United States Patent

Proctor

[15] **3,640,525**

[45] **Feb. 8, 1972**

[54] FRICTIONAL RESISTANT-TYPE EXERCISE MACHINE WITH WAIST-LEVEL-MOUNTED OSCILLATABLE HANDGRIPS

[72] Inventor: **Richard I. Proctor,** 7245 Morningside Drive, Loomis, Calif. 95650

[22] Filed: **Sept. 8, 1969**

[21] Appl. No.: **856,040**

[52] **U.S. Cl.** .....**272/79 R,** 272/DIG. 3

[51] **Int. Cl.** **A63b 23/00**

[58] **Field of Search** .....272/79 R, 80, 72, DIG. 3, DIG. 4; 128/25

[56] **References Cited**

UNITED STATES PATENTS

Re18,273	12/1931	Freer	272/DIG. 3
3,013,799	12/1961	Wise	272/79 R
3,400,793	9/1968	Norris et al.	272/79 R

FOREIGN PATENTS OR APPLICATIONS

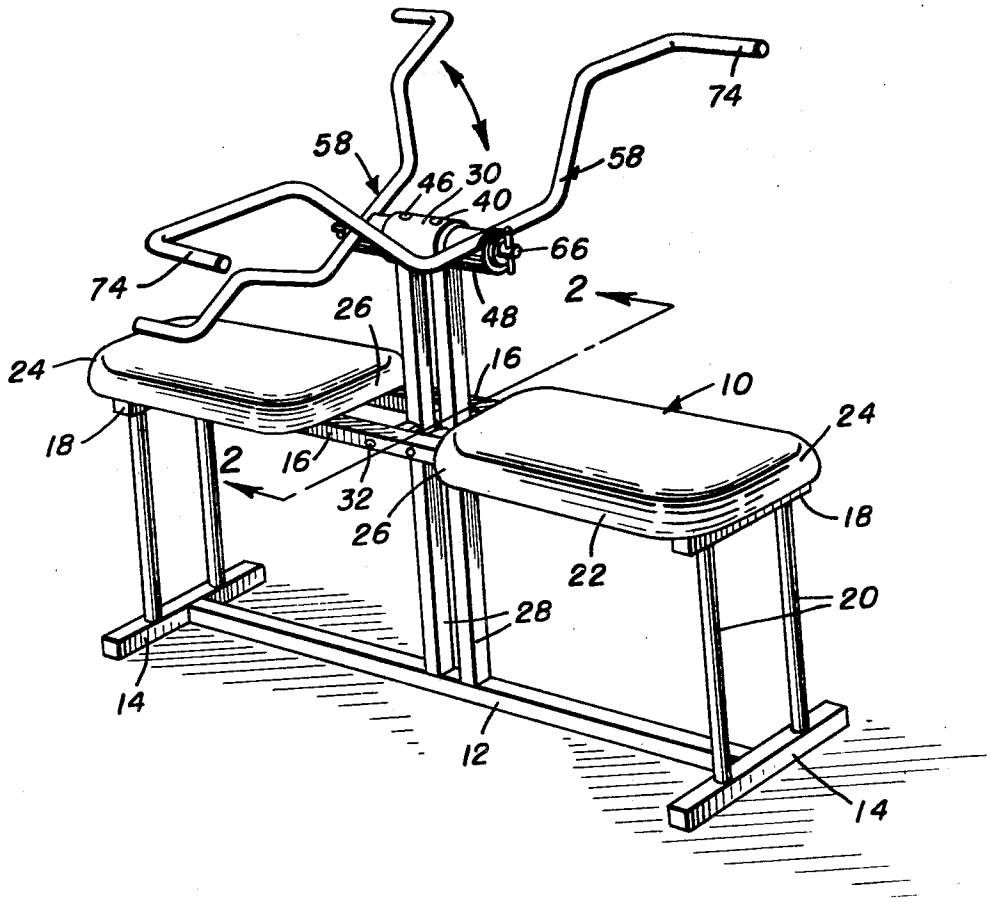
1,153,143	5/1969	Great Britain	272/79 R

Primary Examiner—Richard C. Pinkham
Assistant Examiner—William R. Browne
Attorney—Clarence A. O'Brien and Harvey B. Jacobson

[57] **ABSTRACT**

An exercise apparatus including a seat structure defining front and rear portions and including a standard portion projecting upwardly from the rear portion thereof from which a generally horizontally disposed transverse handle bar including forwardly directed end portions is supported at a generally central location for oscillation about a horizontal axis extending in front-to-rear direction in a direction intersecting a user seated on the seat structure. The handle bar and its axis of oscillation are disposed at an elevation relative to the seat structure so as to generally correspond to the elevation of the waist of a person seated on the seat structure.

10 Claims, 6 Drawing Figures

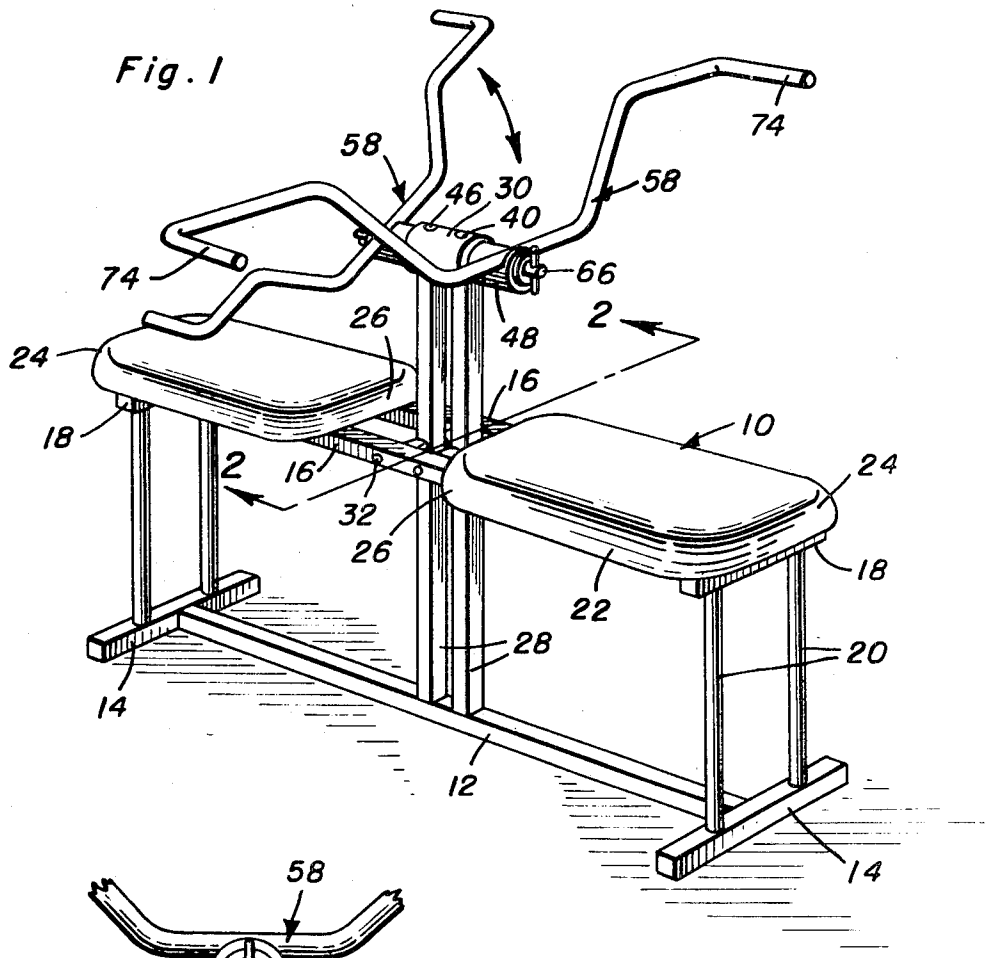


PATENTED FEB 8 1972

3,640,525

SHEET 1 OF 2

Fig. 1



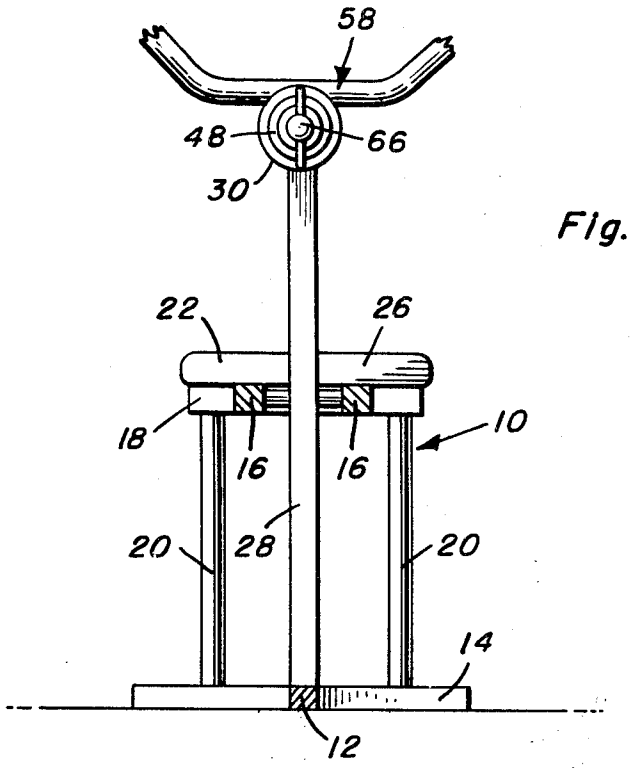


Fig. 2

Richard I. Proctor

INVENTOR

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Fig. 3

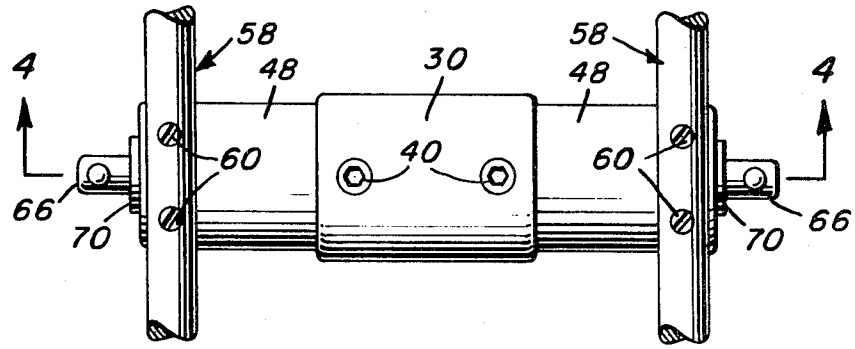


Fig. 4

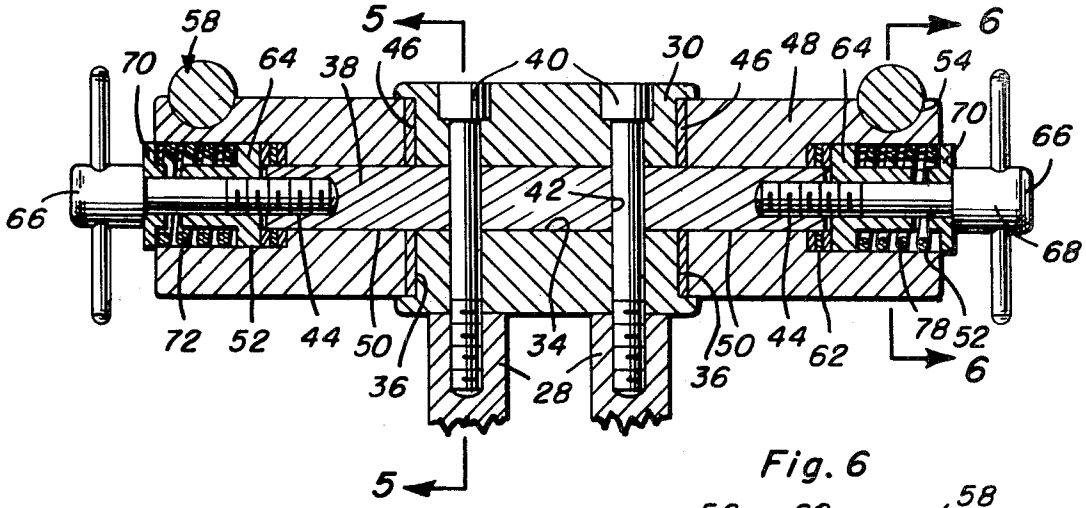


Fig. 5

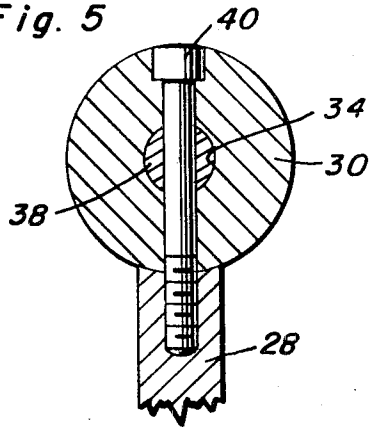
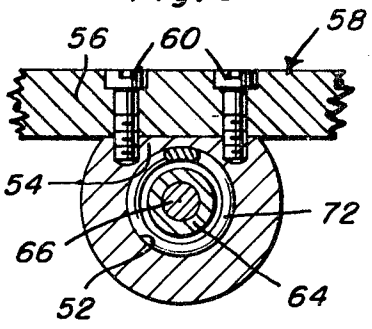


Fig. 6



Richard I. Proctor

INVENTOR.

BY Thomas A. O'Brien and Harvey B. Jacobson

Attorneys

FRICTIONAL RESISTANT-TYPE EXERCISE MACHINE WITH WAIST-LEVEL-MOUNTED OSCILLATABLE HANDGRIPS

The exercise or side bend machine of the instant invention has been designed to provide a means whereby the internal and external oblique muscles of the sides of the waist may be thoroughly exercised. In addition, the side bend machine is operative to tighten, firm and tone the oblique muscles and it is also beneficial in the reduction of excess fatty tissue which usually accumulates in the waist area on overweight individuals.

The exercise machine of the instant invention is hereinafter described in detail as a tandem machine with certain components thereof being duplicated for simultaneous use by two persons. However, the exercise machine may also be readily constructed so as to accommodate only one person.

The exercise machine includes an elongated benchlike seat structure having front and rear ends and which is adapted to be sat upon by a person wishing to use the machine. The user of the machine sits upon the seat structure at the rear end thereof with the upper portions of his legs extending along the seat structure toward the front end thereof. The lower legs of the user are bent downwardly at the knees in vertical position forward of the forward end of the seat structure and the user's feet rest upon the supporting surface upon which the seat structure rests. The rear of the seat structure includes an upright having a mounting portion disposed generally at waist level from which a transverse handlebar assembly is oscillatably supported for swinging about a horizontal axis extending in front-to-rear direction relative to the seat structure. The handlebar assembly includes forwardly directed opposite end portions for gripping by the hands of the user and the opposite end arms of the handlebar from which the handgrips are supported are contoured and slightly forwardly convergent in a manner such that the user of the exercise machine, with his hands engaged with the handgrips, may rest his arms upon the opposite end arm portions of the handlebar. A friction drag assembly is provided in the mounting of the handlebar and is adjustable whereby a varied amount of friction may be applied to resist oscillation of the handlebar.

The main object of this invention is to provide an exercise machine by which persons may thoroughly exercise internal and external oblique muscles of the sides of the waist.

Another object of this invention is to provide an exercise machine which may be utilized to reduce the excess fatty tissue which usually accumulates in the waist area of overweight individuals.

Another important object of this invention is to provide an exercise machine in accordance with the preceding objects and including adjustable friction resistance means whereby the movable component of the exercise machine may have varied amounts of resistance to its movement applied thereto.

A final object of this invention to be specifically enumerated herein is to provide an exercise machine which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view of the exercise machine of the instant invention;

FIG. 2 is a fragmentary enlarged vertical sectional view taken substantially upon the plane indicated by the section line 2–2 of FIG. 1;

FIG. 3 is a fragmentary top plan view of the handlebar-mounting portion of the exercise machine;

FIG. 4 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 4—4 of FIG. 3;

FIG. 5 is a fragmentary transverse vertical sectional view taken substantially upon the plane indicated by the section line 5–5 of FIG. 4; and

FIG. 6 is a fragmentary transverse vertical sectional view taken substantially upon the plane indicated by the section line 6–6 of FIG. 4.

Referring now more specifically to the drawings, the numeral **10** generally designates the exercise machine of the instant invention. The machine **10** includes a support frame including a lower center longitudinal member **12** interconnecting a pair of opposite end transverse members **14** at their midportions. A pair of upper opposite side longitudinal members **16** are provided and interconnected at corresponding ends by means of a pair of upper transverse members **18**. Each of the transverse members **18** is supported from its opposite ends by the upper ends of a pair of uprights **20** whose lower ends are secured in any convenient manner to the opposite ends of the corresponding lower transverse member **14**.

A pair of tandem seat structures **22** including front and rear ends **24** and **26** are secured to the opposite ends of the upper opposite side longitudinal members **16** and the corresponding upper transverse members **18** in any convenient manner. In addition, a pair of closely spaced uprights **28** have their lower ends supported from longitudinally spaced central portions of the longitudinal member **12** and their upper ends are interconnected by means of a mounting sleeve structure **30**. The uprights **28** pass between and are secured to the opposite side longitudinal members **16** by means of suitable fasteners **32**. Further, the uprights **28** extend between the adjacent rear ends **26** of the seat structures **22**.

The sleeve or mounting sleeve structure **30** has a central longitudinal bore **34** formed therethrough and each end of the bore **34** includes a shallow counterbore **36**. A mounting shaft **38** is secured through the sleeve **30** by means of a pair of fasteners **40** secured through the sleeve **30**, diametric bores **42** formed in the shaft **38** and threaded in the upper ends of the uprights **28**, see FIG. **4**. The opposite end portions of the shaft **38** project outwardly of the corresponding ends of the sleeve **30** and are provided with threaded blind bores **44**.

A pair of centrally apertured friction discs **46** are seated in the counterbores **36** and are snugly received on the opposite end portions of the mounting shaft **38**. In addition, a pair of oscillatable mounting sleeves **48** having bores **50** formed therethrough are oscillatably disposed on the remote ends of the mounting shaft **38** with the terminal ends of the mounting shaft **38** projecting into counterbores **52** formed in the outer ends of the bores **50**. The adjacent ends of the mounting sleeves **48** are seated in the outer ends of the counterbores **36** outwardly of the friction discs **46** and each of the mounting sleeves **48** has a semicylindrical groove **54** formed in its outer end whose center axis of curvature is generally tangent to the outer cylindrical surfaces of the mounting sleeve **48**.

The central portions **56** of a pair of transverse handlebars referred to in general by the reference numerals **58** are secured in the grooves **54** by means of suitable fasteners **60** and each of the counterbores **52** has a plurality of antifriction thrust bearing washers **62** disposed therein and about the opposite terminal ends of the mounting shaft **38** to serve as thrust bearings for engagement with a pair of shoulder spring retainers **64**. Each of the shouldered spring retainers **64** is disposed in each counterbore **52** slightly outwardly of the adjacent terminal end of the shaft **38** and a threaded thumbscrew **66** is passed through each spring retainer **64** and threadedly engaged in the corresponding threaded blind bore **44**. Each thumbscrew **66** has a diametrically enlarged head **68** on its outer end and a second spring retainer disc **70** is disposed upon each thumbscrew **66** and abuts the inner end of the corresponding head **68**. A compression spring **72** is disposed on each thumbscrew **66** between the corresponding pair of spring retainers **64** and **70** and it will be noted that the spring retainers **70** are receivable in the outer ends of the counterbores **52** whereby threading the thumbscrews **66** inwardly will further compress the springs **72** and thus apply greater force upon the corresponding mounting sleeve **48** so as to urge it

into tighter frictional engagement with the corresponding friction disc **46**.

When it is desired to use the machine **10**, a person may be seated upon either of the seat structures **22** with his back opposing the corresponding thumbscrew **66** and his knees disposed at the forward end **24** of the seat structure **22**. Then, the user of the machine may rest his arms on the opposite ends of the corresponding handlebar assembly **58** with his hands gripping the forwardly directed handgrip portions **74** of that handlebar assembly. The machine **10** may now be utilized by the user bending from side to side at the waist with his hands and arms supported from the corresponding handlebar assembly **58**. If it is desired to have oscillation of the handlebar **58** resisted with increased friction, the corresponding thumbscrew **66** may be turned inwardly so as to further compress the corresponding spring **72**.

It will be noted that the mounting shaft **38** extends in a front-to-rear direction relative to both of the seat structures **22** and that the shaft **38** is disposed generally at waist level of a person or persons seated upon the seat structures **22**. Therefore, as the person seated on either of the seat structures **22** bends at the waist from side to side his arms and hands will be supported from the corresponding handlebar assembly **58** without movement relative thereto and the user of the machine will not only be bending at the waist and alternately shortening the various oblique muscles of the waist in order to cause oscillation of the handlebar **58**, but will also be alternately foreshortening various shoulder and arm muscles in order to exert alternating downward pressure on the opposite ends of the handlebar assembly **58**.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. An exercise apparatus including a seat structure defining front and rear portions and adapted to be sat upon by a user of the apparatus, a standard projecting upwardly rearwardly of the rear portion of said seat structure, a mount portion supported on said standard at an elevation generally corresponding to the elevation of the waist of a person seated on said seat structure, said mount portion including an oscillatable member movable about a horizontal axis extending in a direction intersecting a user seated on said seat structure in a front-to-back direction of the user and a generally horizontal extending handlebar assembly transversely positioned generally perpendicular to the horizontal axis and centrally mounted on said oscillatable member, said handlebar assembly being oscillatable about said axis by a user seated on said seat structure.

2. The combination of claim **1** wherein said handlebar assembly has opposite end portions, said opposite end portions of said handlebar assembly being positioned to engage laterally extended arms of a user of the apparatus while seated thereupon.

3. The combination of claim **1** wherein said handlebar assembly having remote ends terminating in forwardly directed handgrip portions.

4. The combination of claim **1** wherein said mount portion includes resistance means yieldingly resisting oscillation of said handlebar assembly relative to said standard.

5. The combination of claim **4** wherein the resistance means includes means for variably resisting oscillation of said handlebar assembly relative to said standard.

6. An exercise apparatus including a seat structure defining front and rear end portions and adapted to be sat upon by user of the apparatus, a mount portion stationarily supported relative to said seat structure, a generally horizontal transversely extending handlebar assembly, means supporting said handlebar assembly from said mount portion for oscillation about a horizontal axis extending in a direction intersecting a user seated on said seat structure in a front-to-back direction of a user, said handlebar assembly being generally centered transversely generally perpendicular to the horizontal axis and disposed at an elevation above said seat structure generally corresponding to the elevation of the waist of a person seated on said seat structure, said mount portion including a stationary body having an axial bore formed therein extending in front to rear direction relative to said seat structure and opening at one end of said body, a shaft secured in said bore, said shaft having a front end, the front end of said bore including a shallow counterbore, an apertured friction disc disposed on said shaft and seated in said counterbore, the last-mentioned means including an oscillatable sleeve having a central bore, a rear end, a front end, said bore formed therethrough and mounted on said shaft with the rear end of said sleeve seated against the outer side of said disc and received in said counterbore, said sleeve bore including a counterbore into which shaft projects annular thrust bearing means disposed in said sleeve counterbore and projecting outwardly lengthwise of said shaft, said shaft including a threaded axial bore, a thumbscrew including a threaded shank threadedly engaged in said axial bore and including a spring retainer means and a compression spring disposed about said shank between said spring retainer means and said thrust bearing means, said handlebar assembly being supported from said sleeve for oscillation therewith.

7. The combination of claim **1** wherein said mount portion includes resistance means yieldingly resisting oscillation of said handlebar assembly relative to said standard, resistance means including means for variably resisting oscillation of said handlebar assembly relative to said standard, said handlebar assembly having opposite end portions, the opposite end portions of said handlebar assembly being positioned to engage laterally extended arms of a user of the apparatus seated thereupon.

8. The combination of claim **7** wherein the opposite end portions of said handlebar terminate in forwardly directed handgrip defining portions.

9. An exercise apparatus including a seat structure defining front and rear portions and adapted to be sat upon by a user of the apparatus, a mount portion stationarily supported relative to said seat structure, a member oscillatably supported by said mount portion for angular displacement about a horizontal axis extending in a direction intersecting a user seated on said seat structure in a front-to-back direction of a user, said member being generally centered centrally of and transversely positioned generally perpendicular to the horizontal axis and disposed at an elevation above said seat structure generally corresponding to the elevation of the waist of a person seated on said seat structure, and a generally horizontal transversely extending handlebar assembly centrally mounted on said oscillatable member said handlebar assembly being oscillatable about said axis by user seated on said seat structure, said apparatus including a pair of horizontally spaced apart back-to-back seat structures between which said mount portion is disposed and a pair of handlebar assembly each assembly including a member supported from said mount portion for independent oscillation relative thereto.

10. An exercise apparatus including a seat structure defining front and rear end portions and adapted to be sat upon by a user of the apparatus, a mount portion stationarily supported relative to said seat structure, a member oscillatably supported from said mount portion for angular displacement about a horizontal axis extending in a direction intersecting a user seated on said structure in a front-to-back direction of a user, said member being generally centered centrally of and transversely positioned generally perpendicular to the horizontal axis and disposed at an elevation above said seat structure generally corresponding to the elevation of the waist of a person seated on said seat structure, said member having at least one crank arm means secured thereto, said crank arm means including at least one outer end portion spaced radially

outwardly of said axis and including a handgrip portion oscillatable with said crank arm means through an arc whose center of curvature generally coincides with said axis.

* * * * *