No. 677,602. Patented July 2, 1901.

H. E. SHARRER.

DEVICE FOR LIFTING AND HANDLING INVALIDS.

(Application filed Sept. 28, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

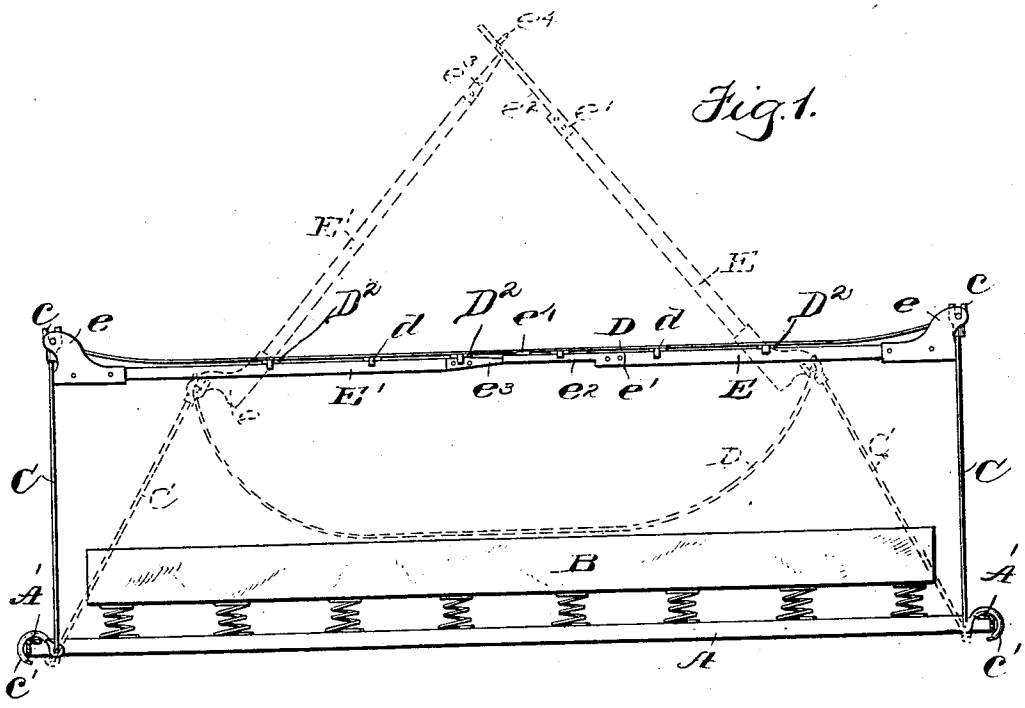


Fig 8

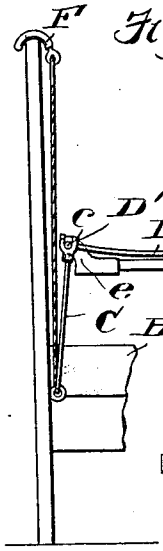


Fig. 2.

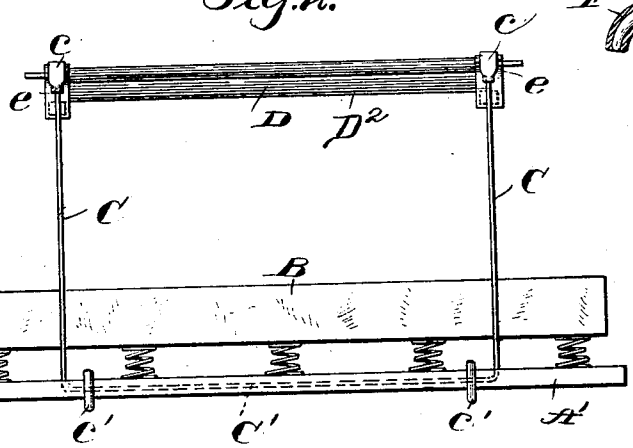
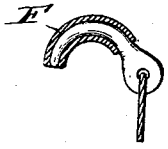


Fig. 9.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

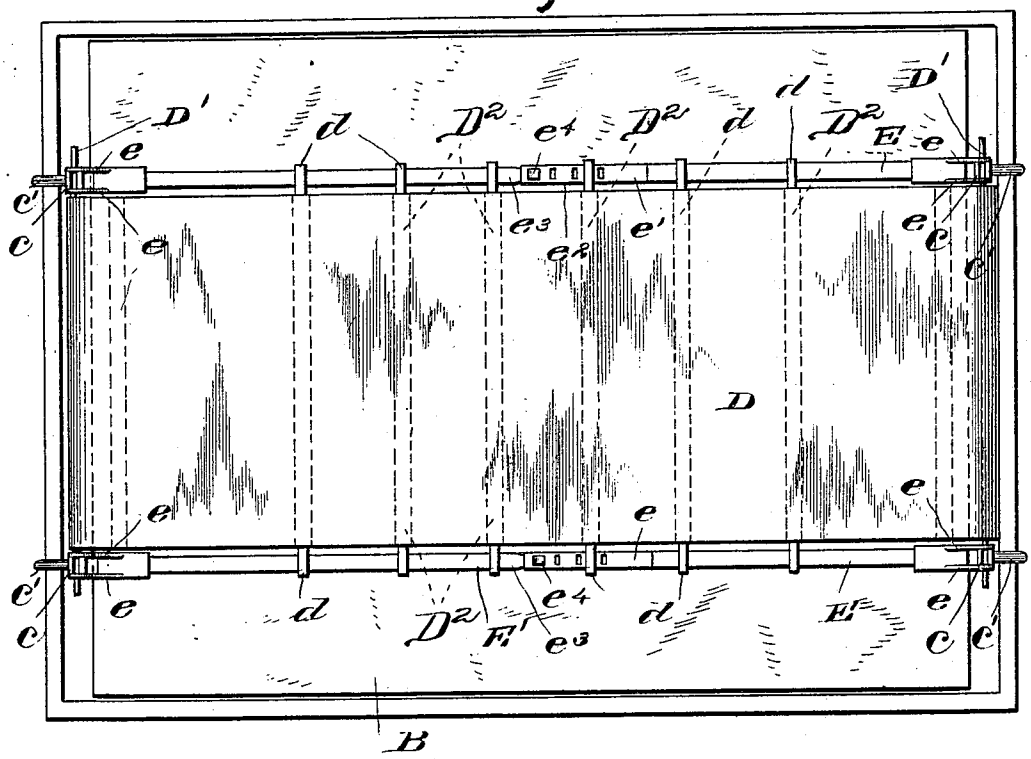


Fig. 5.

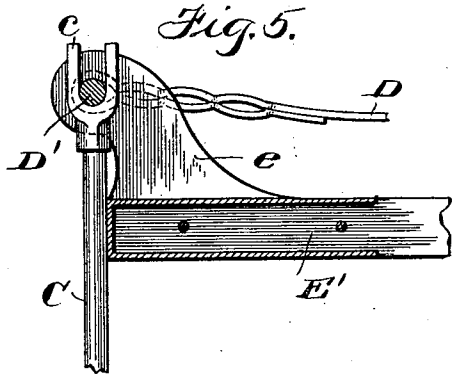


Fig. 4.

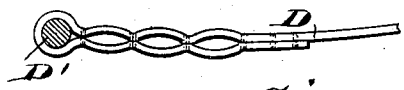


Fig. 7.

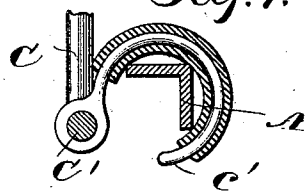
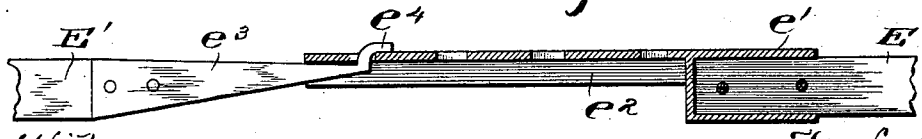


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY E. SHARRER, OF HAMMOND, INDIANA.

DEVICE FOR LIFTING AND HANDLING INVALIDS.

SPECIFICATION forming part of Letters Patent No. 677,602, dated July 2, 1901.

Application filed September 28, 1900. Serial No. 31,374. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. SHARRER, a citizen of the United States, and a resident of Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Devices for Lifting and Handling Invalids; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for lifting and handling invalids, more particularly an apparatus adapted to be secured on the frame of a bed and designed to afford means for lifting a patient from the bed for the purpose of renovating or arranging the bedding or for any desired purpose.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a side elevation, partly in section, of a device embodying my invention. Fig. 2 is an end elevation of the same, also partly in section, and illustrating the manner of applying the same to a bed. Fig. 3 is a top plan view of the same. Fig. 4 is a fragmentary side elevation of the canvas stretcher designed to support the invalid. Fig. 5 is a detail illustrating the manner of securing the stretcher upon the supporting-posts. Fig. 6 illustrates means for securing the locking-bars together. Fig. 7 is a detail of one of the supporting-hooks. Fig. 8 is a fragmentary side elevation, partly in section, illustrating one way of applying my improvement to wooden bedsteads. Fig. 9 is a detail of one of the hooks illustrated in Fig. 8.

In said drawings, A A indicate the side rails of an iron bed of familiar construction.

A′ A′ indicate the end rails of the same.

For convenience of illustration the legs and the head and foot of the bed are omitted in Figs. 1, 2, and 3.

B indicates a mattress, as herein shown supported upon bed-springs in the usual manner.

C C indicate supporting-bars or uprights designed to support the stretcher. As shown, the same consists, preferably, of uprights of gas-pipe united by means of an elbow at their lower ends to a horizontal pipe or bar C′. Said supporting-bars are provided at their upper ends with a crotch or fork *c*, adapted to form the bearings which support the stretcher. Each of the pipes C′ is provided with two hooks *c′ c′*, an enlarged side elevation of one of which is shown in Fig. 7. Said hooks are free to slide along said pipe or rod C′ for the purpose of adjusting in the desired position upon the bed-frame and are preferably covered with rubber or other resilient material to avoid marring the finish of the frame.

D indicates the stretcher, which, as shown, consists of a strip of canvas of the desired width and of a length approximately equal to the length of an ordinary bed. The canvas forming said stretcher is at each end folded over, as indicated in Fig. 4, and sewed transversely, there being preferably a number of seams laid across each of said ends for the purpose of adapting the stretcher for various lengths of beds. The rods D′, which are longer than the stretcher's width, as shown in Fig. 3, are inserted one in each end of the stretcher between any two of the seams, as may be necessary to adjust the length to that of the bed on which the device is to be used. Said stretcher is also provided intermediate of its ends with webs D^2, sewed transversely of the same. At each end of each of said webs is provided a hook *d*. Extension-bars are provided, (herein indicated by E and E′,) which are adapted to engage the rods D′ and the supporting-rods C C and which act to force the same oppositely or into their vertical position. Said extension-rods, as shown, consist each of a bar provided at one end with a fitting or casting adapted to engage the rod D′ and the end of one of the supporting-rods C and consisting of a socket and two lateral flanges *e e*, which extend above the upper surface of the rod and socket and longitudinally beyond the outer end of the same and are apertured transversely to receive the rod D′. Said flanges are a sufficient distance apart to permit the insertion between the same of the forked end *c* of the rod C, as shown in Fig. 3, and the outer end of the rod

and fitting are adapted to abut against the supporting-rods C and act to hold the same vertically when the extension-bar is in a horizontal position. Means are provided on the inner or meeting ends of said rods whereby the same are adapted to interlock, with the effect of maintaining the same in a horizontal position, as indicated in Figs. 1 and 6. As shown in the enlarged section in Fig. 6, said means consists of a fitting or boxing e', adapted to be secured on the inner end of the bar E and provided near its extremity with a forwardly-extending plate transversely apertured along its length and having on each side of the same a flange e^2. The inner end of the bar E′ is provided with a fitting e^3, comprising a socket adapted to receive the bar E′ and tapering upwardly to the inner extremity of the same on the under side and terminating in an upwardly and forwardly projecting hook e^4. When said bars are in their interlocked or horizontal position, as shown in Figs. 1 and 6, said hook extends upwardly through one of said transverse apertures in the fitting e' and is supported on the top of the plate. Obviously, inasmuch as the fitting e' is provided with a plurality of transverse apertures, the device is thereby adapted to ready adjustment for beds of various lengths, inasmuch as in a shorter bed it is only necessary to adjust the rods D′ D′ in the proper pocket or tuck of the stretcher and adjust the extension-bars E and E′ so that the hooks e^4 will engage in one of said apertures in the fitting e' when the stretcher is in its horizontal position.

The operation of my device is as follows, referring first to its use with an iron bed of ordinary construction: The patient resting upon the bed in the usual manner, the stretcher is first rolled longitudinally and the patient placed thereon in a familiar manner. The uprights C C are next secured on the inner side of the head and the foot of the bed on the end rails A′ by means of hooks c', as before described. Said uprights or end supports are then swung inwardly, as indicated in the dotted lines in Fig. 1. The rods D′ D′ are next passed through the ends of the stretcher, and the appropriate extension-bar is secured by its flanged end on each end of said rods. Each end of the stretcher is then raised, and the protruding ends of the rods D′ D′ are laid in the notches at the tops of the uprights C C, one at each end of the bed, with the forked end of each upright C between the flanges $e\,e$ of one of the end fittings. Said bars E and E′ are then elevated, as indicated in dotted lines in Fig. 1, and the hook e^4 is passed through the appropriate aperture in the fitting e'. The bars are then pressed downwardly to the position indicated in full lines in Fig. 1 and in Fig. 3, with the effect of elevating the stretcher with the patient supported thereon. The ends of said bars now abut against the inner side of the rods C C at each end of the device, thereby pressing the same into close engagement with the bed-head and at the same time acting to brace said rods from longitudinal and lateral movement. When the patient is elevated, the hooks d' on each side of the stretcher are secured on the bars E and E′, with the effect of supporting said stretcher along its length as well as at the ends.

Obviously it is sometimes necessary to apply a device of the kind described to a wooden bed of the ordinary construction, and usually in such beds the headboard is higher than the footboard and the frame is not adapted to receive the hooks c' c'. For this purpose I have provided supplemental hooks F, as indicated in Figs. 8 and 9. Said hooks will preferably be covered with rubber or other resilient material to avoid injury to the varnish of the bed and will be hooked over the tops of the foot and head boards on the inner sides, respectively. Straps or ropes or other flexible connections are secured in the eye of each hook and depend on the inner side of the head and foot boards, as indicated in Fig. 8. The hooks c' c', secured on the bars C′, are then engaged to said straps or other flexible connection, with the effect of enabling the operator to readily adjust the device in a horizontal position. Obviously the uprights C and the connecting-bars C′ could be constructed of wood or metal, as preferred. So, also, the extending-bars E and E′ may be wholly or in part of wood or metal, as preferred.

When not in use, the apparatus may be packed in small compass for transportation or storage and may be easily carried to the place where desired for use.

Obviously many details of construction may be varied without departing from the principle of my invention.

I claim as my invention—

1. In a device of the kind described, uprights pivotally secured at their lower ends at opposite ends of the bed to permit their upper ends to swing toward each other and a flexible stretcher having its ends secured to the free ends of opposite uprights, in combination with levers connected at one end to the free ends of the uprights and having complementary locking means upon their free ends, substantially as described.

2. In a device of the kind described, uprights pivotally secured at their lower ends at opposite ends of a bed to permit their upper ends to swing toward each other, and a flexible stretcher having its ends adjustably secured to the free ends of opposite uprights, in combination with levers connected at one end to the free ends of the uprights and having complementary locking means upon their free ends, substantially as described.

3. The combination with uprights connected in pairs and pivoted one pair at each end of the bed to allow their free ends to approach each other, of a stretcher provided with means near its ends to adjustably engage the uprights, and mechanism for forcing said up-

rights toward their respective bed ends and locking them in such position, substantially as described.

4. The combination of four uprights connected in pairs and pivotally secured respectively at opposite ends of a bed, a flexible stretcher provided with means at its ends to adjustably engage the opposite pairs of uprights and toggle mechanism arranged to force the tops of the uprights apart, elevating said stretcher and locking the same in a horizontal position above the bed, substantially as described.

5. In a device of the class described a stretcher of canvas or the like having its ends turned over and sewed in parallel lines transversely of the stretcher, thereby providing a plurality of parallel openings through the stretcher adapted to receive a rod upon which said stretcher is secured, and a plurality of parallel webs sewed transversely of the stretcher each provided at the ends with hooks adapted to laterally support the stretcher.

6. In a device of the class described two pairs of uprights provided at their upper ends with forks or crotches, a bar extending from one to the other of each pair and connecting the lower ends thereof, and hooks at the lower ends of said uprights adapted to engage a part of the bed-frame, in combination with a flexible stretcher having adjustably secured in each end a rod, and levers provided at their outer ends with parallel flanges, apertures in said flanges adapted to receive one end of said rod and forming a bearing for the fork of an upright, said levers being provided at their inner ends with complementary locking means, substantially as described.

7. In a device of the class described, a pair of uprights connected at their lower ends and provided at their upper ends with forks or crotches, means for pivoting said pair of uprights on the ends of a bed-frame, a flexible stretcher provided at each end with a connecting-rod adapted to be engaged by said forks or crotches, in combination with levers each provided at one end with flanges adapted to receive one end of the rods, and the fork of an upright, and provided at the other end with coacting locking means, whereby the inner ends of said levers may be rigidly secured together when in locking position, said levers being of such certain length that when the meeting ends are brought together the same form a toggle to force the corresponding uprights at opposite ends of the device apart.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

HARRY E. SHARRER.

Witnesses:
WARREN W. SMITH,
C. W. HILLS.