

[54] **AMBULATORY TRACTION DEVICE FOR CERVICAL PROBLEMS**

[76] Inventor: **Joseph R. L. Miller**, Box 162 R.D.
2, Canastota, N.Y. 13032

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[58] Field of Search 128/75, 87, 84, DIG. 23

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Primary Examiner—Richard A. Gaudet

Assistant Examiner—J. Yasko

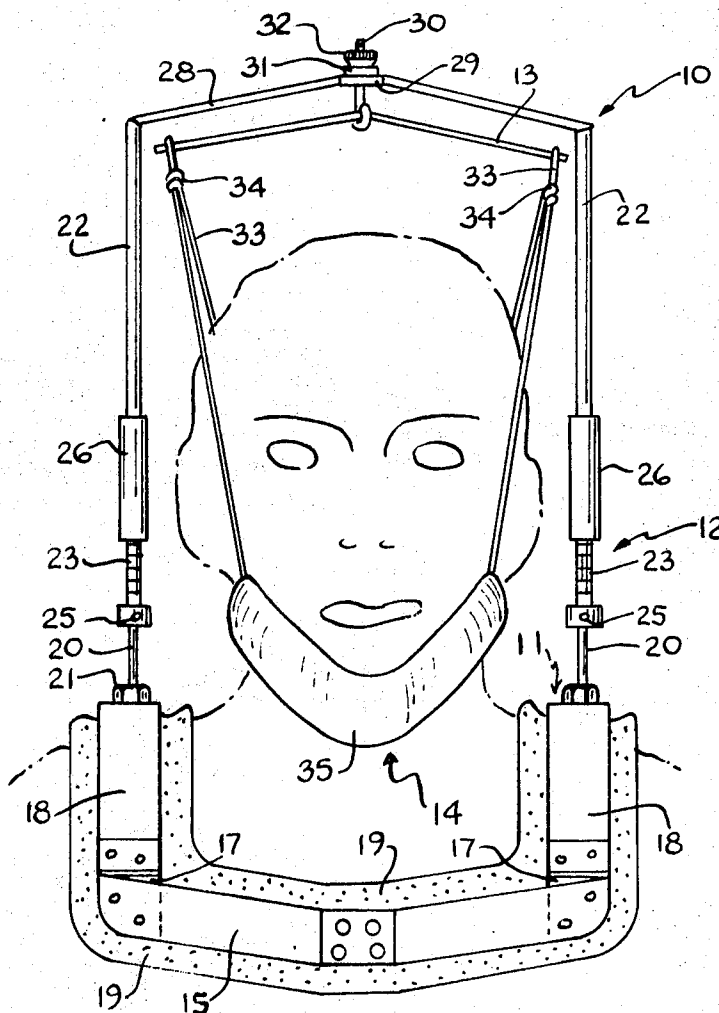
Attorney, Agent, or Firm—Bruns and Jenney

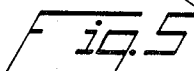
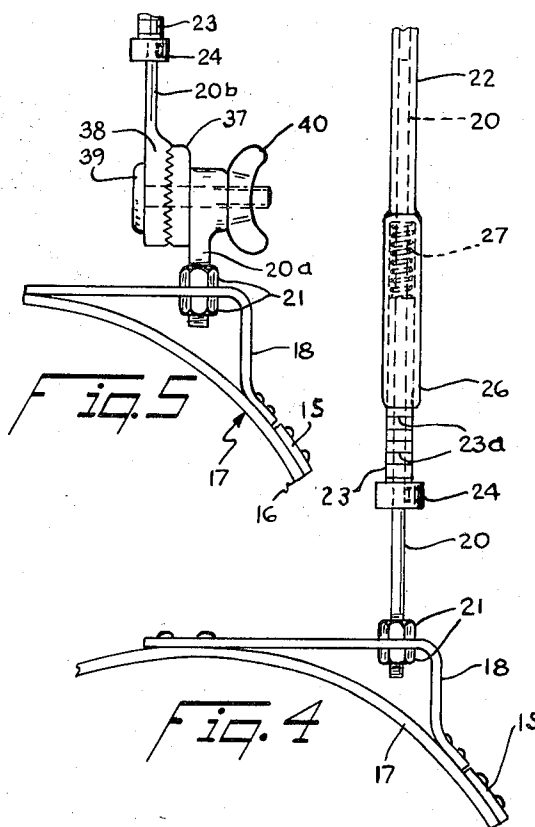
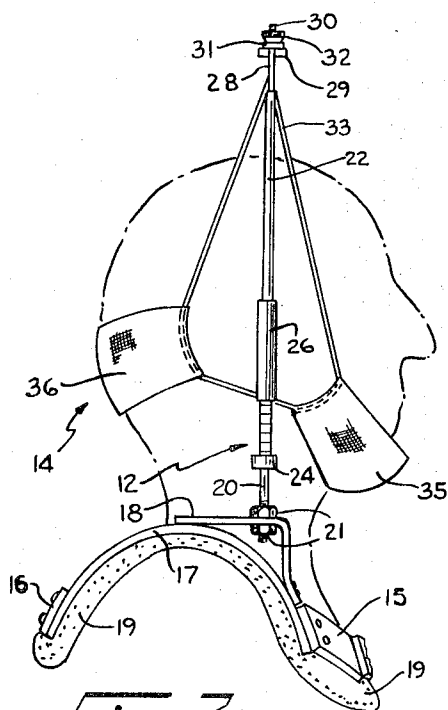
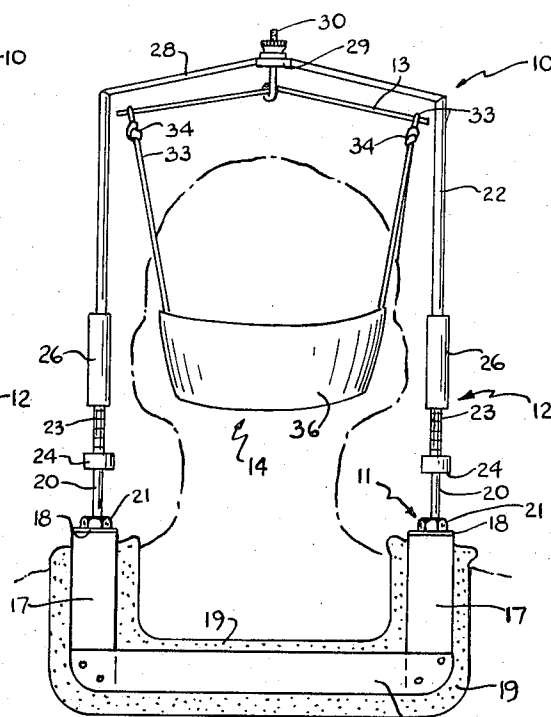
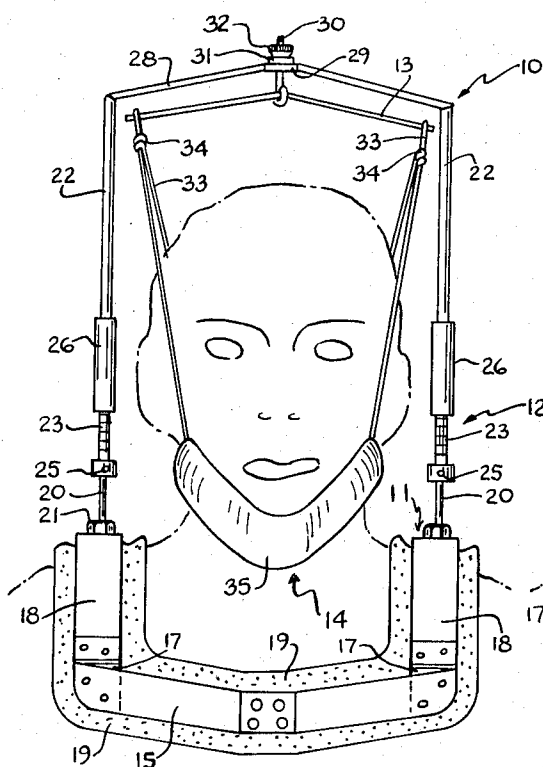
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ABSTRACT

A traction device is supported on padded cross members across the upper chest and back connected by arches over the shoulders. An inverted U-shaped assembly is secured to the arches at one end and extends to its transverse crosspiece above and closely spaced from the head. A sling support member is pendantly secured to the center of the crosspiece by means including a swivel. A sling is secured to either end of its support and includes a first flexible member passing beneath the chin and a second flexible member passing behind the head adjacent the nape of the neck. The inverted U-shaped assembly includes telescoping, substantially vertical members at either side with adjustable spring means for biasing the crosspiece upward and the swiveled connection to the sling support includes screw-and-nut means for varying the upward bias of the base portion. The connection of the ends of the U-shaped assembly to the arches may include means for adjustably inclining the assembly forwardly or backwardly.

3 Claims, 5 Drawing Figures





by one end of a coil spring 27 compressed upward by the end of pressure tube 23 which fits telescopically in the shield tube, as shown, when the device is worn. The pressure tube 23 may have scale markings 23a thereon for indicating pressure.

A crosspiece 28 forming the base of the inverted U-shaped assembly is secured at either end, as by welding, to the upper end of a respective tube 22. Crosspiece 28 is preferably inclined at either side upwardly toward its enlarged center portion 29, conforming to the bent shape of the sling support 13.

A swiveled and vertically adjustable connection between crosspiece 28 and sling support 13 is provided by an eyebolt 30 whose eye is around the sling support whose upward bend at its center is sufficient to secure the eyebolt at the center of the sling support. The threaded shank of eyebolt 30 passes up through the center portion 29 of the crosspiece and a nut 31 and locknut 32 provide means for varying the bias of springs 27 without adjusting the compression of the springs at the screws of both locking collars 24.

Each end of sling support 13 is provided with an upwardly opening notch, not shown, for securing therein a respective sling cord 33 at each side of the head. Each sling cord 33 may form a continuous loop but is preferably knotted at 34 for forming a separate smaller loop which fits in the notch of the end of the sling support as shown in FIGS. 1 and 2. The looped sling cord passes through the end of a chin pad 35 and a neck pad 36, the pads being furnished in tubular form and fashioned from a soft textile material, as shown in FIG. 3.

As shown in FIG. 5, when the patient's condition requires that his head be supported inclined forwardly or rearwardly from the vertical, means are provided for adjusting the angle at which rods 20 extend upwardly from the strap 18. Rod 20a, secured to the strap by nuts 21, has a shortened shank and its upper portion 37 is formed in the shape of a disk having a serrated surface facing a similar serrated surface of a disk at 38 formed at the lower end of the upper portion 20b of the rod which extends up into the tube 22.

A bolt 39 extends axially through appropriate holes in the disks 37 and 38 and a cooperating wingnut 40 provides means for adjustably locking the disks together as is usual in such devices.

In operation, the traction device 10 has its support portion 11 shaped to conform to the torso of the patient. The patient may place the device on his shoulders and attach the sling portion 14 to his head and connect the loops 33 to the sling support 13. Then, using a suitable wrench, the pressure tubes 23 may be adjusted by reading the scale marks 23a on each pressure tube. Usually a total pressure of 4 to 5 pounds is required, one-half at each side, to carry the weight of the head and the scale marks 23a may each indicate an additional 1 pound on that side as the pressure tube 23 is moved upward with respect to the bottom of shield tube 26.

When additional pressure is required for a limited time as, for instance, when the patient is riding in a car,

he may reach up and unlock nut 32, tighten nut 31 and relock the locknut 32.

If an angular adjustment of the assembly 12 is required, the adjustment of disks 37 and 38 is preferably made in conference between doctor and patient and the adjustment usually remains unchanged thereafter.

While the device 10 is usually worn only when the patient is ambulatory, it also may be worn by a bedridden patient.

I claim:

1. A traction device for supporting the head of an ambulatory patient having cervical problems, comprising: a torso-contacting portion having a padded chest contacting bar and a padded back contacting bar connected at each side by an over-the-shoulder arch member, an inverted U-shaped assembly having a leg at each side connected at the bottom to a respective arch member, the upper ends of the legs being connected by a crosspiece adapted to be narrowly spaced above the head, a transverse sling support bar pendantly supported from the center of the crosspiece, an eyebolt having its eye around the support rod and its threaded shank extending through a hole in the crosspiece, a nut and locknut adjustably securing the eyebolt in place, a sling including an under-the-chin pad and a back-of-the-neck pad pendantly supported at each side from the respective ends of the support rod, each leg of the U-shaped assembly including a rod portion secured to an arch member and a tube portion connected to the crosspiece, the tube portion having an enlarged shield tube secured to the lower end thereof, the rod portion being telescopically received in the tube portion, a coil spring within the shield tube and around the rod portion, and a pressure tube around the rod portion having its upper end adapted to engage and compress the spring against the lower end of the tube portion, the lower end of the pressure tube being secured to a collar adapted to be adjustably secured to the rod portion for adjusting the compression of the spring.

2. The traction device defined in claim 1 wherein the sling comprises tubular pads of soft flexible material supported from the support rod at each side by a cord looped around the support rod and passing successively through the tubular pads in a continuous loop having its ends secured together adjacent the support rod.

3. The traction device defined in claim 1 wherein the rod portion of each leg of the U-shaped assembly comprises a lower portion secured to an arch member and having a disk portion at its upper end, the disk portion having a serrated face facing the serrated face of a similar disk portion at the lower end of an upper rod portion telescopically received in the tube portion of the leg, a screw extending transversely and axially through a hole in the disk portions, and a wing nut cooperating with the screw for forcing the serrated surfaces of the disk portions together, whereby the forward and back inclination of each leg may be adjusted.

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