United States Patent

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[54] PORTABLE, FOLDABLE EXERCISE COT
1 Claim, 3 Drawing Figs.

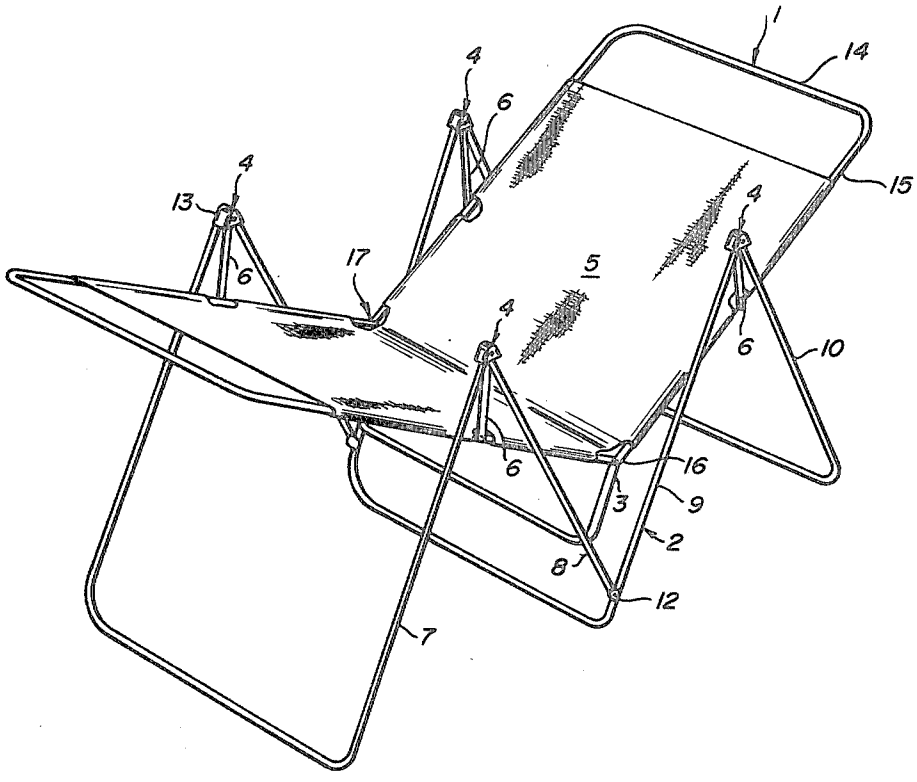
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ABSTRACT: A safer, stronger, more portable exercise device of the type supporting a jackknife motion cot on an M-shaped frame articulated at the points of the M. A novel articulated joint mechanism in the support frame, particularly at the superior points of the M, formed by two adjacent superior arms of the M-shaped frame being pivotally pinned together and having a cap stop member enclosing the pivot joint, thereby strengthening the joints, makes the device safer to operate, and permits it to be folded up into a more compact space.



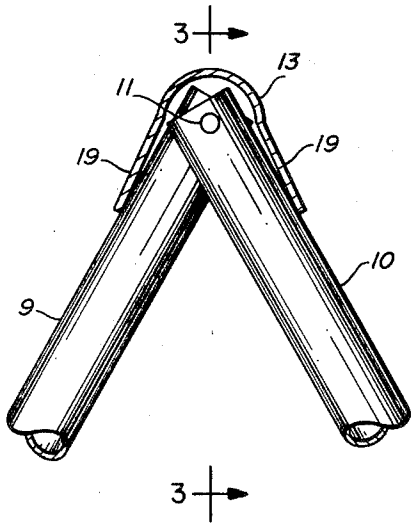


Fig. 2

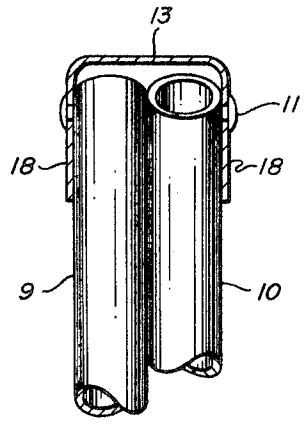
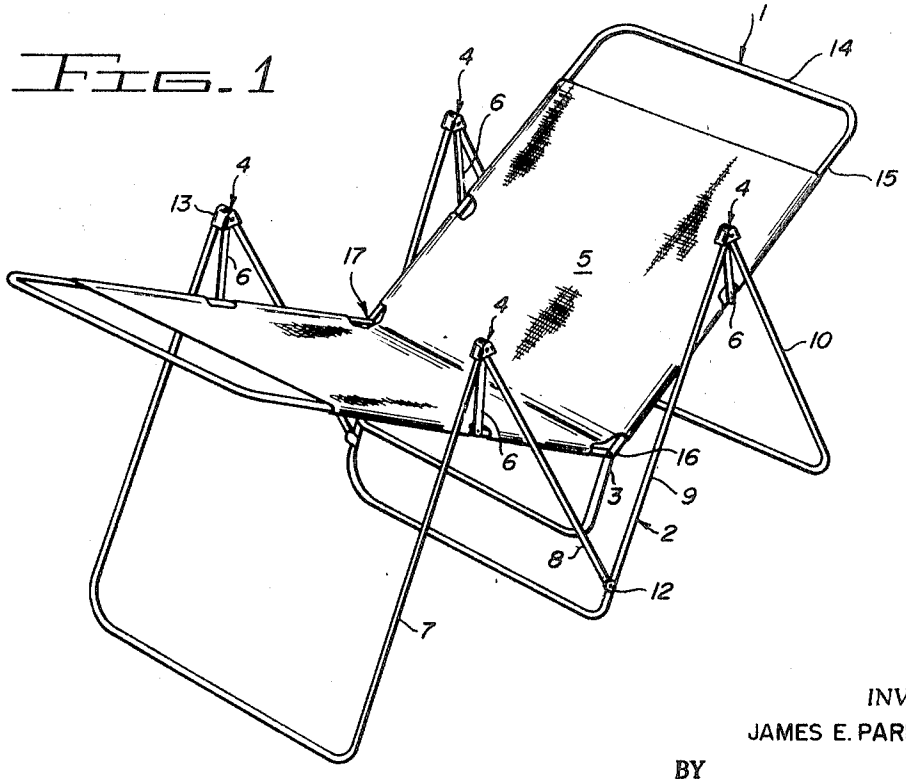


Fig. 3

Fig. 1



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PORTABLE, FOLDABLE EXERCISE COT

This invention pertains to improvement in portable exercise devices.

More specifically, the invention relates to improvements in collapsible support frames for portable exercise devices.

Prior art devices, for example, the device shown in U.S. Pat. No. 213,889, issued Apr. 22, 1969, generally consist of a cot, hinged in the middle to permit a two direction jackknife motion, a support frame and means for suspending the cot from the support frame. The support frame is hinged in various places so that it can be folded up in a more compact shape.

Among the problems in the devices known to the prior art is the problem of providing portability and compactness in an exercise device. This has been met with limited degrees of success in various ways, but all at either some sacrifice of strength or safety or of portability. In one device of the prior art, a dangerous scissors effect is created by the action of articulated joints. Another problem of the prior art is that portions of a tubular fitting have to be cut away in order to provide a receptacle for a leg segment of the M-shaped support, and the pivot pins have to be set extremely close to the end of a straight member or segment of the M-shaped support device. Both of these expediencies weaken the support.

Compactness is a highly desirable quality in such devices. When assembled for use these devices are bulky and space consuming. It is, therefore, necessary to disassemble them for storage and shipment or make them foldable to achieve compactness. The space taken by an article packaged for shipment is a prime factor in the cost of shipping it and storing it. If a device can be folded to a compact size, there is a saving in the time and expense involved in assembling and disassembling the device for storage and shipment. This quality of compactness is important not only to the manufacturer, but also to the middleman and retailer of the device and to the members of the public who ultimately use the device.

Exercise devices are intended for rugged use and it is therefore important to build as much strength and ruggedness into the device as possible.

Accordingly, it is an object of this invention to provide improvements in known exercise devices which will make the articulated joints of the separate members more rugged and durable.

It is a further object of this invention to provide improvements in the articulated joints of the support member which make the device safer to handle and to operate.

It is further an object of this invention to render such prior art exercise device more compact and more portable.

These and other, further, and more specific objects and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the invention taken in conjunction with the drawings in which:

FIG. 1 is a perspective view of the exercise device in one position of use.

FIG. 2 is a lateral view in section of one of the cap members and a perspective view of the tubular segments of the M-shaped support member and pivot pin within the cap member.

FIG. 3 is a view, rotated 90° from the view of FIG. 2, of the same cap member, tubular segments and pivot pin, with the cap member in section.

Briefly, in accordance with my invention I provide improvements in known exercise devices which include a cot member which has longitudinal side frame members having central elbows articulated to permit the ends of the cot to collapse inwardly toward each other creating a jackknifing motion in both an up and down direction. The cot is supported by a foldable cot support frame which, when extended, includes a longitudinal M-shaped tubular member along each side of the cot. Each M-shaped member is comprised of four tubular segments connected by means of pivot pins passing through the adjacent ends which form the points of the M. The longitudinal side members of the cot and the two M-shaped tubular

members of the cot support frame are tied together by rigid transverse members. These rigid transverse members also serve as means of maintaining the proper spatial relationship between the sides of the cot and the sides of the cot-support frame.

My invention is an improvement to the articulated joints of the M-shaped cot support member, wherein I have provided a cap member stop means having sidewalls and end walls. The cap members enclose the ends of the tubular segments which are held together by pivot pins journaled in the sidewalls of the cap member and the sides of the tubular segments. The end walls of the cap members diverge outwardly to define the limits of the maximum desired angular displacement of the tubular segments forming the M. Thus, the end walls define stops limiting the angular displacement of the joints of the M.

Referring now to the drawings, FIG. 1 is a perspective view of the exercise device in which a presently preferred embodiment of the invention, chosen for purposes of illustration, is depicted. The cot frame member 1 is constructed of chrome plated tubular steel. The longitudinal side members 15 are pivotally connected by means of a pivot pin 16 which joins the flattened ends 3 of the two U-shaped tubular pieces, each of which forms the end member 14 and one-half of each of the two longitudinal side members 15.

Canvas 5 is stretched over the side 15 and end frame members. Semicircular holes are cut in the canvas at the central elbows 17 to permit freedom of movement at these points. Straps 6 made of chrome plated steel are provided as means for the suspension of the cot 1 upon a cot support member 2. The two ends of each strap 6 are pivotally attached to the cot 1 and the cot support member 2. The cot support member is constructed of chrome plated tubular steel which forms an M-shaped member along each side of the cot. Each M-shaped tubular member 2 is articulated at the points of the M. The superior points 4 of the M are formed by the joinder of the adjacent ends of any two segments 7 and 8 or 9 and 10 of the M-shaped tubular member 2 by means of a pivot pin 11 which holds the ends of said segments in side by side relationship, the pin 11 lying on a transverse axis relative to the length of the device. This same pin 11 is also journaled in the sidewalls 18 of the cap member 13. The cap member 13 is also made of chrome plated steel. In the presently preferred embodiment of my invention the end walls 19 of the cap member diverge outwardly at an angle of 30° from the vertical. The restraining influence of the end walls 19 of the cap member 13 serve as a stop means which limits the angular displacement of the segments 7, 8, 9, 10 around the vertex of the angle formed by the superior points of the M.

The inferior points of the M are articulated by means of a metal tab 12 welded on to the shank of the member 9 at a suitable distance above the bottom of the segment 9. The segment 8 is pivotally connected at its lower end by means of a pin journaled through the tab 12 and the sides of the segment 8.

Having fully described the presently preferred embodiment of my invention, I CLAIM;

1. In a portable exercise device, comprising:

a cot having longitudinal side members with central elbows permitting the ends of said cot to collapse inwardly toward each other,

a foldable cot-support frame which, when extended, includes a longitudinal M-shaped tubular member along each side of said cot, each said M-shaped member including

four tubular segments connected by means of pivot pins passing through adjacent ends thereof, and

stop means limiting the maximum angular displacement of said tubular segments about said pivot pins, to retain said segments to form said M-shaped member,

the improvements whereby the strength and safety of said device are increased without loss of portability, said improvements comprising:

cap member stop means having sidewalls and end walls, said cap member enclosing the pivotally connected tubular segments with said pivot pin journaled in said sidewalls, the end walls of said cap member diverging outwardly at the maximum desired angular displacement of said tubular segments to define stops limiting said displacement to said desired maximum angle, the width of said cap member being such that the adjacent ends of said segments are positioned therewithin in side-by-side relation.