Aug. 2, 1949. D. C. TRAVIS 2,478,028

HOSPITAL BED SIDE GUARD

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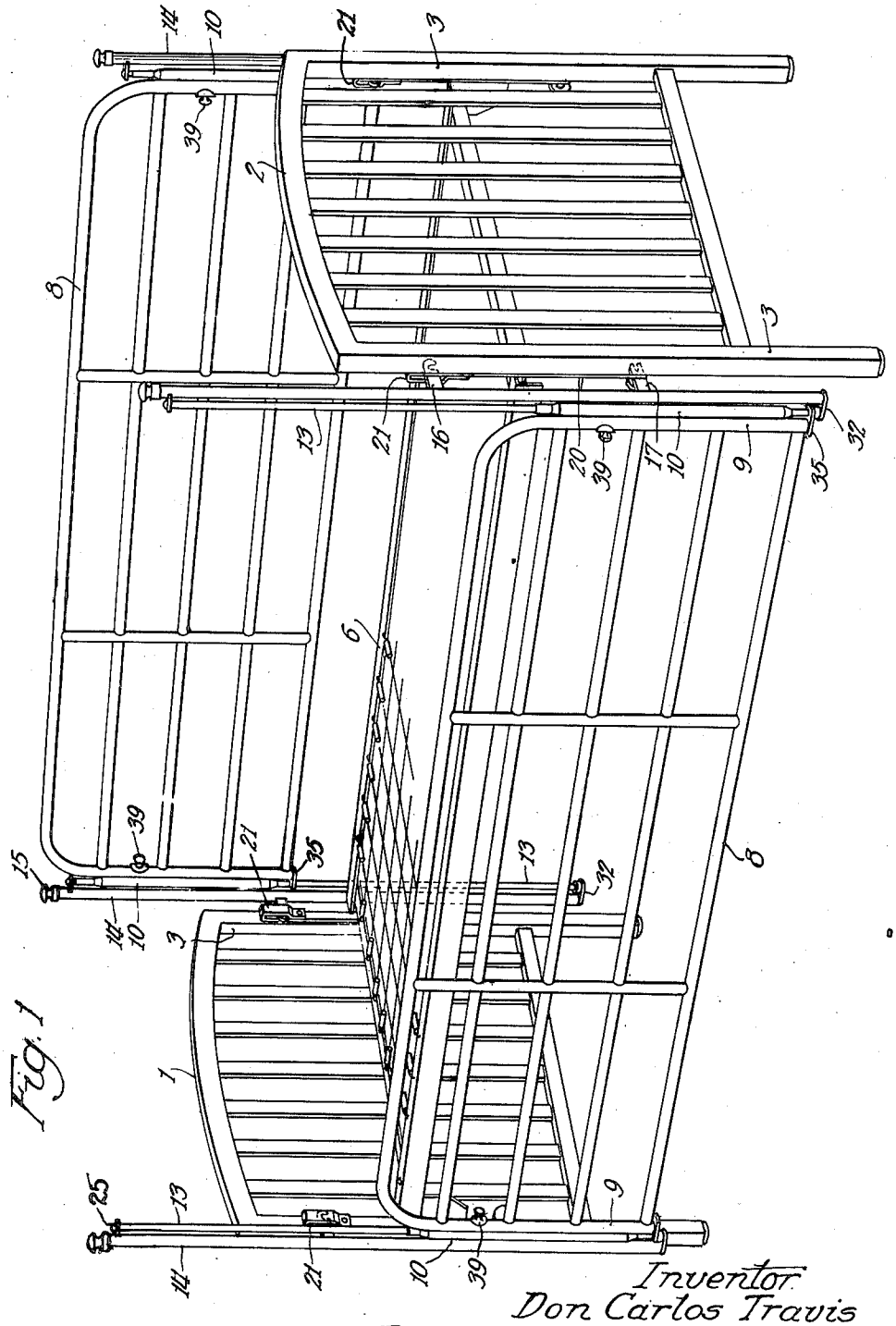


Fig. 1

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Fig. 2

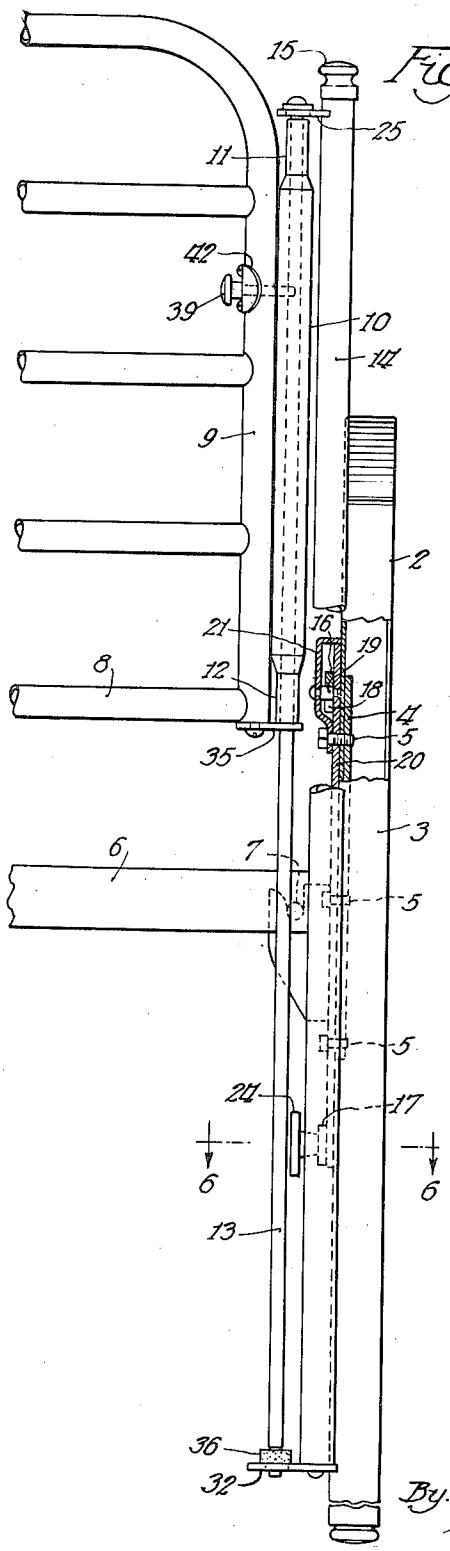
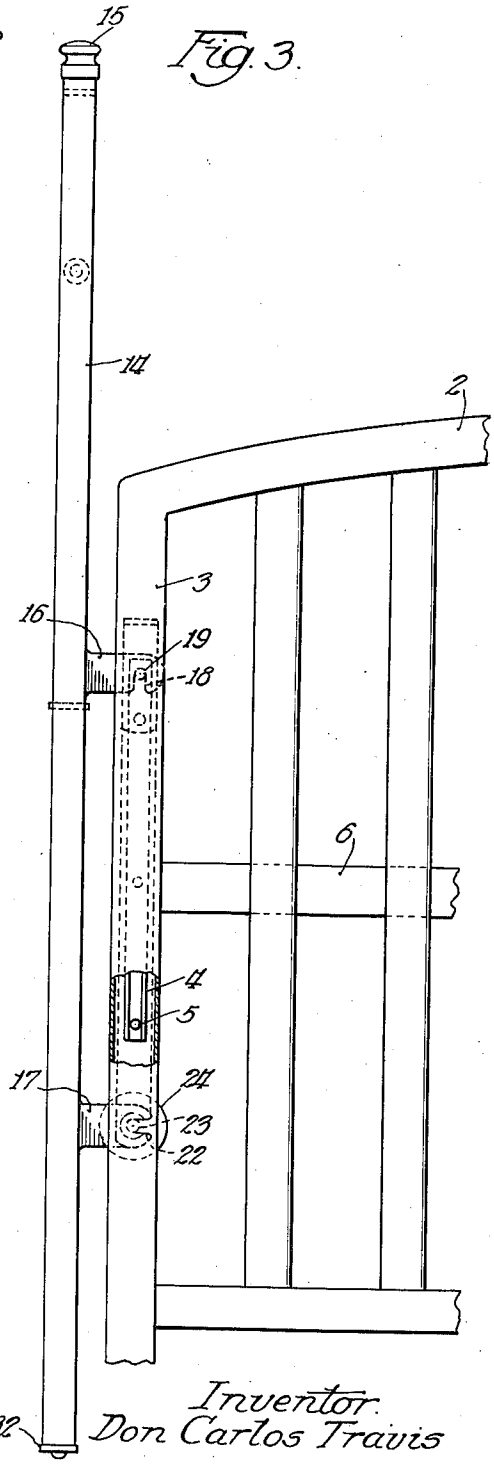


Fig. 3.



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Fig. 4

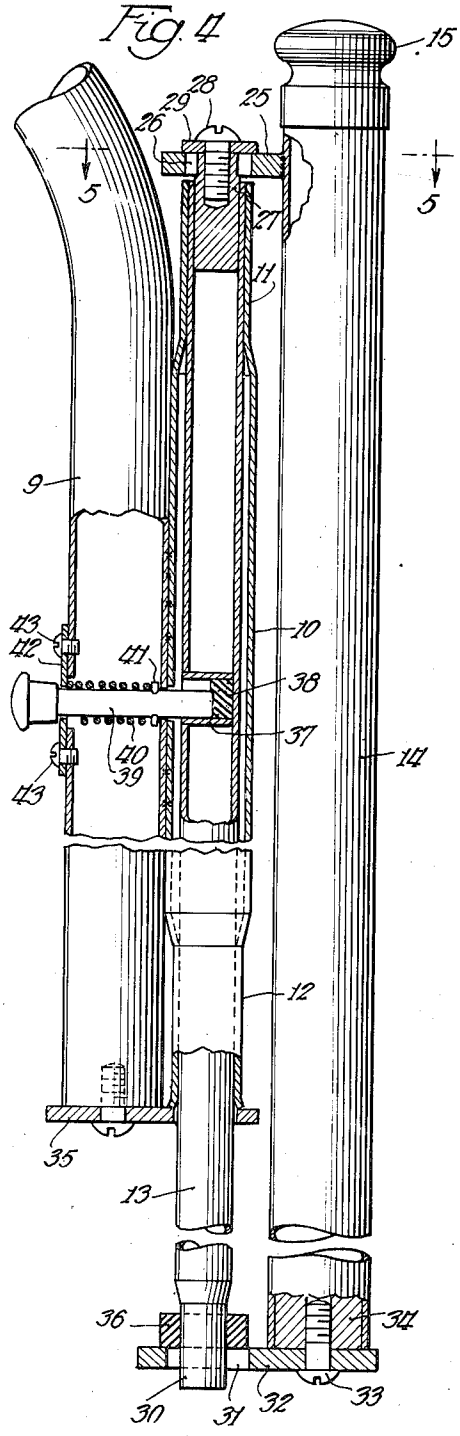


Fig. 5

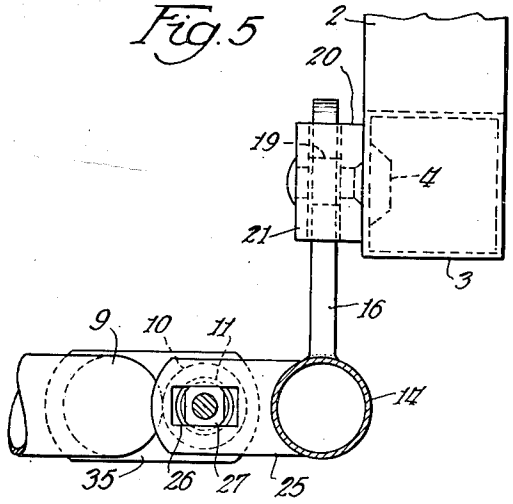
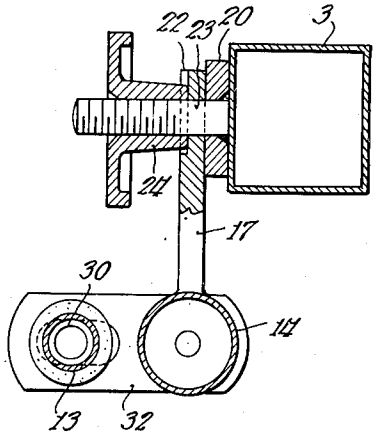


Fig. 6.



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HOSPITAL BED SIDE GUARD

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Application April 12, 1945, Serial No. 587,882

7 Claims. (Cl. 5—100)

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This invention has for its main object the provision of a side guard structure for hospital beds, and more particularly the provision of a side guard structure, which may be readily attached and detached from an ordinary hospital bed and which is adjustable from an operative position extending upwardly from the bed at its side to a lowered or out-of-the-way position permitting free access to the bed.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawings (3 sheets) wherein there is illustrated a hospital bed having a selected form of the side guard structure applied thereto.

In the drawings, Fig. 1 is a perspective illustrating a hospital bed to both sides of which side guards are applied according to the invention, one of the side guards being shown in its operative elevated position and the other in its lowered or out-of-the-way position. Fig. 2 is a side elevation of one corner of the structure, certain parts being broken away and illustrated in section to illustrate certain details of construction; Fig. 3 is an end elevation. Fig. 4 is a view corresponding to a portion of Fig. 2 but on an enlarged scale and partially in section; Fig. 5 is a section on the line 5—5 of Fig. 4, and Fig. 6 is a section on the line 6—6 of Fig. 2.

The hospital bed illustrated in the drawings embodies head and foot end frames 1 and 2 respectively. The end frames each have corner posts 3 which, when made of relatively light metal tubing, are preferably reinforced for the purpose of this invention, by means of a reinforcing strap 4 secured to the inside surface of the wall portion of the post to which the side guard structure is to be attached. The reinforcing strap 4 may be secured in place by suitable screws as indicated at 5 or otherwise.

The hospital bed structure also includes a bed bottom 7 shown here in the form of an ordinary fixed bed bottom, but which would more often be in the form of an adjustable bed bottom embodying various sections such as head and foot section, which are adjustable to various angular positions. The adjustability of the bed bottom is not particularly related to the invention, wherefor the simple fixed bed bottom is illustrated as a matter of convenience. The bed bottom 6 is of course detachably secured at its ends to the end frames 1 and 2 by any suitable means such as indicated at 7 in Fig. 2.

Side guards such as indicated at 8, which are more or less similar to the vertically moveable

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side guards of a child's crib are associated with each side of the hospital bed. The side guards shown are of tubular metal construction so as to be sufficiently rigid to withstand any forces which may ordinarily be applied to them. Each side guard 8 includes end posts 9, 9 to the outer side of which there is welded or otherwise secured a tubular member 10. The tubular member 10 has reduced upper and lower end portions 11 and 12 respectively which fit slidably on a tubular guide rod 13 which is supported in fixed position by means of a post 14 which is in turn detachably secured in fixed position on the adjacent corner post 3 of the end frame of the bed.

The supporting post 14 is also of tubular metal construction provided with a more or less ornamental cap 15 for its upper end. Intermediate its ends it is provided with radially outwardly extending ears or lugs 16 and 17, these ears being welded or otherwise rigidly secured to the post structure 14. The ear 16 is provided with a downwardly opening notch 18 (see Fig. 3) which is adapted to fit over and receive a supporting pin 19. The pin 19 is secured at its ends in a bracket member 20 and a housing member 21, and said bracket member 20 is secured to the corner post 3 by means of the screws or bolts 5 (see Fig. 2). The upper ear 16 and the supporting pin 19 are located above the plane of the bed bottom and on the inside face of the end frame as is more clearly shown in Fig. 1; and the housing 21 serves to more or less enclose the mechanical connection between the ear 16 and the corner post so as to avoid entanglement of bedding or other articles on the connecting parts. The housing 21 is somewhat elongated as shown so as to permit the ear 16 to be moved endwise inwardly over the pin 19 preparatory to downward movement of the ear into engagement with the pin 19. The lower ear 17 is provided with an open end notch 22 which is adapted to engage another pin 23 which is in the form of a screw threaded stud projecting inwardly from the lower end portion of the bracket member 20. Nut 24 in the form of a small end wheel threadedly engages the screw 23 and is adapted to be tightened against the ear 17 to clamp it in operative position against the fixed bracket 20. It will be seen that the post 14 may be attached to the bed by first engaging the upper ear or lug 16 with the pin 19 and then rocking the lower end portion of the post inwardly to engage the ear or lug 17 with the pin 23. The pin 23 is of course properly positioned with reference to the pin 19 to cause the notch 22 in the ear 17 to receive

the pin 23 when the post 14 is rocked about the pivot 19. By tightening the clamping nut 24, the post 14 will of course be effectively locked in place. Removal of the post 14 from the bed frame may of course be readily effected by loosening the nut 24, pulling out the lower end of the post and then raising the post and pulling the upper ear 16 outwardly.

The post 14 is provided near its upper end with a laterally extending ear 25 which is welded or otherwise rigidly secured to the post. The ear has an opening 26 provided therein, said opening being of elongated rectangular shape so as to be adapted to laterally adjustably receive the squared end portion of a stud or post 27 which projects out of the upper end of the guide rod or tube 13. The upper end of the guide member 13 is anchored to the ear 25 by means of a screw 28 which screws into a threaded hole in the post part 27, a washer 29 being provided under the head of the screw to seat on the top surface of the part 27. The squared upper end of the post 27 is movable laterally in the opening 26 in the ear 25, and the length of said squared post part 27 is somewhat greater than the thickness of the ear 25 so that when the screw 28 is driven home, the upper end of the guide tube 13 will be left freely adjustable laterally in the ear 25.

The lower end of the guide tube 13 is preferably provided with a reduced diameter end portion 30 which fits through a laterally elongated slot 31 in a bracket plate 32 secured to the lower end of the post 14. As shown in Fig. 4, the bracket plate 32 may be secured to the post 14 by means of a screw 33 which screws into a suitably threaded socket in a filler block 34 welded or otherwise anchored in place in the lower end of the hollow post 14. The length of the reduced diameter end portion 30 of the guide 13 is such that when the guide member 13 is to be assembled with the post 14, the lower end portion 30 of the guide may be passed through the slot 31 to such an extent that the upper end of the guide 13 and its post extension 27 may be moved laterally under the ear 25 into alignment with its slot 26. The guide 13 may then be raised to cause its post portion 27 to enter said slot in which position the upper end of the post is anchored as already explained.

The sleeve 10 which is welded to the end member 9 of the side guard is preferably of a main diameter which is considerably larger than the guide tube 13. The end portions 11 and 12 of the sleeve are, however, of reduced diameter to fit slidably on the guide tube 13. An end plate 35 may under lie the lower ends of the end member 9 of the side guard and the sleeve 10, said plate 35 being secured by a screw or otherwise, as shown, to the lower end of member 9 and if desired to the lower end of the sleeve 10. The end plate 35 serves to finish off the lower end of the vertically moveable structure and it provides a flat bottom surface for engagement with a bumper cushion 36 of rubber or other material disposed around the lower end portion 30 of the guide tube and on the bracket plate 32. The provision of the bottom plate 35 serves to facilitate initial positioning of the sleeve 10 relative to the end member 9 so that when the sleeve is welded in place on the end member 9 the proper relationship will exist between these parts. For locking the side guard in its elevated position on the guide member 13 as shown in Figs. 2 and 4, the guide tube 13 is provided with a transversely extending socket 37 having a rubber or other

cushion material block 38 in its bottom. The socket 37 is adapted to receive a plunger pin 39 which is normally urged by a spring 40 to project from the end member 9 into said socket 37. The locking plunger 39 consists of an elongated rod element surrounded by the spring 40 under compression between one or more suitable stops such as ears 41 punched out of the rod and a face plate 42 through which the plunger is longitudinally moveable. The face plate 42 may be attached to the end member 9 of the side guard by screws such as indicated at 43. When the side guard is to be lowered, the plunger 40 is pulled inwardly of the end member 9 of the side guard to withdraw the outer end of the plunger from the socket 37 whereupon the side guard may be moved downwardly along the guide tube 13.

It will be seen that the entire vertically slidable side guard structure including the guide tube 13 and the supporting post 14 may be readily attached or detached to or from the bed. When the side guard is removed, there remains only the housing 21 above the surface of the bed bottom and the inwardly projecting screw post 23 and nut 24 below the surface of the bed bottom. These remaining elements are of small size and constitute no objectionable structure on the bed when the side guards are removed. Attachment or detachment of the side guard structure may be easily effected and requires no tools nor particular skill. Hence, the structure is well adapted for use in hospitals and other institutions where the services of mechanics are not readily available.

The lateral adjustability of the guide rod 13 relative to the end frame by which it is carried, facilitates the mounting of the side guard structure interchangeably on any one of a plurality of beds which are equipped for receiving such side guards. Variations in the spacing and angularity of the end frames of the bed are automatically compensated for by self-adjustment of the guide rods in their supporting brackets.

The described construction is also advantageous in that it provides the required vertical guide rod length, adequately supported, notwithstanding the relatively short vertical dimension of the end frame corner posts.

Changes in the described structure may be made without departing from the principles of the information as represented in the described structure.

I claim:

1. A vertically movable side guard structure which is readily detachably mountable on a hospital or other bed, comprising an elongated guide rod, a side guard having an end portion slidably mounted on said guide rod, an elongated support for said guide rod and to which said guide rod is secured adjacent the ends of the guide rod with the intervening portion of the guide rod spaced from said support, said support having means located intermediate said ends of the guide rod for detachably securing said support to a bed as aforesaid.

2. A bed comprising a bed bottom, end frames supporting said bed bottom, and a side guard structure which is readily detachably mountable on said bed, said side guard structure comprising an elongated guide rod, a side guard having an end portion slidably mounted on said guide rod, an elongated support for said guide rod, and to which said guide rod is secured adjacent the ends of the guide rod with the intervening portion of the guide rod spaced from said support, and a pair

of vertically spaced ears projecting from said support at points intermediate said end of the guide rod, said end frames being provided with means adapted to cooperate with said ears for detachably securing said support to the bed as aforesaid.

3. A bed comprising a bed bottom, end frames supporting said bed bottom, and a side guard structure which is readily detachably mountable on said bed, said side guard structure comprising an elongated guide rod, a side guard having an end portion slidably mounted on said guide rod, an elongated support for said guide rod and to which said guide rod is secured adjacent the ends of the guide rod with the intervening portion of the guide rod spaced from said support, and a pair of vertically spaced ears projecting from said support at points intermediate said end of the guide rod, said end frames being provided with means adapted to cooperate with said ears for detachably securing said support to the bed as aforesaid, one of said ears and the means engaged thereby being so formed as to require movement of one thereof in predetermined direction relative to the other for effecting engagement and disengagement thereof, and the other ear and the means engaged thereby being so formed as to require, for effecting engagement and disengagement thereof, movement of one thereof relative to the other in a direction extending transversely of said predetermined direction.

4. A bed and side guard structure according to claim 2 which is also provided with clamping means for releasably locking the side guard structure in place on the bed.

5. A bed and side guard structure according to claim 3 which is also provided with clamping means for releasably locking the side guard structure in place on the bed.

6. A side guard structure according to claim 1 in which the guide rod is laterally adjustably secured at its upper end to the support so as to permit movement of the upper end portion of the rod in the direction of the plane of the side guard.

7. A bed comprising a bed bottom, end frames supporting said bed bottom, a side guard adjacent one side of said bed bottom and extending substantially from one of said end frames to the other, and means for vertically slidably supporting and detachably mounting said side guard on said end frames, said supporting and mounting means comprising, at each end of the bed, an elongated guide rod on which the adjacent end portion of said side guard is slidably mounted, an elongated support for said guide rod and to which said guide rod is secured adjacent the ends of the guide rod with the intervening portion of the guide rod spaced from said support to permit sliding of said side guard on said guide rod, and a pair of vertically spaced ears projecting from said support at points intermediate said ends of the guide rod, said ears being located one above and the other below the plane of said bed bottom and extending into overlapping relationship to adjacent portions of the adjacent end frame, said end frame portions being provided with pins projecting therefrom and said ears having open ended notches for receiving said pins, the notch in the upper ear facing downwardly so as to require vertical movement of said side guard relative to the upper pin to seat said upper pin in the bottom of said notch, and the lower ear being provided with a notch facing inwardly of the bed so as to require horizontal movement of the lower portion of the side guard relative to the lower pin to seat the latter in the bottom of the notch in said lower ear, a clamping nut on said lower pin for clamping said lower portion of the side guard against displacement from said lower pin, and a sheathe carried by the bed end frame for enclosing the upper ear and pin.

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