

Nov. 8, 1960

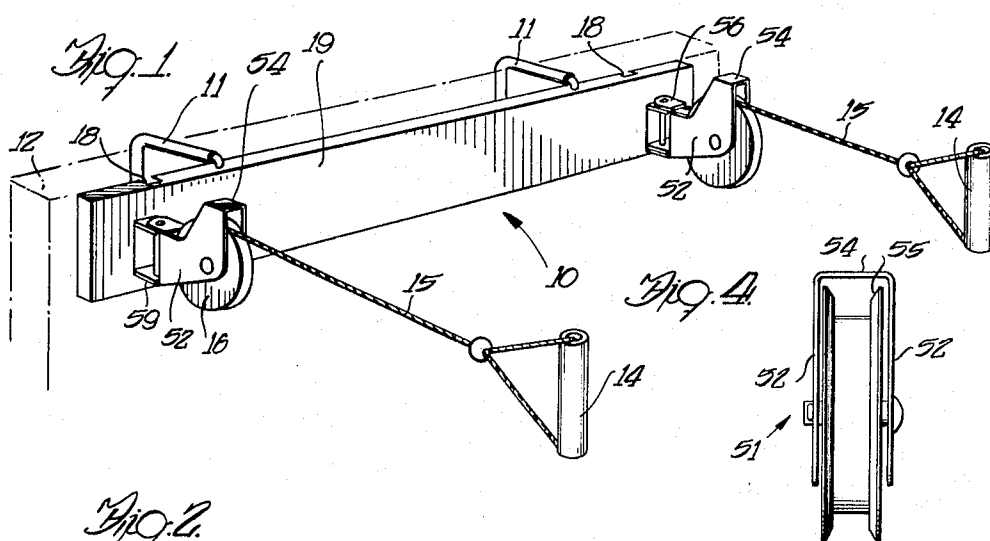
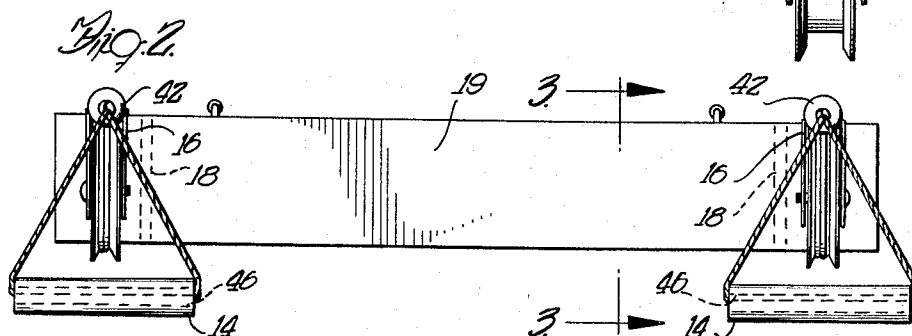
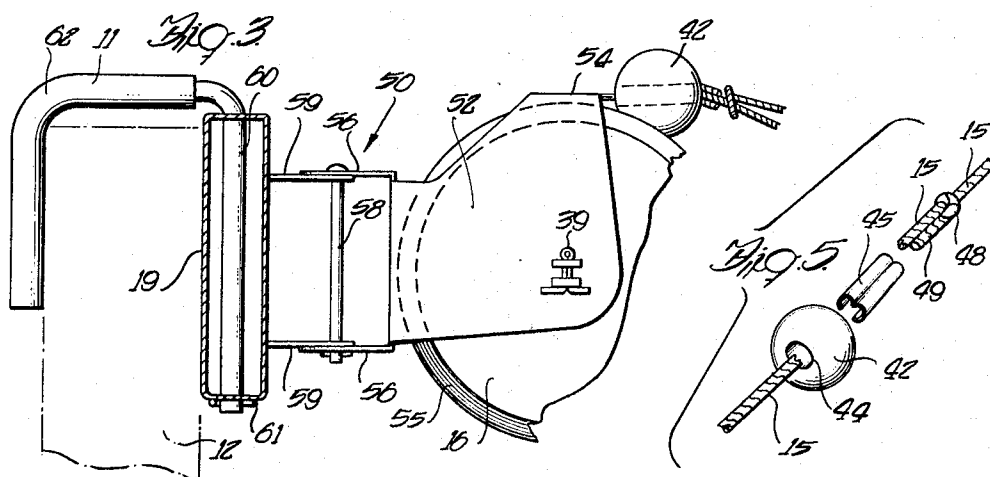
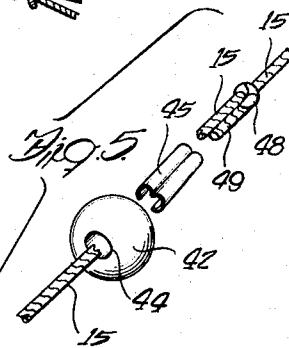
B. SALTZ

2,959,414

EXERCISER

Filed June 23, 1958

2 Sheets-Sheet 1



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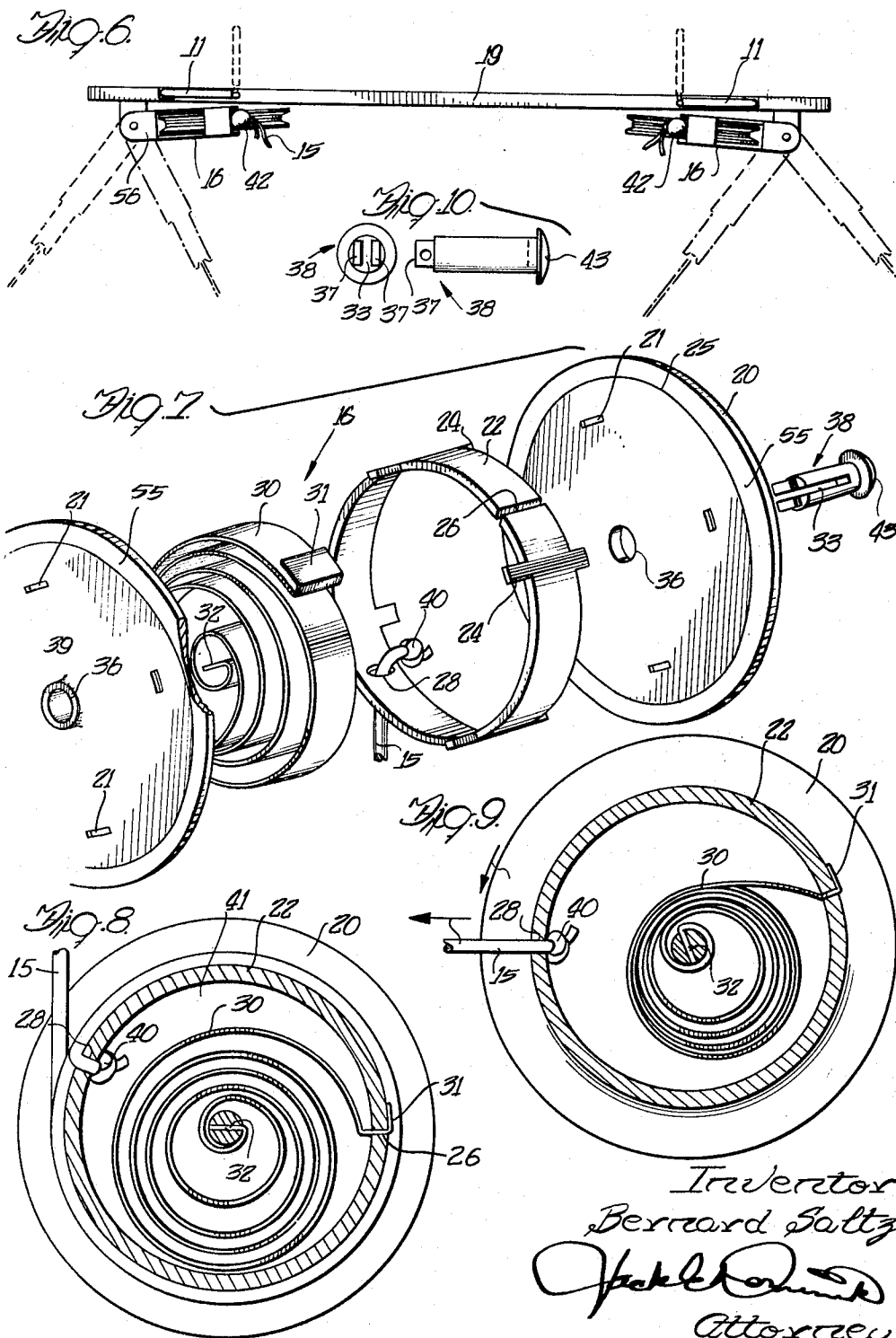
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B. SALTZ
EXERCISER

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2 Sheets-Sheet 2



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EXERCISER

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2 Claims. (Cl. 272—83)

The present invention relates to an exercising machine, and more particularly to a portable home exerciser with a wide variety of usages and applications.

Although exercising can be done without mechanical aids, it is particularly beneficial to use mechanical aids to insure the use of the correct muscles and motions in a physical fitness program, especially when practiced in the home.

Accordingly, it is the general object of the present invention to provide a portable exerciser which can be used in the home.

Another object of the invention is to furnish an exerciser which is inexpensive to manufacture, and yet is rugged and durable in operation.

A further object of the invention is to provide an exerciser with a cord-reel type tension device which is inherently resistant to fouling.

Still a further object of the invention is to furnish an exerciser which can be used for diverse simulations such as rowing and bicycling, and yet which stores most compactly when out of use.

Yet another object of the invention is to provide an exerciser which can be affixed to a door, chair, railing, and several other common household fixtures, thereby maximizing its utility.

A more detailed object of the invention is to furnish an exerciser with a reel and cord construction which facilitates easy assembly by unskilled operators.

Further objects and advantages of the present invention will become apparent as the following description of an illustrative embodiment proceeds, taken in conjunction with the accompanying drawings in which:

Figure 1 is a perspective view of an illustrative exerciser showing the handles in alternative positions in phantom lines, and also showing the attachment to a door in phantom lines.

Fig. 2 is a front elevation of the embodiment of exerciser chosen for illustration.

Fig. 3 is a transverse section taken along section lines 3—3 of Fig. 2, showing in phantom lines the attachment to an associated door.

Fig. 4 is a front elevation of one of the spring-loaded reels, showing the orientation of the cord guide.

Fig. 5 is a perspective, partially exploded, view of the snubber ball and its associated cord knot.

Fig. 6 is a top view of the exerciser showing the spring-loaded reel in alternative positions, and illustrating the retracted position of the attachment mechanism.

Fig. 7 is an enlarged perspective, exploded, view of the reel construction.

Fig. 8 is a transverse sectional view of the reel in its assembled condition, fully retracted to wrap the cord about itself.

Fig. 9 is a transverse sectional view of the reel as shown in Fig. 8, with the cord fully extended and the internal spring fully wound.

Fig. 10 is a side and end view of the tension reel axle.

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The exerciser 10 can be more fully appreciated in light of its numerous intended usages. As will be seen in Figs. 1 and 3, the exerciser 10, by means of its attachment hooks 11 can be fastened to a door 12, chairback, railing, or other similar household support. Thereafter, the user grasps the handles 14, which pull the cords 15 on the tension reels 16. The reels 16 are spring-loaded, as will be detailed hereinafter, to provide a resistance to the user's pull on the handles 14, and to subsequently coil the cords 15 and return the handles 14 into close proximity with the spring-loaded reels 16. The user may alternatively pull on the handles 14, or may pull simultaneously. In addition, the arms can be thrust outwardly, downwardly, or overhead, to exercise those muscles designated for treatment. The attachment hooks 16 can be retracted and nested in the attachment hook recesses 18, and the exerciser body 19 placed under the feet, so that the user may use the exerciser as a rowing machine. The exerciser body 19 may also be placed behind the back of the user, and the handles 14 extended forwardly. Also, the exerciser body 19 can be placed flat on the floor with the user standing over the exerciser 10 and manipulating the handles 14 in a wide variety of directions.

Naturally, in order to accommodate all of the foregoing types of exercises, plus many others which can be readily anticipated, the spring-loaded reels 16 must be adapted to coil the cord 15 without tangling, particularly where the handle 14 is inadvertently released from an oblique position. Additionally, in the event of such inadvertent release, the return of the cord 15 and handle 14 must be cushioned to prevent undue damage to the moving parts of the exerciser 10.

The advantageous results achieved with the subject exerciser are attributable largely, but not exclusively, to the retractable reel assembly 16. Referring now to Fig. 7, it will be seen that the retractable reel assembly 16 contemplates a pair of side plates 20, having a plurality of slots 21 to receive the drum 22 and its fastening projections 24. A chamfered rim 55, turned outwardly at the circumference of the side plate 20, is provided when the side plate 20 is formed. A spring attachment slot 26 is provided transversely in the drum 22 at a position substantially diametrically opposed to the cord attachment hole 28. A coil spring 30 powers the reel assembly 16, the coil being formed from a band of spring steel, or equivalent material.

It will be noted that a reversely bent hook portion 31 is provided at the outside terminal of the spring 30, and that an inwardly turned attachment tab 32 is provided at the inside terminal of the coil spring 30. The inner attachment tab 32 is secured in the axle slot 33. The central holes 36 in the side plates, permit the attachment of the side plates 20 to the drum 22 by means of the reel axle 38. The reel axle 38 is held in place by means of pin 39, or other suitable fastening technique which may include deforming the end of the axle. Referring now to Fig. 8, it will be seen that the particular orientation of the coil spring 30 and its attachment hook 31, attachment tab 32, and the drum spring-slot 26 and cord hole 28, are such that the cord 15 terminates within the area defined by the drum 32 at a point which is offset from the spring 30. This provides sufficient space for the knot 40 to be tied on the cord 15 and remain out of contact with the coil spring 30. The result, as pointed out above, is achieved by orienting the coil spring attachment hook 31 and attachment tab 32 in parallel relationship, but in position for opposed engagement with the respective attachment elements, and positioning the knot hole 28 at a point well within the crescent-shaped open area 41 defined within the drum.

At the other end of the cord 15, an additional advantageous arrangement is employed to close the terminal

end of the cord. As will be seen in Figs. 3 and 5, a spherical bumper 42 which may be fashioned as a rubber ball, is provided to cushion the return of the handle 14. A further useful function of the spherical ball 42 is illustrated in Fig. 5. There it will be seen that the ball 42 has a central transverse hole 44, which receives the terminal knot locking clamp 45, thereby insuring that the knot locking clamp 45 stays in position. In assembly, the cord 15 is run through the hollow bore 46 and brought back upon itself and tied in the terminal knot 48. The loose end 49 remaining after the terminal knot 48 is tied, fits within one of the central longitudinal recesses of the locking clamp 45, and the main cord 15 fits within the other longitudinal recess of the locking clamp 45. As best noted in Fig. 2, the spherical balls 42 nest neatly within the recoilable reel against the shoulders defined by the chamfered periphery 25 of the side plates 20.

To prevent fouling of the cord 15 upon its return, to support the reel assembly 16, and to further provide for hinging the reel assembly 16 for retraction upon storage, a unique attachment mechanism 50 has been provided for each of the coil spring assemblies 16. Referring now to Figs. 1, 3, and 4, it will be seen that the main portion of the attachment element comprises the reel attachment bracket 51, which has a pair of side walls 52 and a top bridge member 54. The bridge member 54 is integral with the side plates 52 and, with the reel assembly 16, defines an eye 55 which is threaded by the cord 15 as it retracts. The bridge member 54 is provided for orientation centrally and above the axle 38 of the reel 16 to jammingly engage the spherical snubber 42 and the cord 15 in such a position that the handles 14 will hang immediately below and adjacent the reel assembly 16, as illustrated in Fig. 2. It has been further found that this arrangement of the bridge 54 and spherical ball 42 prevents tangling, snarling, and fouling of the cord 15, when retracted from unusual altitudes, whether guided or released. At the rear end of the reel attachment bracket 51, a pair of ears 56 are provided to receive the bracket locking pin 58 which attaches the bracket ears 56 to the back plate reel attachment tabs 59. The locking pin and its associated elements are proportioned to permit the reel assembly 16 to be folded flat against the back plate 19.

The axle 38 is secured to the side plates by means of inserting its pair of end blocks 37 into rectangular mating slots in the side plates 52 of the reel assemblies 16. This locks the axle against rotation, and also insures an inexpensive, but rugged, assembled relationship. The head 43 of the axle 38 abuts the opposite side plate 52, leaving the reel free to rotate on the axle journaled by the holes 36.

From an inspection of Fig. 3, it will be apparent that the back plate 19 is a hollow, rectangular, tubular, member. A pair of holes are provided at opposed stations in the thin side walls of the back plate 19 to permit the attachment of the attachment hooks 11 by means of their body portion 60 being thrust therethrough and secured by means of a pin 61 or equivalent locking mechanism. A protective sheath 62 prevents the extended portion of the hook 11 from scratching doors, chairs, and other attachment appurtenances. As outlined earlier, a recessed slot 18 in the rear portion of the back plate (see Figs. 1, 2 and 6) is provided to permit the hooks 11 to be folded into the back plate 19 for storage.

In review, it will be seen that a portable exerciser, susceptible of manufacture from stamped parts of light-gauge material has been provided. Its recoilable reel assemblies are susceptible of easy manufacture, durable in operation, and inherently resistant to fouling and snarling under the most adverse conditions. The exerciser, because of its retractable hook members and their orienta-

tion, may be attached to readily available household anchors to permit a wide variety of applications for the exerciser.

Although particular embodiments of the invention have been shown and described in full here, there is no intention to thereby limit the invention to the details of such embodiments. On the contrary, the intention is to cover all modifications, alternative embodiments, usages and equivalents of the exerciser as fall within the spirit and scope of the invention, specification, and appended claims.

I claim as my invention:

1. A portable exerciser comprising, in combination, an elongate back board, a pair of J-shaped attachment hooks swiveled transversely in said back board at the rear portion thereof and adjacent the ends thereof, recesses in the back board to nestingly receive the J-shaped attachment hooks in the retracted position; a pair of spring-loaded reels swiveled to the back board adjacent the ends thereof, a pull cord, each reel having a drum, a hole in the drum, a mounting axle for the drum, a mounting bracket guide for the drum having a pair of parallel side plates flanking the drum and a bridge joining the side plates at their tops, thereby defining with the drum a guide channel; a cord attached to each drum, a resilient ball having a diametrical center bore, the cord extending through the ball, a hollow handle, the cord leading to one end of the hollow handle and running therethrough, the free end of the cord being knotted, a knot-free end clamp holding the free end of the cord extending from the knot, the clamp being fitted within the center bore of the resilient ball; a coiled spring within each drum, a slit in the drum axle, a tab central of the coil spring for insertion into the axle slit, a slit in the drum, a tab at the outer end of the coil spring for attachment to the drum in the slit therein, the two mounting slits and spring tabs being oriented to mount the coil spring eccentrically within the drum, thereby permitting space for the drum cord knot to fit within the drum out of contact with the coil spring.

2. A portable exerciser comprising, in combination, an elongate backboard, a pair of J-shaped attachment hooks swiveled transversely in the said backboard at the rear portion thereof and adjacent the ends thereof, recesses in the backboard to nestingly receive the J-shaped attachment hooks in the retracted position; a pair of spring-loaded recoil reels swiveled to the backboard adjacent the ends thereof, a pull-cord, each reel having a drum, a hole in the drum, a mounting axle for the drum, a mounting bracket guide for the drum having a pair of parallel side plates flanking the drum and a bridge joining the side plates at their tops, thereby defining with the drum a guide channel; a cord attached to each drum, a resilient ball having a diametrical center bore, the cord extending through the ball, a hollow handle, the cord leading to one end of the hollow handle and running therethrough, the free end of the cord being knotted, a knot-free end clamp holding the free end of the cord extending from the knot, the clamp being fitted within the center bore of the resilient ball; and an automatic rewind coiling mechanism within each pulley to rewind the same after the cord has been unwound from the reel.

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