# United States Patent [19]

**Snyder, Jr. et al.**

[11] **3,893,667**

[45] **July 8, 1975**


[54] **EXERCISE DEVICE WITH COMBINED SPRING TENSION AND FRICTIONAL RESISTANCE**


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[73] Assignee: **Hide-A-Gym International, Inc.**, St. Louis, Mo.



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[52] **U.S. Cl.** ..... **272/58**; 272/79 R; 272/83 R; 297/217; 297/118

[51] **Int. Cl.** ..... **A63b 21/02**

[58] **Field of Search** ..... 272/57 R, 58, 72, 73, 79 R, 272/80, 83 R; 273/55



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[57] **ABSTRACT**

A compact exercise device which also serves as a decorative and utilitarian piece of furniture. The frame of the piece of furniture houses coil springs. To an end of one of the springs is attached a pull cord which extends parallel to the spring axis and out through a tapered opening in one end of the frame. To an end of another of the springs is attached a pull cord which extends 90° to the spring axis and out through a tapered opening in one side of the frame. The diameters of the pull cords and tapered openings are such that the openings impose a frictional resistance to movement of the cords therethrough.


**12 Claims, 12 Drawing Figures**

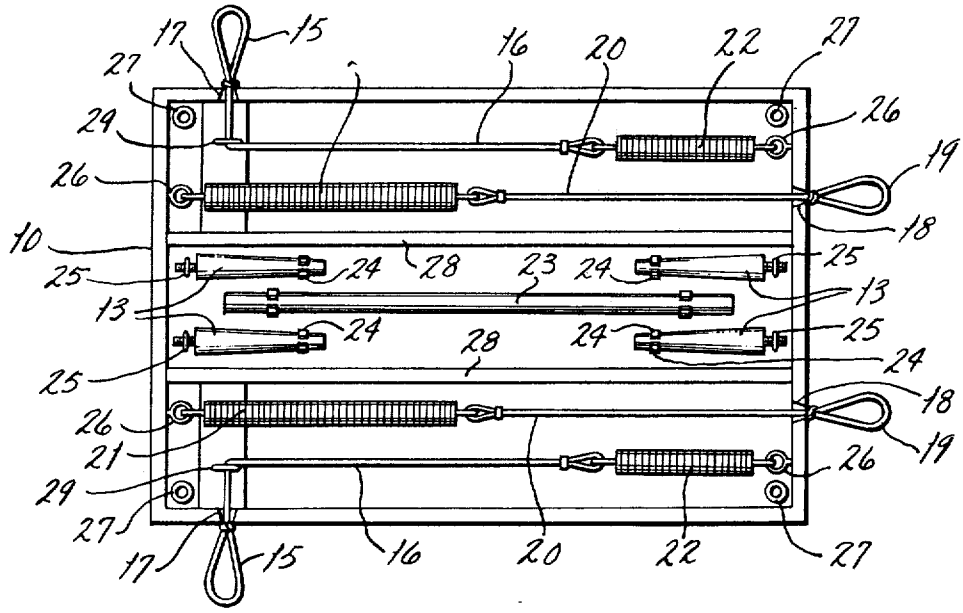


FIG. 1

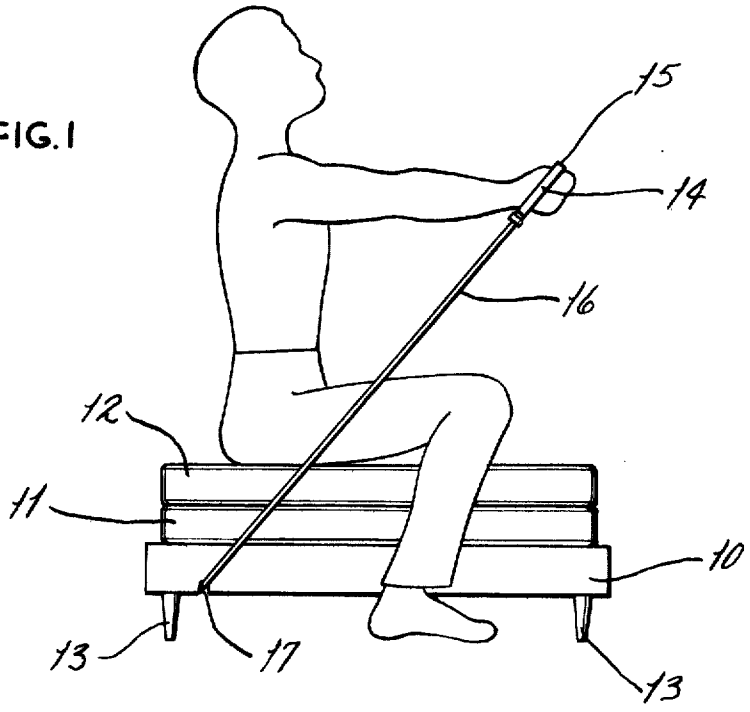



FIG. 2

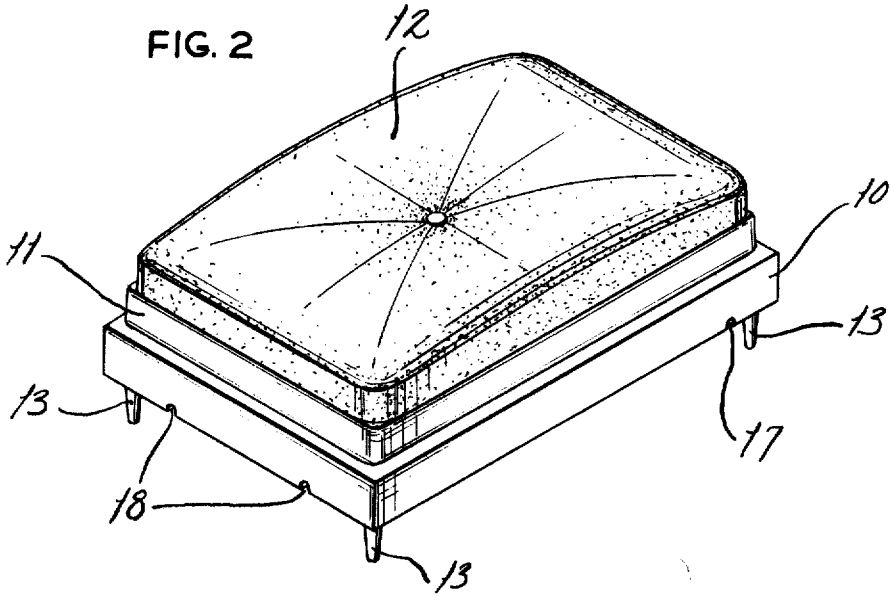


FIG. 3

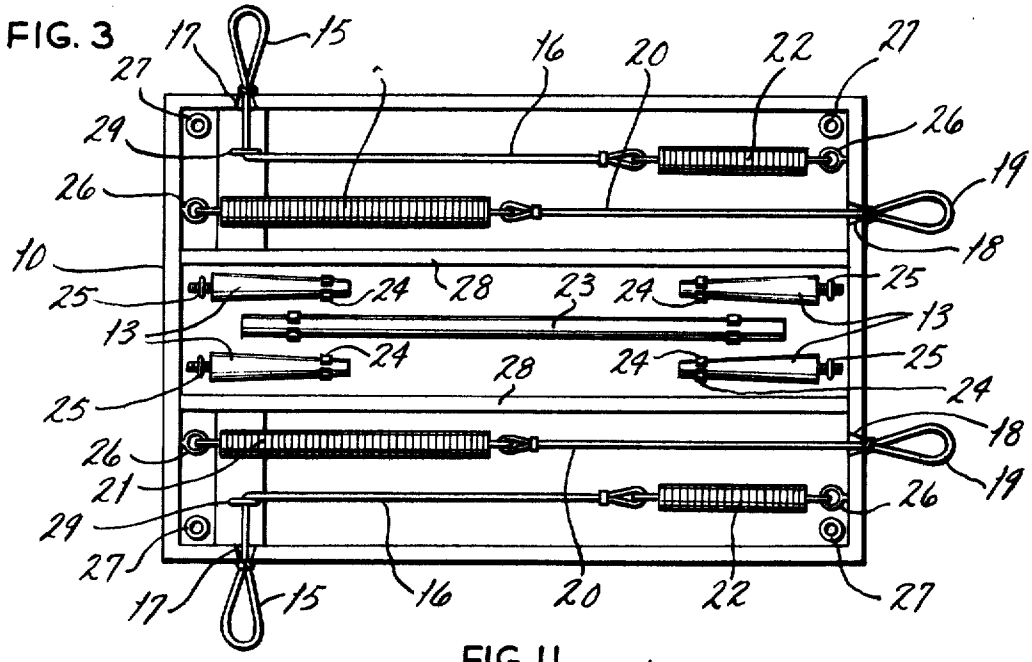



FIG. 11

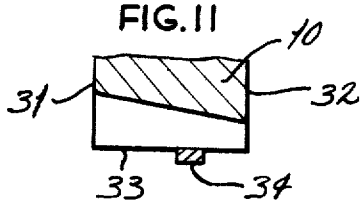



FIG. 4

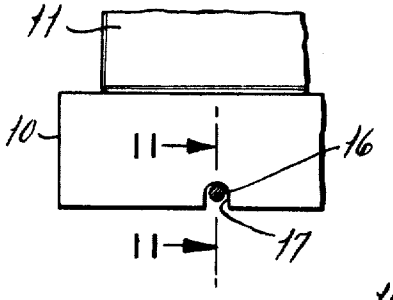



FIG. 5

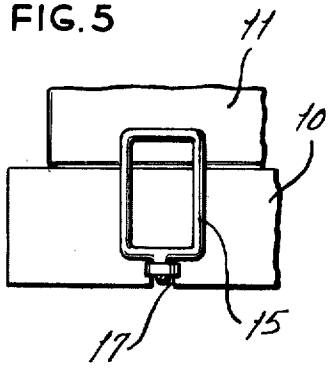



FIG. 12

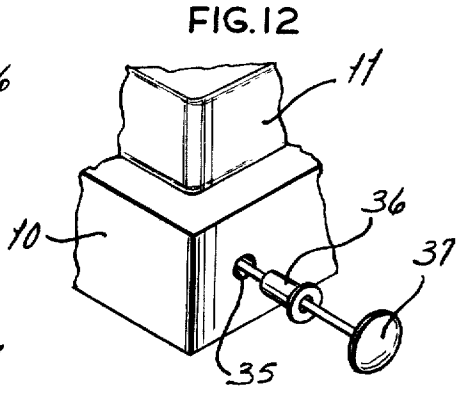



FIG. 6

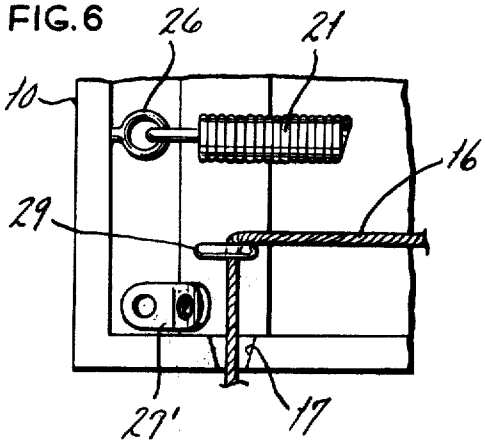



FIG. 7

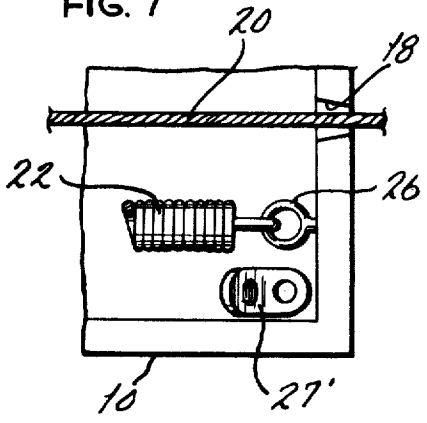


FIG. 8

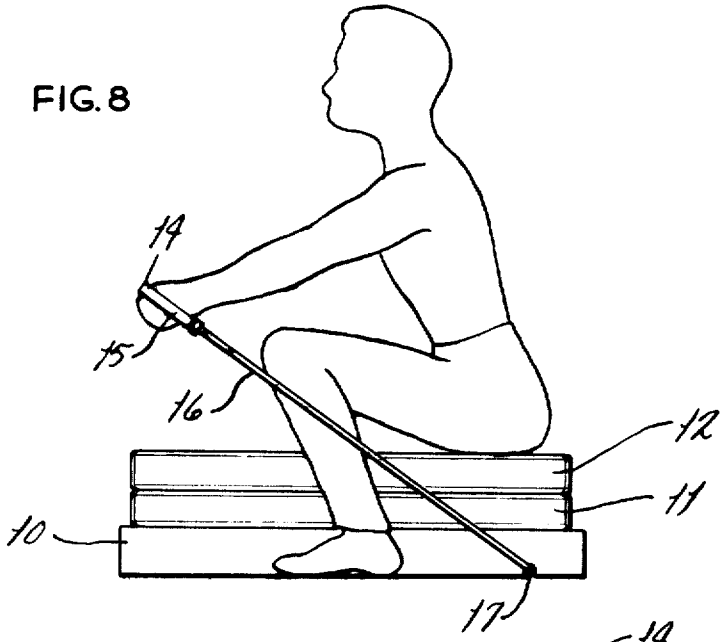



FIG. 9

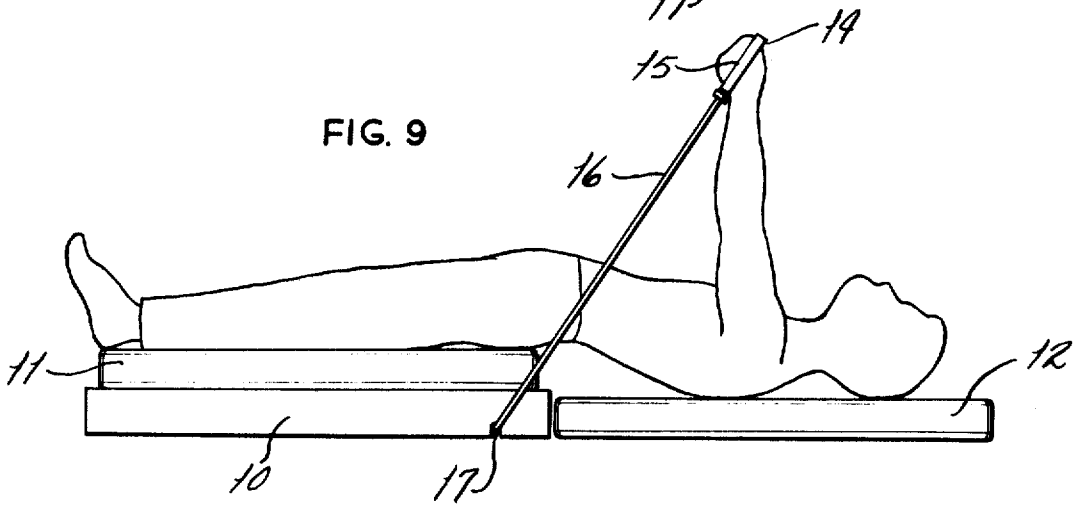
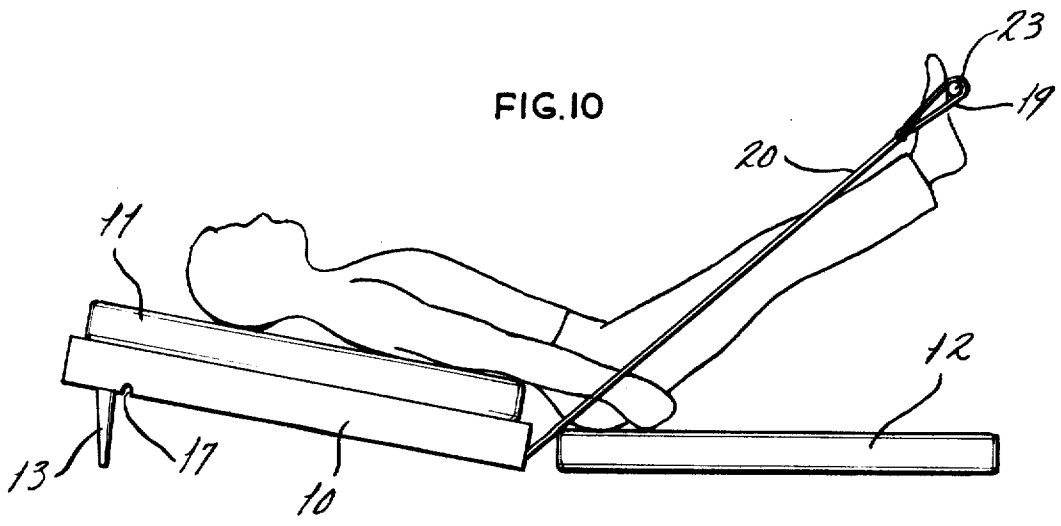



FIG. 10



# EXERCISE DEVICE WITH COMBINED SPRING TENSION AND FRICTIONAL RESISTANCE

This invention relates generally to exercise apparatus and more specifically to exercise apparatus for use in the home.

Within recent years the increasing urbanization and mechanization of our society has lead to a corresponding decrease in the amount of physical exercise in which the members of our society regularly engage. And yet physicians and others more generally concerned with the public health have come to increasingly recognize the casual relationship between good health and the engagement by the individual in a regular program of vigorous physical exercise. This problem is more acute in the case of the urban dweller, who typically resides in an apartment or other limited-space dwelling. Not only may the nature of such individual's employment activities limit his daily physical exercise, but the limited space of his home surroundings and lack of adjoining grounds may virtually preclude a positive effort by him to establish an exercise program.

In an effort to provide home facilities for rectifying the aforegoing situation, various knock-down or collapsible exercising apparatus have heretofore been proposed. By and large, however, such prior apparatus for home use has been unsatisfactory. Collapsible apparatus is unattractive and must be stored out of sight when the room is to be used for day-to-day living or entertainment. Devices which store the exercise apparatus in furniture require a number of steps to set up the device or are bulky or cumbersome. None of the prior-art devices provide an attractive lightweight piece of furniture having at all times available, without a complicated conversion procedure, exercise apparatus sufficient to carry out over 100 different exercises.

It is an object of this invention to provide a lightweight exercise device which always is available for use, even when the best appearance of the room is desired, and which enables the user to perform a wide variety of healthful exercises.

It is further an object of this invention to provide an attractive piece of furniture that is functional and suitable for even small rooms.

In accordance with the present invention, the foregoing objects, and others, are achieved in a portable exercise device which comprises in combination a frame, support means, and exercise means, said frame having a longer and shorter dimension and bottom interior and exterior surfaces being attached to, and supporting said support means and housing said exercise means, said exercise means comprising at least one side pull exercise means and at least one end pull exercise means, said side pull exercise means comprising attachment means, coil spring means, a side pull, a side pull loop, an eyelet and a side pull channel, said attachment means attaching said coil spring means to said frame whereby said coil spring means is positioned so that its direction of elongation is parallel to the longer dimension of said frame, one end of said side pull being attached to said coil spring means, said side pull extending from said coil spring means in a direction parallel to said longer dimension of said frame, changing direction by about 90° through said eyelet being attached to said frame, and passing through said side pull channel in a direction substantially perpendicular to the longer direction of said frame, the other end of said side pull being attached to said side pull loop, said side pull channel having a vertical depth at the interior surface of said frame of from about two to five times the maximum dimension of the side pull, a vertical depth at the exterior surface of said frame of from about one to two times the maximum dimension of said side pull, a radius of curvature at the interior surface of said frame of from about 2.5 to about 4.5 times one half of the maximum dimension of said side pull, a radius of curvature at the exterior surface of said side frame of about 1.25 to about 2 times one half of the maximum dimension of said side pull and a horizontal dimension at the bottom surface of said frame at least equal to the widest horizontal dimension of said channel in the plane parallel to the exterior surface of said frame and containing said horizontal dimension and said end pull exercise means comprising attachment means, coil spring means, end pull, end pull loop and end pull channel, said attachment means attaching said coil spring means to said frame whereby said coil spring means is positioned so that its direction of elongation is substantially parallel to the longer dimension of said frame, one end of said end pull being attached to said coil spring means, said end pull extending from said coil spring means and passing through said end pull channel in a direction substantially parallel to said longer dimension of said frame, the other end of said end pull being attached to said end pull loop, said end pull channel having a vertical depth at the interior surface of said frame of from about two to about four times the maximum dimension of the side pull, a vertical depth at the exterior surface of said frame of from about one to about two times the maximum dimension of said end pull, a radius of curvature at the interior surface of said frame of from about 2.5 to about 4.5 times one half of the maximum dimension of said end pull, a radius of curvature at the exterior surface of said frame of from about 1.25 to about 2 times one half of the maximum dimension of said end pull, and a horizontal dimension at the bottom surface of said frame at least equal to the widest horizontal dimension of said channel in the plane parallel to the exterior surface of said frame and containing said horizontal dimension whereby said exercise device provides a healthful and invigorating exercise activity resulting from the interaction of spring tension and frictional resistance and, when not in use for exercise, provides a useful and decorative piece of furniture.



FIG. **1** is a side elevational view of the exercise device with the exercise pulls in use.

FIG. **2** is a perspective view of the exercise device with the exercise pulls in their storage position.

FIG. **3** is a plan view of the underside of the exercise devise with the exercise pulls in their storage position.

FIG. **4** is an enlarged side view of the side pull end portion of the exercise device.

FIG. **5** is an enlarged side view of the side pull end portion of the exercise device.

FIG. **6** is an enlarged plan view of the side pull end portion of the underside of the exercise device.

FIG. **7** is an enlarged plan view of the end pull end portion of the underside of the exercise device.

FIGS. **8, 9,** and **10** are side views of the exercise device with various exercises being performed on the device in different configurations.

FIG. **11** is a cross-sectional view looking along the line **11—11** of FIG. **4** without showing the side pull.

FIG. 12 is a perspective view of a portion of a preferred exercise device with a grommet, said grommet being displaced from the frame.

FIG. 1 illustrates the exercise device in use with legs attached. The main visible elements of the device are the frame **10**, a preferred support means, i.e., the attached cushion **11** and the unattached cushion **12**, as well as legs **13**, the side pull grasping means **14**, the side pull loop **15**, the side pull **16**, and the side pull channel **17**. The support means rests upon or within the frame. The function of the support means is to provide a horizontal supporting surface for the human body when all four legs are attached to the device as in FIGS. **1** and **2** or when no legs are attached as in FIGS. **8** and **9**. The support means, in addition to being in the form of cushions as illustrated, may also be a table top or a bench seat or other flat or contoured surface which will give support to the exerciser.

FIG. 2 illustrates the exercise device as a decorative and useful furniture piece. The main visible elements when the device is not in use for exercising are the frame **10**, a preferred support means, i.e., the attached cushion **11** and the unattached cushion **12** as well as the legs **13**, the side pull groove **17**, and the end pull grooves **18**.

The frame **10** may be constructed of any suitable structural material provided it is capable of supporting the human body in a resting or sitting position as well as in the performance of a variety of exercises. The frame also provides a base for attachment of exercise means and support of attached cushion **11**. The frame **10** may be of any suitable rigid material such as metal, plastic or wood. For esthetic considerations wood is a preferred material or, in the alternative, a plastic having a woodgrain surface. The dimensions of the frame determine the overall size of the exercise device and, therefore, it is preferred that the length of the frame be sufficient to allow a person six feet in height exercising on the device to extend fully his arm in a vertical direction when grasping side pull grasping means **14**. The maximum length of the frame is determined by the space the device is to occupy in a small room. It has been found that a frame with outside dimensions of from about 32 to about 42 inches in length, from about 20 to about 28 inches in width and from about 2 to about 4 inches in height is most suitable. A more preferred exercise device has a frame with outside dimensions of about 36 inches in length, 24 inches in width and about 2.75 inches in height. The frame comprises exterior members shown in FIGS. **1** and **2** and resting upon and attached to it is support means within the exterior members. The frame may contain additional members and elements to provide the proper rigidity and strength. Unless otherwise specified, the dimensions of pull channels in the frame refer only to dimensions and surfaces relating to the exterior members of the frame as shown in the drawings.

Attached to and supported by frame **10** is attached cushion **11**. In this preferred embodiment the cushions are the support means of the invention. Attached cushion **11** may be of any suitable resilient core material with a protective cover. A preferred construction is a block of flexible foam with a fabric cover. The core material may also be of innerspring construction of resilient stuffing material such as, for example, kapok, shredded foam, or polyester tow. The cover may be of flexible plastic sheet or woven or knit fabric. Attached cushion **11** may be attached permanently to the frame by means of staples, tacks, glue or other permanent fastening means. In the alternative it may be desired to remove the attached cushion from the frame for cleaning, storage or other reasons. To provide this capability the attached cushion may be attached to the frame by snap fasteners, zippers, hook-and-eye fasteners or other fasteners which allow facile removal and reattachment of the cushion to the frame. Attached cushion **11** is of any suitable dimensions but is preferably sized to fit within the exterior members of the frame **10**.

The unattached cushion **12** rests on attached cushion **11** and is preferably of the same general dimensions. The shape and construction of unattached cushion **12** may be the same as, or different from, the shape and construction of the attached cushion **11**. In a preferred exercise devise illustrated in FIG. **1**, the attached cushion **11** and the unattached cushion **12** are both constructed of a block of flexible foam with a fabric cover. In a preferred exercise device illustrated in FIG. **2**, the attached cushion **11** is constructed of a block of flexible foam and unattached cushion **12** is constructed of an inner core of polyester tow with a fabric cover. The unattached cushion **12** may rest upon attached cushion **11** when the exercise device is being utilized as a piece of furniture as illustrated in FIG. **2** or for the performance of exercises as shown in FIGS. **1** and **8** or may be removed from the attached cushion **11** for the performance of exercises as illustrated in FIGS. **9** and **10**.

Legs **13** may be used to support frame **10** at a suitable distance above the floor. Legs **13** are of any suitable size and design provided the legs have strength sufficient for supporting the exercise device and a person performing exercises on the device. Certain embodiments of the exercise device may not have any legs at all, but it is preferred that the exercise device have legs **13**. The legs **13** are attached to frame **10** by leg attachment means **27** located on the underside of the corner portions of frame **10**. The legs **13** are attached to leg attachment means **27** located on the underside of the corner portions of the frame **10**. The legs **13** are attached to leg attachment means in any suitable manner such as a male fitting of the leg **13** to a female fitting of the leg attachment means **27**. The male and female fittings may be engaged by thread means or a frictional or compression fit. The manner of attachment of legs **13** to leg attachment means **27** is not a critical feature of this invention. Leg attachment means may provide a single point of attachment, as illustrated by leg attachment means **27**, or two points of attachment, as illustrated by leg attachment means **27'**, in FIGS. **6** and **7**. Leg attachment means **27** cause legs **13** to be attached perpendicular to the frame **10** and floor as illustrated in FIGS. **1** and **2**. Leg attachment means **27'** provide two points of attachment. In one point of attachment the legs **13** are perpendicular to the frame **10** and the floor as illustrated in FIGS. **1** and **2**. In the second point of attachment, the legs **13** on one end of the frame **10** are perpendicular to the floor when the legs **13** at the other end of the frame **10** are removed as illustrated in FIG. **10**. When legs **13** are not in use, they may be stored in brackets **24** and leg storage brackets **25** mounted on the underside of frame **10**. The brackets **24** and **25** are illustrated in FIG. **3** without the legs.

FIG. 3 illustrates the underside of the frame **10** and the configuration of the exercise means when not in use. The exercise means comprises side pull exercise

means and end pull exercise means. Side pull exercise means comprises attachment means **26**, coil spring means **22**, side pull **16** and side pull loops **15**. The attachment means **26** fastens one end of coil spring means **22** to frame **10**. The other end of coil spring means **22** is attached to side pull **16**. The other end of side pull **16** forms side pull loop **15** to which side pull grasping means **14** may be attached. Side pull grasping means **14** may be of any suitable material and dimensions in which the hand or foot or other exercise implement such as an exercise bar **23** may be inserted and which may be attached to side pull loop **15**. The maximum size of the side pull loop is not critical. The minimum size of side pull loop **15** is important. It is preferred that half the inner circumference of side pull loop **15** exceed the vertical dimension of frame **10** by at least 0.125 inch. For example, when the vertical dimension of the frame **10** is 2.75 inches, then one half the inner circumference of side pull loop **15** must be 2.875 inches or greater. Side pull **16** and side pull loop **15** may be of the same or different materials, have strength exceeding the resistance of coil spring means **22**, and are usually in the form of a substantially inextensible flexible cord or cable. Although any suitable material may be used, it is preferred that the side pull **16** and side pull loop **15** be of nylon or polyester cord of suitable strength. When side pull **16** and side pull loop **15** are of different materials, side pull loop **15** is attached to side pull **16** by suitable attachment means such as thread or clips. When side pull **16** and side pull loop **15** are of the same material, the side pull loop **15** is merely a loop in the end of side pull **16** made by knotting the loop in the end of the side pull **16** or by fastening the end of the pull to the pull by suitable means to form the appropriate-sized side pull loop **15**.

It is essential to the invention that the coil spring means **22** extend parallel to the long dimension of frame **10**. It is also essential to the invention that the force applied to the side pull **16** be directed perpendicular to the long dimension of frame **10**. To enable the side pull **16** to change direction so that the force is applied through the frame in the necessary perpendicular direction, side pull **16** passes through eyelet **29** attached to frame **10**. It is also necessary to the invention that the force applied to side pull **16** through side pull loop **15** be unrestricted in direction within the quadrant bounded by the plane of the floor and the plane perpendicular to the plane of the floor and passing through the outer vertical face of the frame **10** through which side pull **16** passes. It has been discovered that this salutory object is achieved by forming in the frame **10** of the exercise device of this invention a side pull channel **17**. The dimensions of side pull channel **17**, which are critical to the present invention, are the vertical depth of the channel at the interior surface **31** of frame **10**, which must be from about two to about five times the diameter of side pull **16**, preferably from about three to about four times the diameter of side pull **16**, the vertical depth of the channel at its exterior surface **32** of frame **10** which must be from about one to about two times the diameter of side pull **16**, preferably from about 1.25 to about 1.5 times the diameter of side pull **16**, the radius of curvature of the channel surface at its intersection with the interior surface **31** of the frame **10**, which must be from about 2.5 to about 4.5 times the radius of side pull **16**, preferably from about three to about four times the radius of side pull **16**, the radius of curvature of the channel at its intersection with the exterior surface **32** of the frame **10**, which must be from about 1.25 to about 2 times the radius of the side pull **16**, preferably from about 1.3 to about 1.8 times the radius of the side pull **16**, the horizontal dimension of the side pull channel **17** at the intersection of the channel with the bottom surface **33** of frame **10** being at least equal to the widest horizontal dimension of the channel in the same plane parallel to the exterior surface **32** of the frame **10** and cutting the channel. It is preferred that the intersection of side pull channel **17** with the exterior surface **32** of the frame **10** be rounded to the radius of curvature of at least 0.125 inch, preferably 0.25 inch.

Coil spring means **22**, when under no tension, preferably has a length substantially one-fourth the distance from attachment means **26** to eyelet **29**, a fully extended length of at least equal to the distance from attachment means **26** to eyelet **29** and, upon full extension to said distance, thereafter said coil spring means **26** fully retracts to its original unextended size. It is preferred that the strength of the spring be such that a force of from about 8 to about 12 pounds is required, more preferably about 10 pounds, to extend the spring to about 3.5 times its unextended length. A particularly preferred coil spring means in an exercise device having a longer dimension of 36 inches has a diameter of 0.75 inches, an unextended length of 8 inches and requires a 10-pound load to extend the spring by 20 inches. The interaction of the coil spring means **22**, eyelet **29** and side pull channel **17** provide the combination of spring tension and frictional resistance to result in a surprisingly healthful and invigorating exercise of the limbs and body, which exercise is unlike that performed in prior art devices which merely rely on spring tension to provide the resistance to the exercising force.

End pull exercise means comprises attachment means **26**, coil spring means **21**, end pull **20** and end pull loop **19**. The end pull means is assembled together and to the frame in essentially the same manner as the side pull means. End pull grasping means similar to side pull grasping means **14** may be attached to end pull loop **19** in the same manner as side pull grasping means **14** is attached to side pull loop **15**. The materials of which each of the elements of th end pull exercise means is made are the same as that of each of the corresponding elements of side pull exercise means except as hereinafter noted. The coil spring means **21** have the same requirements as to dimensions and characteristics as coil spring means **22** except the fully extended length is at least equal to the distance from attachment means **26** to end pull channel **18**. In all other respects the requirements of coil spring means **22** are the same as the requirements of coil spring means **21**. However, in a given exercise device coil spring means **22** may differ from coil spring means **21** within these requirements, particularly when a wider variety of exercises is desired. The force applied to end pull **20** as it passes through frame **10** via end pull channel **18** is parallel to the long dimension of frame **10**. Therefore, the force is applied in line with the direction of the extension of coil spring means **21** and there is no eyelet to change the direction of the pull. The dimensions of the end pull channel **18** are also critical to the invention and are the same as side pull channels **17** except that the depth of the channel at the interior surface of frame **10** must be

from about two to about four times the diameter of end pull **20**, preferably from about 2.5 to about 3.5 times the diameter of end pull **20**. In all other respects the dimensions of end pull channel **18** are the same as side pull channel **17**. The side pull **20** and end pull loop **19** must meet the same requirements as side pull **16** and side pull loop **15**, and the combined length of the coil spring means when full retracted, pull and pull loop are such that the base of the loop rests lightly against restriction means **34** across the pull channel, which restriction means restricts the pull from leaving the pull channel, and loop is slightly above the top surface of frame **10**. The exercise action of the end pull exercise means based upon the interaction of the coil spring means **21** and end pull channel **18** differs from the exercise action of the side pull exercise means. The lower amount of frictional resistance in the end pull exercise means increases the variety of exercise action obtainable from the exercise device of the invention.

As shown in FIG. **3** in a preferred embodimont of this invention, interior braces **28** may divide the underside of the frame into three compartments. The side two compartments contain the end and side pull exercise means. These side compartments may have an optional cover fastened thereover to minimize dust and dirt settling in the coil spring means and preventing the pulls or coil spring means from catching on the surface upon which the exercise device rests. The cover may be of any suitable fabric or flexible plastic and may not extend fully to the end of the compartment. In this manner the pull loops can be tucked under the cover when not in use. Alternatively, the loops may be tucked under the device by other suitable means so that there is no portion of the exercise means visible other than the pull channels.

The center compartment provides an optional storage compartment for the legs **13** as previously noted, by brackets **24** and **25** when not in use. Exercise bars **23** may be inserted in the pull grasping means or directly in the pull loops for further variety in exercise activity.

In a preferred embodiment of the present exercise device, there may be mounted, preferably detachably mounted, on the unattached cushion **12** a rigid surface inserted in a frame which frame partially encloses the sides of the unattached cushion **12**. The rigid surface may have a decorative surface, such as a woodgrain finish, to allow tthe cushioned device to be used as a cocktail or occasional table or a surface imprinted with markings to provide for the playing of games thereon. Illustrative examples of such games are checkers, mah jong, parchesi, etc. The rigid surface can be decorative on one side and imprinted as a game board on the other and mounted in such a manner as to allow the user to change the exposed surface from a decorative to a game board surface as desired.

FIG. **12** illustrates a preferred embodiment of the exercise device wherein the side pull **16** or the end pull **20** passes through an opening **35** in the frame **10**. To provide the necessary frictional resistance to movement of the pull a grommet **36** is inserted in the opening **35** in the frame **10**. The grommet is preferably held in place in the opening by a friction fit but may also be secured by use of a mastic, glue or fastening means. A preferred grommet is a plastic, more preferably a plastic having a durometer hardness greater than 100 on the Durometer A scale. Illustrative examples of plastics of which particularly preferred grommets are composed include polymers of styrene, high-impact styrene, styrene-acrylonitrile, acrylonitrile-butadiene-styrene, methacrylates, nylon and other polyamides as well as rigid polyvinyl chloride and hard rubber. The inside diameter of the grommet **36** is from about 1.1 to about 2 times the diameter of the end or side pull, preferably from about 1.25 to about 1.75 times the diameter of the end or side pull and still more preferably from about 1.4 to about 1.6 times the diameter of the pull. In this preferred embodiment of the exercise device it is preferred to use a button-shaped pull grasping means **37**. The size or shape of the pull grasping means **37** is not critical so long as it covers the grommet and the opening when the pull is not in use.

While the present invention has been particularly described in terms of a specific embodiment thereof, it is apparent to those skilled in the art that numerous modifications are possible without departing from the spirit of the invention and the scope of the subjoined claims.

The embodiments of the invention in which an exclusive property or privelege is claimed are defined as follows:

**1.** A portable exercise device comprising in combination a frame, support means, and exercise means, said frame having a longer and shorter dimension, bottom, interior and exterior surfaces and two ends, said frame having a bottom surface, an exterior surface and an interior surface, said frame being attached to and supporting said support means, and said frame housing exercise means, said exercise means comprising at least one side pull exercise means comprising attachment means, coil spring means, a side pull, a side pull loop, an eyelet and a side pull channel intersecting the bottom surface of the frame and being generally curvilinear in cross-section, said attachment means attaching one end of said coil spring means to one end of said frame whereby said coil spring means is positioned so that its direction of elongation is substantially parallel to the longer dimension of said frame, the other end of said coil spring means being attached to one end of said side pull, said side pull extending from said coil spring means to said eyelet in a direction substantially parallel to the longer dimension of said frame, said eyelet being attached to the other end of said frame passing and changing direction by about 90° through said eyelet and passing through said side pull channel in a direction substantially perpendicular to the longer dimension of said frame, the other end of said side pull being attached to said side pull loop, said side pull channel having a vertical depth at the interior surface of said frame of from about two to five times the maximum dimension of said side pull, a radius of curvature at the interior surface of said frame of from about 2.5 to about 4.5 times one half the maximum dimension of said side pull, a radius of curvature at the exterior surface of said frame of from about 1.25 to about 2 times one half of the maximum dimension of said side pull and a horizontal dimension at the bottom surface of said frame at least equal to the widest horizontal dimension of said channel in the plane parallel to the exterior surface of said frame and containing said horizontal dimension and said end pull exercise means comprising attachment means, coil spring means, end pull, end pull loop and end pull channel intersecting the bottom surface of the frame and being generally curvilinear in cross-section said attachment means attaching

one end of said coil spring means to one end of said frame whereby said coil spring means is positioned so that its direction of elongation is substantially parallel to the longer dimension of said frame, the other end of said coil spring means being attached to one end of said end pull, said end pull extending from said coil spring means and passing through said end pull channel in a direction substantially parallel to said longer dimension of said frame, the other end of said end pull being attached to said end pull loop, said end pull channel having a vertical depth at the interior surface of said frame of from about two to about four times the maximum dimension of the end pull, a vertical depth at the exterior surface of said frame of from about one to about two times the maximum dimension of the end pull, a radius of curvature at the interior surface of said frame of from about 2.5 to about 4.5 times one half of the maximum dimension of said end pull, a radius of curvature at the exterior surface of said frame of from about 1.25 to about 2 times one half of the maximum dimension of said end pull, and a horizontal dimension at the bottom surface of said frame at least equal to the widest horizontal dimension of said channel in the plane parallel to the exterior surface of said frame and containing said horizontal, dimension, whereby said exercise device provides healthful and invigorating exercise activity resulting from the interaction of spring tension and frictional resistance and, when not in use for exercising, provides a useful and decorative piece of furniture.

**2.** The device of claim **1** wherein the exercise means comprises two side pull exercise means and two end pull exercise means.

**3.** The device of claim **1** wherein the support means comprises an attached cushion attached to and resting within said frame and an unattached cushion resting upon the attached cushion.

**4.** The device of claim **1** wherein legs are removably attached to said frame by attachment means.

**5.** The device of claim **4** wherein the attachment means is a 2-position attachment means whereby the two legs on either end of said frame may be removed and the two legs on the other end of said frame support the frame in a slanting position.

**6.** The device of claim **4** wherein brackets are positioned on the underside of said frame for storing the legs when not in use.

**7.** The device of claim **1** wherein grasping means suitable for removable attachment to said pull loops are additionally included.

**8.** The device of claim **7** wherein an exercise bar suitable for inserting in pull loops and in grasping means is additionally included.

**9.** The device of claim **8** wherein a bracket in the underside of said frame is provided for storage of the storage bar when not in use.

**10.** The device of claim **1** wherein the coil spring means in the side pull exercise means is a coil spring which under no tension has a length of substantially one-fourth of the distance from the attachment means to the eyelet and a fully extended length of at least equal to the distance from attachment means to the eyelet and upon full extension to said distance said coil spring means fully retracts to its original unextended size and the coil spring means in the end pull exercise means is a coil spring which under no tension has a length substantially one-fourth of the distance from the attachment means to the end pull channel and a fully extended length of at least equal to the distance from attachment to the end pull channel and upon full extension to said distance said coil spring fully retracts to its original unextended size.

**11.** The device of claim **1** wherein the side pull channel and the end pull channel are openings in the frame and a grommet is inserted in each opening, said grommet having an inside diameter of from about 1.1 to about 2 times the diameter of the pull.

**12.** The device of claim **11** wherein the pull grasping means is in a button-shape.

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