Date: 1987-09-17

Basis: 1(a)

ADDITIONAL INFORMATION

(NOT AVAILABLE)

PROSECUTION HISTORY

1995-05-18 - Section 8 (6-year) accepted & Section 15 acknowledged

1994-08-26 - Section 8 (6-year) and Section 15 Filed

1989-04-18 - Registered - Principal Register

1989-01-24 - Published for opposition

1988-12-27 - Notice of publication

1988-12-24 - Notice of publication

1988-11-17 - Approved for Pub - Principal Register (Initial exam)

1988-11-02 - Case file assigned to examining attorney

CONTACT INFORMATION

Correspondent (Owner)
RICHARD W SEED (Attorney of record)

RICHARD W SEED
SEED AND BERRY
6300 COLUMBIA CENTER
SEATTLE, WA 98104-7092
United States

EXHIBIT D

VECTRA FITNESS

March 12, 1999

Joe Alter
Club Source, Inc.
717 Fellowship Road
Suites C, D, & E
Mt Laurel, NJ 08054

Dear Mr Alter:

You are using Vectra's copyrighted images, designs, and logo and Vectra's trademark without Vectra's authorization Accordingly, your use is for the purpose of perpetrating unfair trade practices and falsely representing to others that you are an authorized dealer of Vectra's products

Vectra has been seriously damaged by your actions Unless you immediately cease and desist from the activity mentioned above and remove Vectra's images (photos and weight stack design), logo, and trademark from your web site, we will commence legal action against you

Sincerely,

Joe Sanchez
General Counsel

EXHIBIT E

VECTRA FITNESS

May 3, 1999

Joe Alter
Club Source, Inc
717 Fellowship Road
Suites C, D, & E
Mt Laurel, NJ 08054

VIA CERTIFIED MAIL

Dear Mr. Alter

While we are pleased that Professional Web Concepts removed our copyrighted images from your web site upon notification, you persist in engaging in false and misleading advertising practices

We ask that you do not represent yourself as an authorized Vectra dealer. We request that you remove all mention of Vectra and its products from your web site Your continued engagement in false and misleading advertising will lead us to seek legal remedy

Sincerely,

Joe Sanchez
General Counsel

SENDER

- Complete items 1 and/or 2 for additional services
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee)

1 ☐ Addressee's Address
2 ☐ Restricted Delivery

Consult postmaster for fee

3 Article Addressed to

JOE ALTER
CLUB SOURCE, INC.
717 FELLOWSHIP RD. # C, D, E
MT. LAUREL, NJ 08054

4a Article Number
Z 436 894 172

4b Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7 Date of Delivery
5/6

5 Received By (Print Name)

8 Addressee's Address (Only if requested and fee is paid)

6 Signature (Addressee or Agent)
X

PS Form **3811**, December 1994 102595 98 B 0229 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service

JS 44 (Rev 3/99)

CIVIL COVER SHEET C03-1092

The JS-44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM)

I **(a) PLAINTIFFS**
VECTRA FITNESS, INC ,
a Washington corporation

(a) County of Residence of First Listed Plaintiff King
(EXCEPT IN U S PLAINTIFF CASES)

DEFENDANTS
INTERNETFITNESS, INC , d/b/a SMOOTHFITNESS, d/b/a/
HOMEGYMBYNET, a Delaware corporation

County of Residence of First Listed
(EXCEPT IN U S PLAINTIFF CASES)
NOTE IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED

FILED ENTERED
LODGED RECEIVED
MAY 14 2003 KN
AT SEATTLE
CLERK U S DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
BY DEPUTY

(b) Attorney's (Firm Name, Address, and Telephone Number)
Paul T Meiklejohn
Dorsey & Whitney LLP 1420 Fifth Avenue, Suite 3400, Seattle, WA 98101
206-903-8800,

Attorneys (If Known)

II ***BASIS OF JURISDICTION*** *(Place an "X" in One Box Only)*

- ☐ 1 U S Government Plaintiff
- ☒ 3 Federal Question (U S Government Not a Party)
- ☐ 2 U S Government Defendant
- ☐ 4 Diversity (Indicate Citizenship of Parties in Item III)

III ***CITIZENSHIP OF PRINCIPAL PARTIES*** *(Place an "X" in One Box for Plaintiff and One Box for Defendant)*
(For Diversity Cases Only)

	DEF		DEF
Citizen of This State	☐ 1	☐ 1 Incorporated or Principal Place of Business In This State	☐ 4 ☐ 4
Citizen of Another State	☐ 2	☐ 2 Incorporated or Principal Place of Business In another State	☐ 5 ☐ 5
Citizen or Subject of a Foreign Country	☐ 3	☐ 3 Foreign Nation	☐ 6 ☐ 6

IV **NATURE OF SUIT** *(Place an "X" in One Box Only)*

CONTRACT
- ☐ 110 Insurance
- ☐ 120 Marine
- ☐ 130 Miller Act
- ☐ 140 Negotiable Instrument
- ☐ 150 Recovery of Overpayment & Enforcement of Judgment
- ☐ 151 Medicare Act
- ☐ 152 Recovery of Defaulted Student Loans (Excl Veterans)
- ☐ 153 Recovery of Overpayment of Veteran's Benefits
- ☐ 160 Stockholders' Suits
- ☐ 190 Other Contract
- ☐ 195 Contract Product Liability

REAL PROPERTY
- ☐ 210 Land Condemnation
- ☐ 220 Foreclosure
- ☐ 230 Rent Lease & Ejectment
- ☐ 240 Torts to Land
- ☐ 245 Tort Product Liability
- ☐ 290 All Other Real Property

TORTS

PERSONAL INJURY
- ☐ 310 Airplane
- ☐ 315 Airplane Product Liability
- ☐ 320 Assault, Libel & Slander
- ☐ 330 Federal Employers Liability
- ☐ 340 Marine
- ☐ 345 Marine Product Liability
- ☐ 350 Motor Vehicle
- ☐ 355 Motor Vehicle Product Liability
- ☐ 360 Other Personal Injury

PERSONAL INJURY
- ☐ 362 Personal Injury—Med Malpractice
- ☐ 365 Personal Injury —Product Liability
- ☐ 368 Asbestos Personal Injury Product Liability

PERSONAL PROPERTY
- ☐ 370 Other Fraud
- ☐ 371 Truth in Lending
- ☐ 380 Other Personal Property Damage
- ☐ 385 Property Damage Product Liability

CIVIL RIGHTS
- ☐ 441 Voting
- ☐ 442 Employment
- ☐ 443 Housing/ Accommodations
- ☐ 444 Welfare
- ☐ 440 Other Civil Rights

PRISONER PETITIONS
- ☐ 510 Motions to Vacate Sentence Habeas Corpus
- ☐ 530 General
- ☐ 535 Death Penalty
- ☐ 540 Mandamus & Other
- ☐ 550 Civil Rights
- ☐ 555 Prison Condition

FORFEITURE/PENALTY
- ☐ 610 Agriculture
- ☐ 620 Other Food & Drug
- ☐ 625 Drug Related Seizure of Property 21 USC
- ☐ 630 Liquor Laws
- ☐ 640 R R & Truck
- ☐ 650 Airline Regs
- ☐ 660 Occupational Safety/Health
- ☐ 690 Other

LABOR
- ☐ 710 Fair Labor Standards Act
- ☐ 720 Labor/Mgmt Reporting & Disclosure Act
- ☐ 740 Railway Labor Act
- ☐ 790 Other Labor
- ☐ 791 Empl Ret Inc Security Act

BANKRUPTCY
- ☐ 422 Appeal 28 USC 158
- ☐ 423 Withdrawal 28 USC 157

PROPERTY RIGHTS
- ☐ 820 Copyrights
- ☒ 830 Patent
- ☐ 840 Trademark

SOCIAL SECURITY
- ☐ 861 HIA (1395ff)
- ☐ 862 Black Lung (923)
- ☐ 863 DIWC/DIWW (405(g))
- ☐ 864 SSID Title XVI
- ☐ 865 RSI (405(g))

FEDERAL TAX SUITS
- ☐ 870 Taxes (U S Plaintiff or Defendant)
- ☐ 871 IRS—Third Party 26 USC 7609

OTHER STATUTES
- ☐ 400 State Reapportionment
- ☐ 410 Antitrust
- ☐ 430 Banks and Banking
- ☐ 450 Commerce/ICC Rates/etc
- ☐ 460 Deportation
- ☐ 470 Racketeer Influenced and Corrupt Organizations
- ☐ 810 Selective Service
- ☐ 850 Securities /Commodities/ Exchange
- ☐ 875 Customer Challenge
- ☐ 892 Economic Stabilization Act
- ☐ 893 Environmental Matters
- ☐ 894 Energy Allocation Act
- ☐ 895 Freedom of Information Act
- ☐ 900 Appeal of Fee Determination Under Equal Access to
- ☐ 950 Constitutionality of State Statutes
- ☐ 890 Other Statutory Actions

(PLACE AN "X" IN ONE BOX ONLY)

V **ORIGIN**

☒ 1 Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from another district (specify) ☐ 6 Multidistrict Litigation ☐ 7 Appeal to District Judge from Magistrate Judgement

VI **CAUSE OF ACTION** (Cite the U S Civil Statute under which you are filing and write brief statement of cause
Do not cite jurisdictional statutes unless diversity)

35 U S C § 1 et seq - Patent Infringement

VII **REQUESTED IN COMPLAINT** ☐ CHECK IF THIS IS A **CLASS ACTION** UNDER F R C P 23 **DEMAND** $ CHECK YES only if demanded in complaint
JURY DEMAND ☒ Yes ☐ No

VIII **RELATED CASE(S) IF ANY** (See instructions)
JUDGE Rothstein and Lasnik DOCKET NUMBER C02-0635R and CV03-0812L

DATE May 14, 2003 SIGNATURE OF ATTORNEY OF RECORD Paul T. Meiklejohn

FOR OFFICE USE ONLY
RECEIPT # AMOUNT APPLYING IFP

H \Trial\Client Matters\Vectra\Sedona Homegym-InternetFitness\Pleadings\Civil Cover Sheet USDC doc

ORIGINAL