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LOADING APPARATUS FOR AMBULANCES

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2 Sheets-Sheet 1

Fig. 1

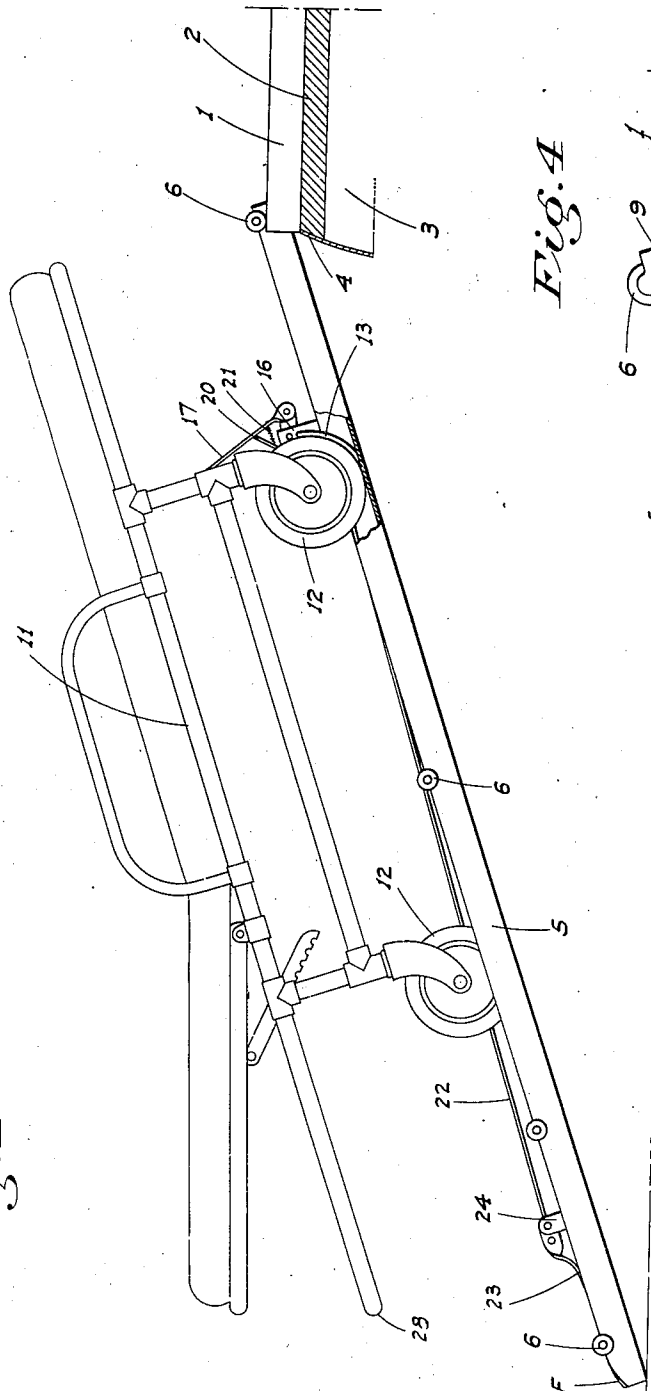
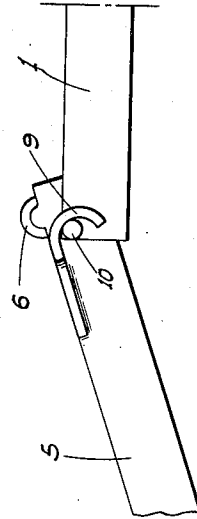


Fig. 4



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LOADING APPARATUS FOR AMBULANCES

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10 Claims. (Cl. 214—85)

This invention relates in general to loading apparatus for ambulances, and in particular the invention is directed to, and it is the principal object to provide, novel apparatus arranged in connection with an ambulance to facilitate the loading of the gurney thereinto.

Heretofore the gurney has been loaded into the ambulance by bodily lifting the gurney from the ground up to the bed of the ambulance, and this operation required at least two attendants, one disposed at each end of the gurney. With my unique apparatus the gurney can be easily and quickly loaded into the ambulance by one man.

A further object of the invention is to provide loading apparatus for ambulances, which includes a track unit normally disposed within the ambulance but mounted for sliding movement through the rear door of the ambulance to a rearwardly inclined position with the outer end of said unit resting on the ground, whereby the gurney can be run onto said unit, the unit lifted to horizontal position and then slidably moved into the ambulance.

An additional object is to provide ambulance loading apparatus as in the preceding paragraph, including means to lock the gurney against escape from the track unit, whereby the attendant after securing the gurney on said unit may lift the unit and slide the same into the ambulance without having to simultaneously and manually hold the gurney in place.

A further object of the invention is to provide a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear from a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a fragmentary side elevation showing the movable track unit in ground engaging position and with the gurney secured thereon.

Figure 2 is an enlarged fragmentary longitudinal section of the track unit as in place in the ambulance, and illustrating the mechanism employed to secure the gurney to said unit, and the latter against undesired movement in the ambulance.

Figure 3 is a plan view of the apparatus showing the track unit partially withdrawn from the fixed guide rails in the ambulance, but before

lowering of said unit to inclined ground engaging position.

Figure 4 is an enlarged fragmentary side elevation illustrating the means employed to prevent the track unit, when in inclined position, from escaping the supporting rails.

Referring now more particularly to the characters of reference on the drawings, the apparatus comprises a pair of transversely spaced parallel rails 1 of upwardly opening channel-shape in cross-section; these rails being secured on the floor 2 of the body of the ambulance, indicated diagrammatically at 3. The guide rails 1 terminate at their rear ends at the rear 4 of the ambulance, which as usual has doors (not shown) which are opened to permit of loading.

A longitudinally slidable track unit is normally supported by the guide rails 1 within the ambulance and comprises a pair of parallel longitudinally extending tracks 5 of upwardly opening channel shape in cross section; the cross section and spacing of tracks 5 being such that they depend in relatively slidable relation into the fixed guide rails 1. Each of the tracks 5 adjacent its ends, and at spaced points therebetween, is fitted on the outside with rollers 6 which are disposed adjacent the upper edge of said tracks and ride the upper edge of the outer flange of the guide rails 1. These rollers support the track unit for easy longitudinal sliding movement.

The tracks 5 are rigidly secured together to form the unit by means including cross members 7 and diagonal bracing 8.

At the inner end of the track unit the tracks 5 are formed with depending rearwardly facing hooks 9 which engage laterally projecting pins 10 on the rear end of rails 1 when the track unit is slid rearwardly for substantially its full length; engagement of hooks 9 with pins 10 assuring against separation of the track unit and from the guide rails, and when engaged serving as a support and a hinge for the inner and upper end of the track unit, whose outer end is adapted to be lowered into engagement with the ground, as shown in Fig. 1. The tread of the track unit corresponds to the tread of the gurney; the gurney being indicated generally at 11.

To load the gurney into the ambulance the track unit is slid rearwardly and lowered to its inclined and ground engaging position, as above described. Thereupon the gurney is run up the inclined track unit with the gurney wheels 12 riding in the tracks 5. The tracks adjacent their inner and upper ends are fitted with wheel stops 13 which are symmetrical to and against

which the wheels 12 at one end of the gurney abut. To facilitate entry of the gurney wheels into the rails 5, the latter are flared out at their lower end as at F.

After the gurney has been run onto the wheel unit it is locked in position thereon by means of the following mechanism:

A bellcrank 14 is pivoted intermediate its ends, as at 15, on an upstanding ear 16 secured on the upper or forward one of the cross members 7. The bellcrank is disposed for swinging movement in a plane lengthwise of the track unit, one leg of the bellcrank extending generally horizontal while the other leg is in a depending position. An arm 17 is pivoted at its lower end as at 18 to the free end of the generally horizontal leg of the bellcrank, and thence extends upwardly some distance; the upper end of said arm being formed as a hook 19. A fixed finger 20 projects upwardly from ear 16 at an incline toward the arm 17, which rides thereagainst; said finger serving as a guide for the arm 17 and hook 19. A tension spring 21 connects between the arm 17 and finger 20 to maintain said arm in engagement with said finger. It will be seen that upon swinging movement of the bellcrank 14 the hook 19 will be raised or lowered in a generally vertical plane, and this movement of the hook is accomplished as follows:

A longitudinally extending rod 22 is pivotally connected at one end with the free end of the depending leg of the bellcrank and thence extends rearwardly to a point adjacent the outer end of the track unit. A hand lever 23 is pivoted on an upstanding ear 24 on one cross member 7 adjacent the rear or lower end of the track unit; the rod 22 being pivotally and eccentrically connected to the hand lever 23 intermediate the ends of the latter. When said lever is swung down to a lowered position in engagement with a stop S the rod is below dead center relative to the pivot of said hand lever.

After the gurney has been run onto the inclined track unit and the gurney wheels have engaged stops 13, the hand lever 23, which is then in the position shown in dotted lines in Fig. 2, is depressed to swing the rod beyond dead-center, which swings the bellcrank 14 and in turn effects lowering of hook 19. The hook is so disposed that when it is lowered it engages in holding relation over one of the transverse cross bars 25 of the frame of the gurney.

With the gurney thus locked to the track unit the attendant clasps the outer and lower end of said unit, raises it to a substantially horizontal position and then slides the unit on the guide rails 1 into the ambulance. Stops 26 on the floor of the ambulance inwardly of the rails 1 limit inward sliding movement of the track unit and supported gurney to the desired position.

To prevent undesired relative sliding movement of the track unit relative to the guide rails after loading, a hook 27 is engaged over the end handle 28 of the gurney at the end opposite cross bar 25; the hook 27 being held in position by a heavy duty tension spring 29 which connects between the lower end of said hook and a cross rod 30 fixed between the guide rails 1.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail

may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. Ambulance loading apparatus comprising a track unit onto which a gurney is adapted to be wheeled from one end, means mounting said track unit for movement between a position within the ambulance and a position extending at an incline from the ambulance to the ground, and means on the track unit operative to releasably secure a gurney on said track unit; said last named means including a downwardly opening vertically movable hook, and a manually actuated lever arranged to shift said hook vertically whereby to engage the same in holding relation with an element on the gurney.

2. Ambulance loading apparatus comprising a track unit onto which a gurney is adapted to be wheeled from one end, means mounting said track unit for movement between a position within the ambulance and a position extending at an incline from the ambulance to the ground, and means on the track unit operative to releasably secure a gurney on said track unit; said last named means including a bellcrank pivoted for swinging movement lengthwise of the track unit, an arm upstanding from one leg of the bellcrank, a downwardly opening hook on the upper end of said arm, the gurney including an element over which said hook is adapted to engage, a manually actuated lever, and means connecting said lever with the other leg of said bellcrank whereby the lever is operative to swing said lever to effect vertical movement of said hook.

3. Apparatus as in claim 2 in which said lever is pivotally mounted and said connecting means comprising a rod pivotally connected at one end with said other leg of the bellcrank and at the other end with the lever in eccentric relation to its pivot, whereby said rod passes dead center relative to said lever pivot upon predetermined swinging movement of the lever, and a stop against which the lever engages after the rod passes dead center and when the rod is swung in a direction to lower said hook.

4. Ambulance loading apparatus comprising a pair of spaced parallel rails secured in the ambulance, a track unit cooperating with said rails and including a corresponding pair of tracks onto which a gurney is adapted to be wheeled from one end, means mounting said track unit for sliding movement lengthwise from a position above said rails to a position inclined from one end thereof to the ground, and means to prevent separation of the track unit at its inner end relative to said rails when the unit is so inclined and also serving as a hinge about which the unit may be swung to such inclined position.

5. Apparatus as in claim 4 in which said last named means comprises hooks mounted on the track unit adjacent its inner end and pins projecting laterally from the rails adjacent their outer ends, said hooks engaging said pins when the track unit is slid substantially its full length relative to the rails and then serving to support the inner end of the track unit.

6. Ambulance loading apparatus comprising a pair of spaced parallel rails secured in the ambulance, a track unit cooperating with said rails and including a corresponding pair of tracks onto which a gurney may be wheeled from one end, means mounting the track unit for lengthwise

movement from a position about the rails to a position inclined from one end thereof to the ground, said rails and said tracks being of upwardly opening channel shape and the tracks depending into the rails, and spaced rollers on the tracks engaging one flange of the rails.

7. Ambulance loading apparatus comprising spaced parallel rails mounted in the ambulance, a gurney supporting unit slidably mounted on said rails for movement out of the ambulance to a loading position, means on the unit releasably securing the gurney against movement on said supporting unit, a stop in the ambulance for the supporting unit when the latter is disposed in the ambulance and holding means on the ambulance engageable with the gurney when the latter is secured on the unit and the unit is disposed in the ambulance and is engaged with the stop.

8. Apparatus for loading a wheeled gurney into an ambulance comprising a track unit onto which the gurney may be wheeled from one end, means mounting said track unit in connection with the floor of the ambulance for sliding movement between a position within the ambulance to a position inclined from said floor to the ground, a stop on the unit for a foremost wheel of the gurney

and manually controlled holding means on the track unit engageable with a crossbar on the gurney when said wheel is engaged with the stop to hold the gurney against retractive movement along the track unit.

9. Apparatus as in claim 8, with means on the track unit to actuate the holding means and operable from a point on the unit rearwardly of the gurney.

10. Apparatus for loading a wheeled gurney into an ambulance comprising a track unit onto which the gurney may be wheeled from one end, means mounting said track unit in connection with the floor of the ambulance for sliding movement between a position within the ambulance to a position inclined from said floor to the ground, the gurney including front and rear crossbars, holding means on the track unit engageable with the front crossbar when the gurney occupies a predetermined position on the track unit to hold the gurney against retractive movement and holding means mounted in the ambulance to engage the rear crossbar when the track unit and gurney are disposed in the ambulance.

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