ANCHORING DEVICE FOR HOSPITAL BED

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ABSTRACT

To prevent wheeled beds from rolling away when a patient attempts to climb on, an anchoring device is attached to the footboard or other convenient position. A vertical rod is slidably mounted in the casing of the device and preferably biased upward by a spring. A handle on the rod extends out through a vertical slot in the casing and may be depressed to lower the rod and turned sideward into horizontal slots to lock the rod in depressed position. A suction cup on the lower end of the rod anchors the rod and thus the bed to the floor when the handle is depressed. The device may be inactivated by turning the handle outward of the horizontal slots and lifting the rod either manually or by spring action. A hole in the suction cup is located so that when the rod is fully depressed the rubber surrounding the hole prevents air from entering the cup, but, when the rod is slightly elevated, air enters the cup through the hole, breaking the vacuum and preventing floor tiles from being pulled off the floor. The device may be attached to gurneys, wheelchairs and other wheeled equipment.

5 Claims, 5 Drawing Figures
ANCHORING DEVICE FOR HOSPITAL BED

This invention relates to a new and improved anchoring device for hospital beds.

One of the problems in hospital and convalescent homes is the danger of patients attempting to climb into beds, the beds rolling away from the patient, and the patient falling and injuring himself. This is a particular problem in that hospital beds are usually high off the ground (compared with residence beds) and are mounted on freely moving casters to facilitate the work of nurses and attendants. Although the casters are usually provided with brakes, the brakes frequently do not hold, with the result that as the patient tries to climb into bed while unattended the bed rolls away.

Accordingly, a principal object of the present invention is to provide a device to detachably anchor a bed to the floor and to latch the device in anchoring position. A further object of the invention is to provide a device which is easily moved between activated and retracted positions with little manual effort required. Further, a latch provides a visible indication to an attendant even at a distance, whether the device is in activated or retracted position so that if it is in the latter position the attendant may warn a patient attempting to climb into a bed.

Another feature of the invention is the fact that the device may be easily attached to standard hospital beds either at the footboard or other convenient location without modification of the bed. When the device is deactivated, the bed can be rolled around in the same manner as conventional beds.

Another feature of the invention is the provision of a suction cup on the lower end of the device which anchors the device and hence the bed to the floor. The cup has a hole in the skirt which releases the suction when the device is only partly deactivated. This novel feature of the suction device prevents floor tiles from being pulled off the floor as the device is being deactivated and the suction cup is being raised.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

FIG. 1 is a fragmentary prospective view of a hospital bed with the device installed and in operative position.

FIG. 2 is a view similar to FIG. 1 showing the device in retracted position.

FIG. 3 is an enlarged vertical sectional view through the device.

FIG. 4 is an enlarged fragmentary view of the suction cup broken away in section to reveal internal construction with the cup in retracted position.

FIG. 5 is a view similar to FIG. 4 showing the suction cup in activated position.

Hospital bed 11 is normally provided with casters 12 on the lower ends of the legs. These being frequently provided with brakes (not shown) which are replaced or supplemented by the present invention. The attachment 14 of the present invention is shown fixed to the footboard 13 or other convenient position on the bed.

Attachment 14 has a casing 16 which is here shown to be made of square tubing. In the back 17 of the casing 16 two series of tapped holes 18 are provided for height adjustment of the device to accommodate beds of different heights. Brackets 19 are attached to the back 17 by means of screws 21 which fit into the appropriate holes 18. The brackets 19 are themselves attached to footboard 13 by means of screws 22.

Vertically slideable within casing 16 is a rod 26 which extends out through plug 27 at the top and plug 28 at the bottom. Plugs 27 and 28 are secured in position in casing 16 by means of bolts 29. Welded or otherwise attached to rod 26 is a handle 27 projecting radially thereof and provided with a knob 32 at its outer end. The front of casing 16 is formed with a vertical slot 33 through which the handle 31 projects and the sides of casing 16 on either side of the bottom of slot 13 are formed with side slots 34. Within casing 16 and bearing against bottom plug 29 is a helical spring 36 wound around rod 26 and bearing against a washer 37 held in place on rod 26 by cotter pin 38 or other convenient means. Thus spring 36 biases handle 31 upwardly in slot 33.

On the bottom of rod 26 is suction cup 41 which has ferrule 42 on its upper end. Pin 43 extending from the bottom end of rod 26 extends through the top 44 of cup 41 into the hollow of the cup and is attached thereto by fastener 46. Depending from top 44 is a skirt 47 which is flexible and is preferably provided with a hole 48 adjacent but spaced inward from its perimeter.

In use, when the device is in retracted position as shown in FIGS. 2, 3 and 4, the bed 11 may be moved around on its casters 12 without interference. When it is necessary to anchor the bed 11 to the floor, the attendant (or patient) depresses handle 31 to the bottom of slot 33 and then turns it in either direction in one of side slots 34 to the position shown in FIG. 1. This latches rod 26 in down position. When the rod 26 is thus depressed, the skirt 47 of cup 41 is distorted and flattened as shown in FIG. 5. It is important to note that the hole 48 is out of communication with the interior of the cup because the rubber surrounding hole 48 is flattened against the floor. As thus positioned (see FIG. 1) the device 14 is anchored to the floor and the bed 11 is likewise anchored. Thus patients trying to climb into the bed 11 are not endangered by the bed rolling away on its casters 12.

When it is necessary to move the bed, the attendant turns the handle 31 to its outward projecting position shown in FIGS. 2 and 3 and the spring 36 (which may or may not be assisted by manual movement of the attendant) raises the cup 41 to the position of FIG. 4. It will be seen that shortly after the cup 41 begins to be elevated the hole 48 opens communication between the interior of the cup and the atmosphere. Hospital rooms frequently have floor tiles of various types and there is a possibility, were it not for the hole 48, that raising the cup 41 from the depressed position of FIG. 5 to the elevated position of FIG. 4 might pull the tiles on the floor off. The hole 48 prevents this from occurring.

An attendant or the patient may easily observe whether the handle 31 is projecting out as shown in FIG. 13 or parallel to the footboard 13 as shown in FIG. 1 and thus have the opportunity to warn the patient of danger.

The term "bed" has been used in the foregoing description and appended claims and a hospital bed is illustrated in the accompanying drawings. This term is
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intended to include other wheeled equipment, including wheelchairs and gurneys.

What is claimed is:

1. A device to restrain unintentional movement of a bed or the like relative to the floor comprising a casing formed with a vertically extending first slot, bracket means to attach said casing to said bed, a rod vertically slideable within said casing between an operative and a retracted position, a handle on said rod extending out of said slot for manual movement of said rod between retracted and operative positions, latch means on said handle and said casing to hold said rod in operative position, and floor-engaging means on the lower end of said rod to secure said rod to the floor, said latch means comprising at least one side slot communicating with the lower end of said first slot, whereby when said rod is in operative position said handle may be turned to enter said side slot and said rod will not move to retracted position until said handle is turned to its original direction.

2. A device according to claim 1 in which said casing is formed on its back with a series of vertically spaced tapped holes and said bracket means includes a screw to engage one of said holes whereby the height of said casing from the floor may be varied.

3. A device according to claim 1 which further comprises a spring in said casing biasing said rod to retracted position.

4. A device according to claim 1 in which said floor-engaging means comprises a flexible suction cup attached to the lower end of said rod.

5. A device to restrain unintentional movement of a bed or the like relative to the floor comprising a casing formed with a vertically extending slot, bracket means to attach said casing to said bed, a rod vertically slideable within said casing between an operative and a retracted position, a handle on said rod extending out of said slot for manual movement of said rod between retracted and operative positions, latch means on said handle and said casing to hold said rod in operative position, and a flexible suction cup on the lower end of said rod to secure said rod to the floor, said cup having a skirt formed with a hole spaced inward from the peripheral edge of said skirt, whereby when said cup is fully depressed the interior of said cup is sealed off from atmosphere by the material of said cup surrounding said hole and when said cup is partly elevated the skirt flexes so that said hole is partly raised from the floor to break the vacuum in said cup and prevent further raising of said cup from pulling up tiles on said floor.

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