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[54] **THERAPEUTIC TRACTION APPARATUS**

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[51] **Int. Cl.** **A61h 1/02**

[58] **Field of Search** ..... 128/75, 68, 69, 84 R; 272/63

[56] **References Cited**

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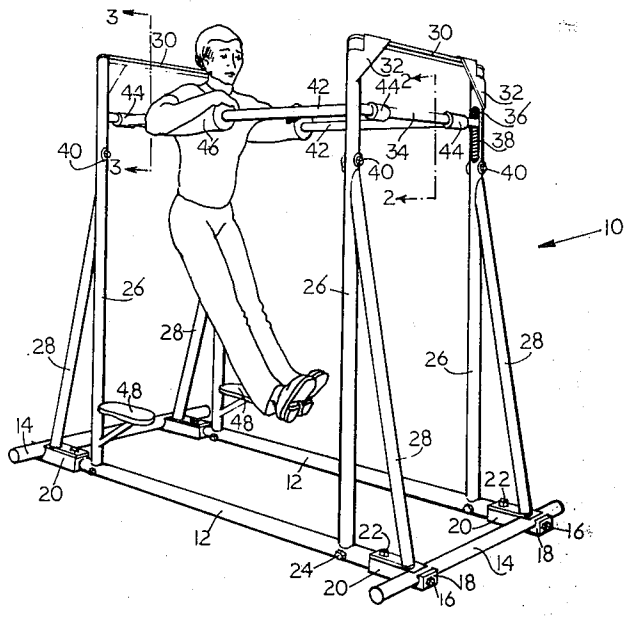
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[57] **ABSTRACT**

Apparatus to provide traction to the spine of an user has a pair of spaced apart bars, each having a bolster which enables the user to support himself thereon with the feet off the ground; the bars are supported at each end by a coiled spring.

2 Claims, 3 Drawing Figures



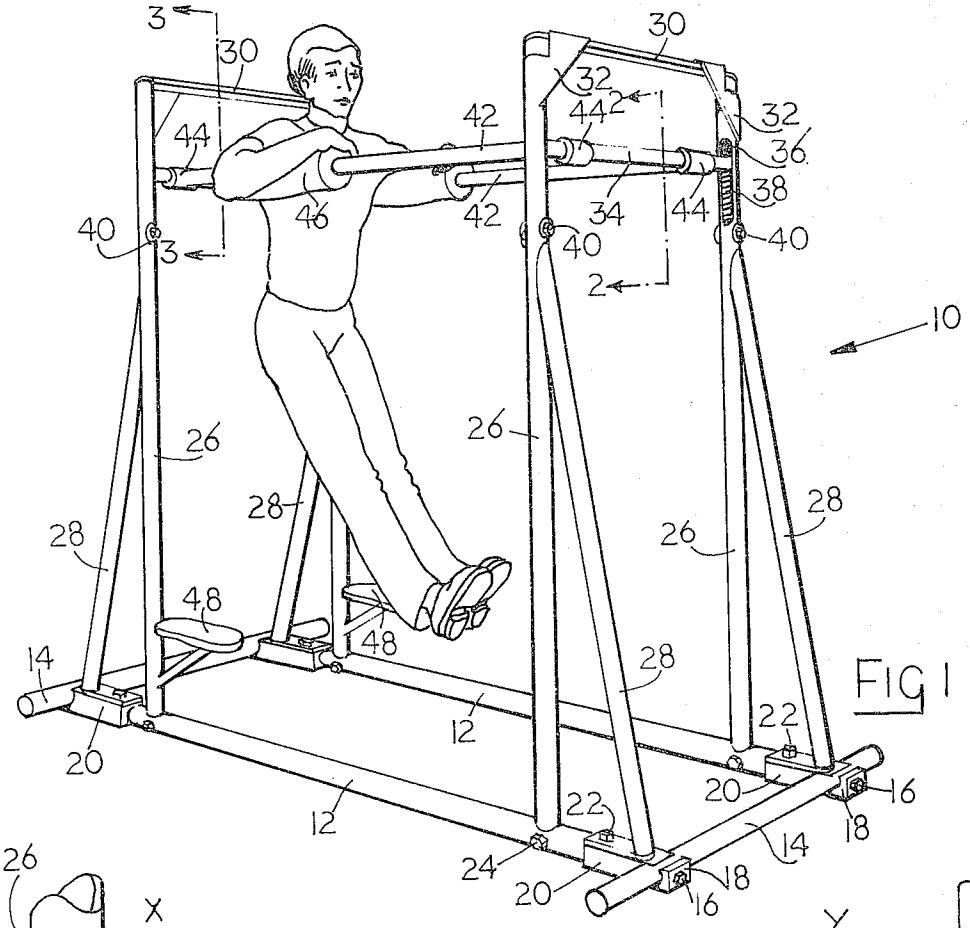


FIG 1

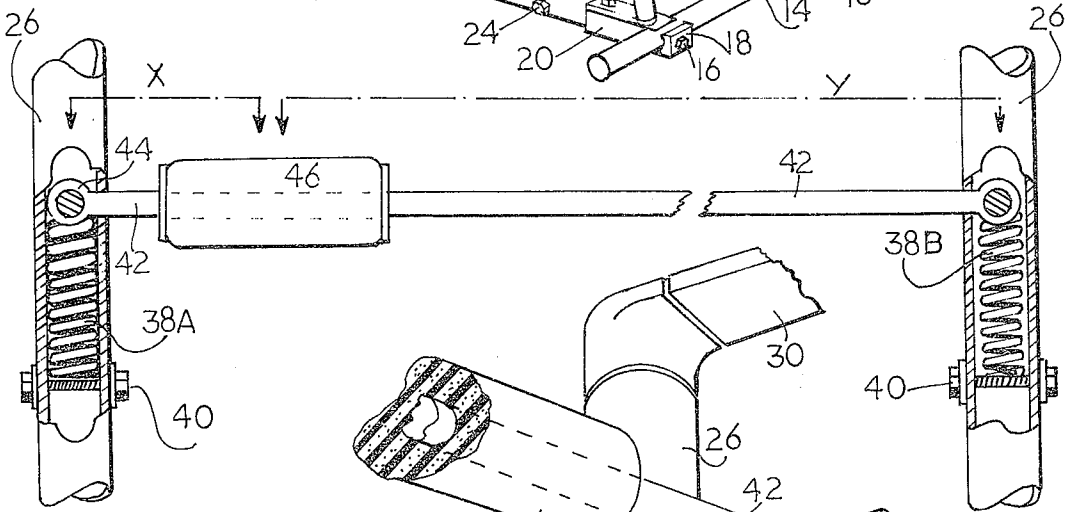


FIG 2

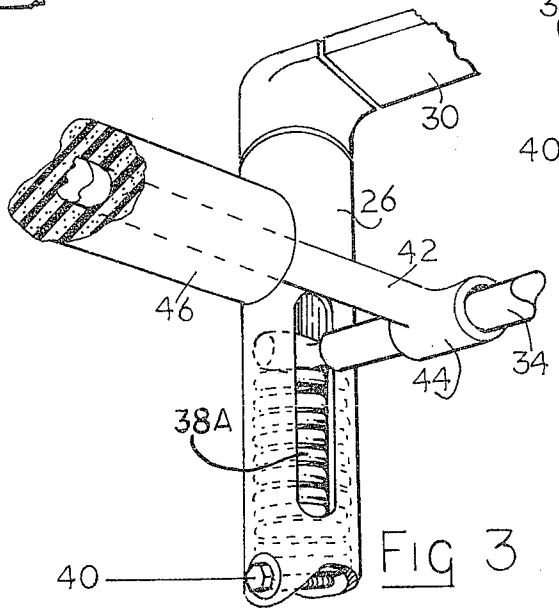


FIG 3

THERAPEUTIC TRACTION APPARATUS

FIELD OF THE INVENTION

This invention relates to apparatus designed to apply traction to the human frame and has particular relation to providing apparatus akin to parallel bars but on which an individual may subject the spine to traction by suspending the body when it is supported only by the arms.

PRIOR ART

Many forms of traction apparatus have been proposed but it appears that none have been developed which are simple to erect say in the home and also would enable the user to attain a desired result of traction in a safe manner, without requiring medical supervision.

A requirement of traction devices is that they should be capable of providing gradation in the effect on the spine and also the tension exerted on the vertebrae should always be within the limit of capacity of the spine to stand the force applied thereto.

Accordingly it is an object of the invention to provide traction apparatus which is simple to erect and also effective to provide tension on the spine of the individual using the apparatus.

The apparatus is based on the concept that the traction effect should be provided entirely by the weight of the individual needing traction and not by external weights which have to be controlled by another person when applied to the individual needing traction treatment.

The apparatus consists of a frame which includes a pair of bars spaced apart a sufficient distance to receive the shoulders of the user and supported above the floor at a level higher than the shoulders of the individual who will use the apparatus to provide traction. The ends of each bar are spring supported and each bar is provided with a cushion support for the arms of the individual using the apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in relation to the accompanying drawings in which:

FIG. 1 is a perspective view of the apparatus constructed according to the invention.

FIG. 2 is an enlarged view taken on the lines 2—2 of FIG. 1 showing the upper arm support, cross-bar and spring referred to above.

FIG. 3 is a section taken on the lines 3—3 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawings like numbers represent like parts, with letters being added to such numbers where necessary to facilitate describing the invention. The apparatus generally denoted by the numeral **10** has a substantially rectangular base frame formed of a pair of spaced apart side members **12** and a pair of spaced apart end members **14**, all made of tubular steel for reasons of strength and lightness. Each end of each side member **12** is reduced in diameter and threaded. These reduced ends extend through the end members **14** for securement thereto by a nut **16**. A washer **18** curved on its inward face in the same manner as the end tube **14** is positioned against the nut **16**.

The side members **12**, inwardly adjacent of each end member **14**, carry a rectangular sleeve **20** secured to the side member **12** by a threaded bolt **22**. Each sleeve is curved on its inward face to fit the surface of the tubular end member **14**. The lower planar surface of the sleeves **20** provide for improved engagement with the floor.

Inward of each sleeve **20** and secured to the side member **12** by a bolt **24**, is an upwardly extending member **26** which is also made of tubular steel, not only for reasons of strength and lightness, but for an additional reason explained below. An inclined member **28** is secured to each upward member **26** intermediate of the length of the latter to provide reinforcement, the lower end of each inclined member being secured to the sleeve **20**.

The pairs of upwardly extending members **26** adjacent each end member **14** are joined at their upper ends by cross-bar **30**, the connections being reinforced by gussets **32**.

Below each cross-bar **30** and spaced therefrom is another cross-bar **34** the ends of which are engaged in slots **36** provided in each upwardly extending member **26**. A coil spring **38** is located in each tubular member **26** adjacent the slot **36**. The lower end of each spring **36** is supported by a bolt **40** which passes through the upwardly extending member **26** a short distance below the lower end of the slot **36**. The ends of the cross-bars **36** are supported on the upper ends of the coil springs **38**.

The cross-bars **36** carry a spaced apart pair of horizontally disposed bars **42** which run in the same direction as the side members **12** of the base frame. The horizontal bars **42** are secured to the spring supported cross-bars **36** by collars **44** which are slidable on the cross-bars **36** so as to enable the width apart of the horizontal bars **42** to be adjusted.

Adjacent a corresponding end of each horizontal bar **42** and secured thereto in surrounding relationship is a sponge-like bolster **46**.

The use of the apparatus is clearly illustrated in FIG. 1 and the amount of extension exerted on the spine is varied simply by the user adjusting his position on the bars vertically or alternatively adjusting the width apart of the horizontal bars **42**.

To assist the user to initially position himself on the bars **42** and also to provide for rest, one of a pair of platforms **48** is secured to the upwardly extending member **26**, these platforms **48** being positioned to the rear of the user.

The compressive strength of each pair of the rear coiled springs **38***a* is the same but the compressive strength of each of the pair of front coiled springs **38***b* is lower; this is to compensate for the fact that the bolster **46** is closer to the springs **38***a* and the pressure thereon exerted by the user is greater than it is on the front springs **38***b*. As a guide the strength of springs **38***a* to springs **38***b* is the ratio of the distances Y to X as indicated in FIG. **2**.

What is claimed is as follows:

1. Apparatus to provide traction to the spine of the body of a user comprising a first and second pair of spaced apart upwardly extending members secured in fixed relationship, first spring means individual to said first pair, second spring means individual to said second pair, a pair of horizontally disposed spaced apart bars, at least one bolster means providing a padding to each

horizontal bar intermediate of its length, each horizontal bar being supported at a corresponding one end by one of said first spring means with the other end supported by one of said second spring means at a height whereby the feet of the body of a user will clear the ground when the body of a user is supported by the user's arms located on said bolster means, the ratio of the strength of the said first spring means to the strength of said second spring means increasing with the distance of said bolster means from said second spring means.

2. Apparatus to provide traction to the spine of the body of a user as claimed in claim **1**, wherein said pair of horizontally disposed spaced apart bars are joined by a pair of connecting spaced apart bars forming a frame therewith to distribute the weight of the body of a user suspended therebetween, evenly over the spring means and thereby to provide uniform traction upon the spine of the body of a user.

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