April 24, 1962 R. I. BOYER 3,030,639

CLAMP FOR HOSPITAL BEDS

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Fig. 1.

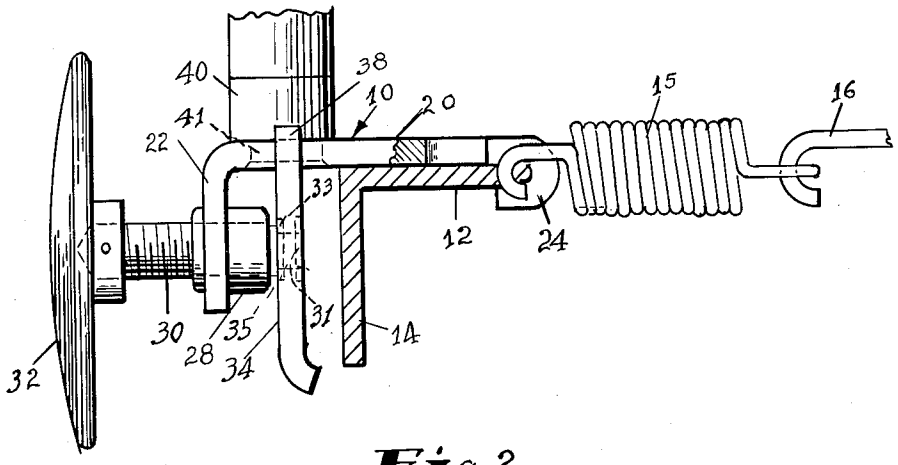



Fig. 2.

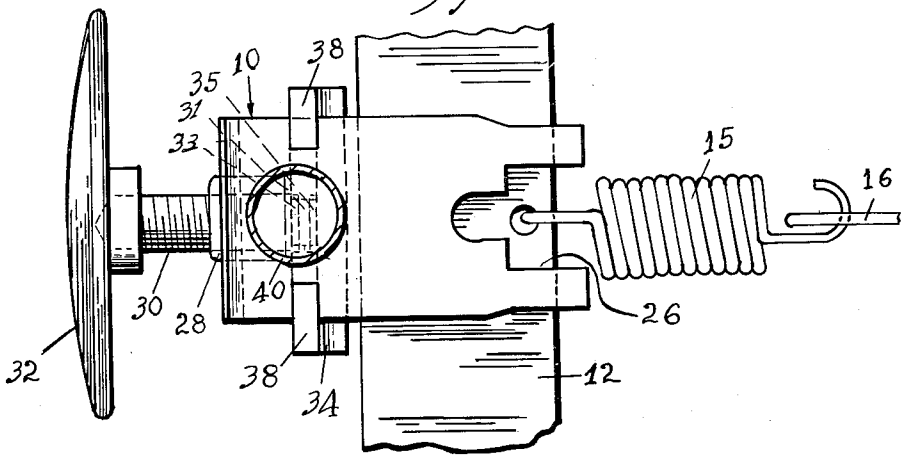
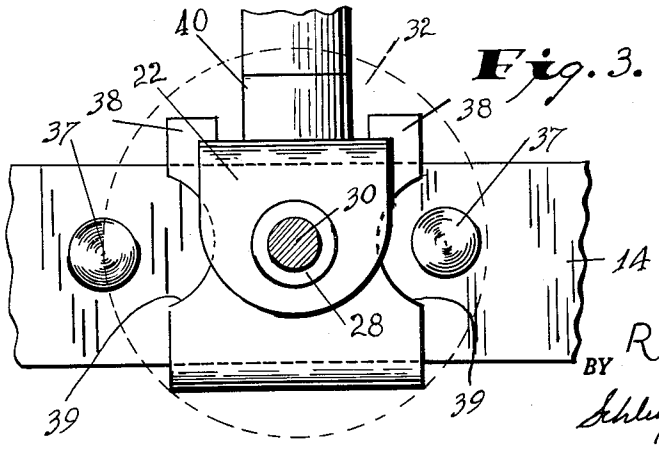



Fig. 3.



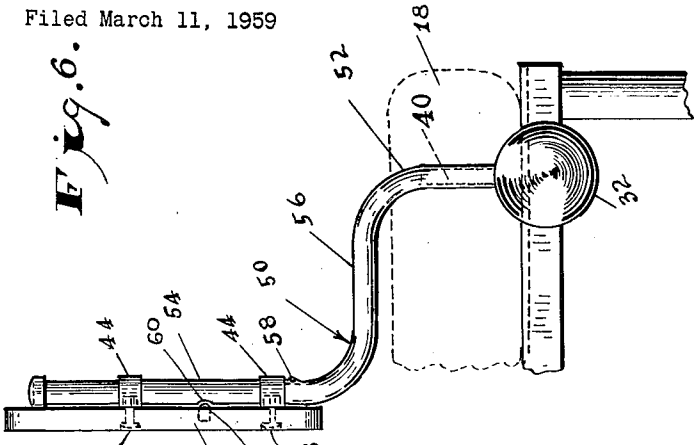

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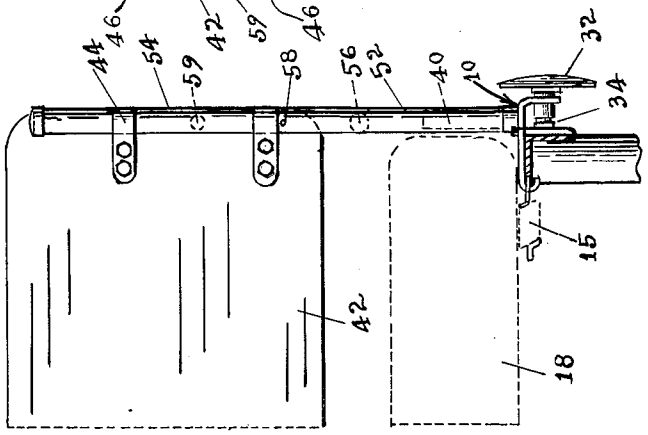
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Fig. 6.





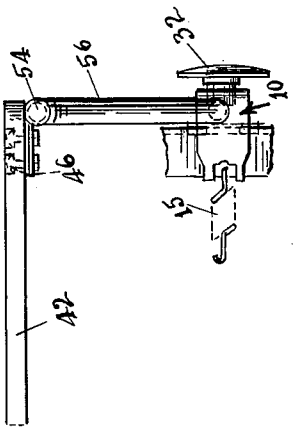


Fig. 4.

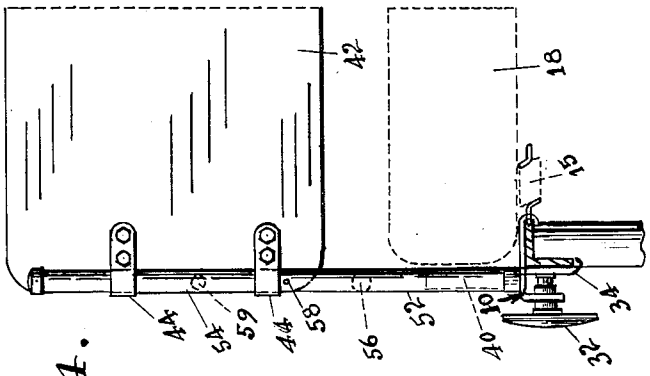
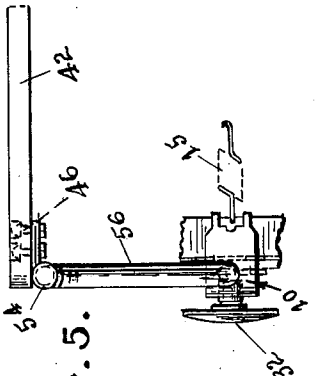


Fig. 5.



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# CLAMP FOR HOSPITAL BEDS

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6 Claims. (Cl. 5—327)

This invention relates to a clamp, and more particularly to a clamp for mounting lamps, foot-supports, and similar articles on hospital beds.

It is an object of my invention to provide an inexpensive clamp which can be readily mounted on a hospital bed, which will accommodate and support various articles thereon, and which can be adjustably mounted on a hospital bed at a plurality of positions.

In the conventional construction of a hospital bed the mattress is supported on a plurality of thin, metal slats supported by springs mounted on a rectangularly shaped frame formed from lengths of angle iron. In carrying out my invention in its preferred form, I provide a clamp mountable on the bed frame and comprising a generally L-shaped bracket adapted to engage and grip said frame. Said bracket carries an adjusting screw axially movable in a plane parallel to the plane of the bed frame, and carrying at its inner end a plate movable with said screw and adapted to bear against the bed frame for bindingly gripping said frame between the bracket and said plate. Conveniently, the plate is supported on the bracket and guided thereby during its movements with respect to said bracket. A stud is mounted on the bracket for supporting accessory articles on the clamp.

In using my clamp to support a foot-board on a hospital bed, I employ a pair of clamps mounted on opposite sides of the bed frame. The stud on each of the clamps is received in a support adjustably mounted on each end of the foot-board to support said foot-board immediately above and normal to the mattress. Thus, the position of the foot-board with respect to the mattress may be adjusted by adjustment of the clamps and/or the supports interconnecting said clamps to the foot-board.

The accompanying drawings illustrate my invention. In such drawings:

FIG. 1 is a side elevation of a clamp embodying my invention with portions thereof shown in section;

FIG. 2 is a top plan view of the clamp shown in FIG. 1;

FIG. 3 is an end elevation of the clamp shown in FIG. 1, but with the adjusting knob shown in phantom;

FIG. 4 is a fragmentary end elevation showing a clamp-foot-board assembly embodying my invention;

FIG. 5 is a fragmentary top plan view of the clamp-foot-board assembly shown in FIG. 4; and

FIG. 6 is an end elevation of the clamp-foot-board assembly shown in FIG. 4.

As illustrated, my clamp 10 is adapted to be used on hospital beds for holding accessory articles thereon. Such beds conventionally employ a rectangularly shaped frame constructed from lengths of angle iron having pairs of arms 12 and 14. A plurality of spaced holes are formed in the horizontally disposed arms 12 of the frame to receive the ends of the springs 15 which are connected at their opposite ends to thin, metal slats 16 adapted to support a mattress 18.

As shown, my clamp 10 comprises a generally L-shaped bracket having an upper leg 20 adapted to rest on one of the arms 12 of the bed frame, and a leg 22 adapted to be disposed in a plane parallel with the frame arm 14 and spaced outwardly therefrom. The end of the leg 20 opposite the leg 22 is bent into a generally U-shape to form a lip 24 adapted to be hooked over the inner edge of the frame arm 12. As shown in FIG. 2, a slot 26 is formed in the bracket leg 20 to permit the clamp to be disposed on the bed frame in the plane of



one of the springs 15. Thus, the clamp 10 may be disposed at a plurality of positions along the bed frame irrespective of the positioning of the springs 15.

The bracket leg 22 is provided with a threaded sleeve 28 fixedly mounted therein and carrying an adjusting screw 30 axially movable in a plane parallel to the plane of the bracket leg 20. In order to facilitate movement of the adjusting screw 30, a knob 32 is mounted on the outer end thereof in any convenient manner. The opposite or inner end of the adjusting screw 30 is rotatably secured to a plate 34. To this end, a portion 31 of the screw 30 adjacent its inner end has a reduced diameter and is carried in a shouldered opening formed in the plate 34. The screw is rotatably held in the plate opening by a washer 33 interposed between the outwardly disposed shoulder in the plate opening and the shoulder on the screw formed by the reduced diameter screw portion 31, and by a second washer 35 abutting the inwardly disposed shoulder in the plate opening and secured to the end of the screw as by welding. As shown in FIG. 1, the end of the plate 34 remote from the bracket leg 20 is curved toward the lip 24 so that upon movement of said plate toward the frame arm 14 the face of the plate will bear against the arm 14 and its curved end will be received over the lower edge of said frame arm. Thus, upon rotating the screw 30 to move it axially inwardly, the plate 34 will be carried in a like direction against the frame arm 14 so that the frame will be bindingly gripped between the plate 34 and the upper bracket leg 20, with the curved end of the plate 34 acting in combination with the lip 24 to lock the clamp over the edges of the frame arms 10 and 12. The plate 34 is slidably guided and supported on the bracket during its clamping and unclamping movements, by a pair of opposed hooks 38 on the upper edge of the plate slidable along the upper face of the bracket leg 20. As shown in FIG. 3, the heads 37 of a plurality of rivets used to mount a tilting mechanism on the bed frame project outwardly from the frame arm 14. In order to lessen the possibility of said rivets holding the plate away from the frame, the lateral edges of the plate are recessed, as at 39.

To support an accessory article on the clamp 10, and thus on the bed to which the clamp is secured, an upstanding stud 40 is rigidly mounted on the bracket leg 20 adjacent the outer end thereof. The stud 40 may be mounted on the clamp in any convenient manner. For example, as shown in FIG. 1, the lower end of the stud has a reduced diameter, as at 41, which extends through an opening in the bracket leg 20 and peened over or welded to the edges of said opening in the lower face of the leg 20.

As shown in the drawings, my invention contemplates the use of a clamp-foot-board assembly to support a foot-board 42 at a plurality of adjustable positions on a hospital bed. In such an assembly, I mount a pair of clamps 10 on opposite sides of the bed frame and mount the foot-board 42 thereon. The foot-board 42 comprises an elongated panel or board having sleeved brackets 44 rigidly mounted on one of its faces adjacent the opposite ends thereof. Conveniently, the brackets 44 are mounted on the board 42 by bolts 46 countersunk in the face of the board 42 opposite the brackets 44 to give the face of the board opposite said brackets a smooth surface across its entire extent.

The board 42 is supported and carried on the clamps 10 by a pair of tubular supports 50 each having a lower stretch 52 rotatably received on one of the clamp studs 40. The upper stretch 54 of each of the supports is offset from the stretch 52 by means of a transverse medial stretch 56, and is rotatably received in the sleeved brackets 44 at one end of the board. With the board thus mount-

ed on the clamps, the transverse stretched **56** will be disposed immediately above the mattress **18** and the board will be supported in a position normal to said mattress. By providing such rotational interconnections between the clamps **10** and the supports **50** and between said supports and the board **42**, said board may be used on beds of varying widths. This rotational adjustment in combination with the adjustable positioning of the clamps **10** on the bed frame further permits the board **42** to be disposed on the bed at a plurality of longitudinally adjustable positions.

Conveniently, the board **42** is axially adjustable on the upper stretches **54** of the supports **50** for adjusting the height of the board above the mattress **18**. To this end, I provide a pair of spring-detents **59** engageable with cooperating recesses **60** formed in the upper support stretches **54** for releasably holding the board **42** in an adjusted position thereon. When the detents **59** are out of engagement with their recesses **60**, the board **42** may be held in a second position of adjustment by bosses **58** formed on the support stretches **54** and engageable with the lowermost brackets **44** on the board.

In using my clamps to support other articles on the bed, the base elements of such other articles are merely placed over the studs **40** in the same manner as the supports **50**.

I claim as my invention:

1. In a clamp, a bracket having a first leg provided with an offset lip along an edge thereof, a second leg normal to said first leg, a threaded sleeve in said second leg, an adjusting screw carried in said sleeve and axially movable in a plane parallel to the plane of the first leg, a plate carried on said adjusting screw and movable therewith for bindingly gripping an object between the plate and said offset lip, and means fixedly mounted on the upper face of said first leg of said bracket for supporting an article on the clamp, said plate having a pair of fingers extending over the lateral edges of said first leg and slidably carried along the upper face thereof.

2. In a clamp, a bracket having a first leg provided with an offset lip along an edge thereof, a second leg normal to said first leg, an adjusting screw threadably supported in said second leg and axially movable in a plane parallel to the plane of the first leg, a plate carried on said adjusting screw and movable therewith for bindingly gripping an L-shaped object between the plate and said offset lip, said plate having its end remote from said first leg curved toward said offset lip whereby said plate end and the offset lip are receivable over the edges of said L-shaped object guide means on said plate slidably engaging the lateral edges of the upper face of said first leg for guiding said plate during movement with respect to the first leg, and means fixedly mounted on the upper face of said first leg of said bracket for supporting an article on the clamp.

3. In a clamp, an L-shaped bracket having a first and a second leg normal to each other, said first leg having a slot extending inwardly from its edge opposite the second leg, a lip on the edge of the first leg opposite the second leg, an adjusting screw carried by said second leg, and axially movable in a plane parallel to the plane of the first leg, a plate carried on said adjusting screw and movable therewith for bindingly gripping an object between the plate and said offset lip, said plate having a pair of opposed inwardly projecting fingers at its upper end slidably carried along the lateral edges of the upper face of said first leg and having a pair of inwardly extending opposed recesses along its lateral edges below said fingers, and means fixedly mounted on the upper face of said bracket between said slot and said second leg for supporting an article on the clamp.

4. In a foot-board assembly for a bed, the combination of a pair of clamps, each comprising an L-shaped bracket having a first and a second leg normal to each other, a lip on the end of said first leg opposite the second leg, an adjusting screw carried by said second leg and axially movable in a plane parallel to the plane of the first leg, means on said adjusting screw and movable therewith for bindingly gripping a bed frame side between said means and said lip, an upstanding stud fixedly mounted on said first leg, the upper end of said stud being disposed below the upper face of a mattress supported on the bed; and a foot-board having an elongated panel adapted to extend transversely of the bed in a plane normal to the plane of the mattress, mounting sleeves on each end of said panel having axes parallel to said panel, and a tubular support at each end of said panel having their upper ends rotatably received in said sleeves and their lower ends rotatably receivable on the studs of said pair of clamps to support the panel on the clamps above the bed, the upper and lower ends of each of said tubular supports being axially offset from each other and said supports being simultaneously rotatable with respect to said panel and their respective clamp.

5. The invention as set forth in claim 4 with the addition that the offset ends of the tubular supports received in the sleeves are provided with means for axially positioning said sleeves thereon for adjusting the distance between the board and a mattress supported on the bed.

6. The invention as set forth in claim 4 in which the intermediate stretch interposed between the offset ends of each of said supports is disposed parallel to and only slightly above the upper face of a mattress supported on the bed.

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