The present invention relates to apparatus for transporting stretchers, caskets, and the like over a stair structure as they are moved into and out of a building. In many undertaking establishments, convalescent homes and small buildings converted to hospitals there are stairs over which the stretcher or casket must be conveyed to enter and leave the building. This presents a considerable problem and especially in winter weather when the stairs are apt to be icy. The stretcher or casket being conveyed must be lifted up or down the inclined stairs by attendants at either side which requires considerable physical effort, is awkward to accomplish and is fraught with danger to the attendants lifting the stretcher or casket.

One of the objects of the present invention is to provide an apparatus for transporting a stretcher or casket over a stair structure on a wheeled carriage or dolly.

Another object is to provide an apparatus of the type indicated which provides spaced tracks for a wheeled carriage or dolly at an incline less steep than the incline of the stairs and provides a space for attendants at both sides and between the tracks.

Another object is to provide an apparatus of the type indicated which may be removable mounted on conventional stair structures and is adjustable for wheeled carriages or dollies of different width and for stair structures of different heights and inclinations.

Still another object is to provide an apparatus of the type indicated which is of simple and compact construction, economical to manufacture and install and one which is reliable in operation.

These and other objects will become more apparent from the following description and drawing in which reference characters denote like parts throughout the several views. It is to be expressly understood, however, that the drawing is for the purpose of illustration only and is not a definition of the limits of the invention, reference being had for this purpose to the appended claims.

In the drawing:

FIGURE 1 is a perspective view of the apparatus of the present invention applied to a staircase and showing the spaced inclined tracks for a wheeled carriage or dolly.

FIGURE 2 is a sectional view taken on line 2—2 of FIGURE 1 to show the struts of the spaced frames for supporting the tracks and one of the adjustable tie-plates for adjusting the width of the frames.

FIGURE 3 is a transverse sectional view taken on line 3—3 of FIGURE 2 to show the overlapping relationship of the two part tie-plate and the fasteners for attaching the tie-plate to the riser of the bottom step of the stairs; and

FIGURE 4 is a side elevational view of a frame of modified construction adapted for adjustment for stairs of different heights and inclinations.

In the drawing, the apparatus of the present invention is shown applied to a staircase 9 having steps 10, an upper platform or landing 11 and a lower platform 12. In the illustrated embodiment, the upper platform 11 is at the level of the first floor of the building and the lower platform 12 is adjacent a roadway and forms a curb 13 at its edge. Hand rails 14 are shown at each side of the staircase 9.

The apparatus of the present invention comprises spaced frames 15 and 16 supported from the lower platform 12 and, in turn, supporting spaced inclined tracks 17 and 18 extending in parallel relation from the upper platform 11 to the lower platform 12. In the illustrated embodiment each inclined track 17 and 18 is in the form of a length of metal I-beam section with its flanges vertically arranged horizontally and its flanges vertically to provide a grooved runway for the wheels of a carriage or dolly.

It will be understood, however, that a channel section could be used in place of an I-beam section.

Each frame 15 and 16 comprises in addition to the track 17 or 18, a sill plate 19 and an inclined base plate 21, respectively. The inclined track 17 of the frame 15, for example, has its lower end 23 connected to the forward end 24 of the sill plate 19, and the inclined base plate 21 has its opposite ends connected to the sill plate 19 and upper end of the inclined track as by welding.

The sill plate 19 and base plate 21 may be of standard channel sections with the sill plate resting on the lower platform 12 and the inclined base plate overlying the steps 10 of staircase 9. A plurality of struts 25 project upwardly between the sill plate 19 and base 21 and the inclined track 17 with their ends positioned between the flanges and attached thereto as by welding to support the track intermediate its ends. The frame 16 is of identical construction with the frame 15.

The frames 15 and 16 are held in spaced relation by a plurality of tie-plates 26, 27 and 28. Tie-plate 26 extends between the upper ends of the inclined track 17 and 18 and overlies the forward edge of the platform 11, the tie-plate 27 is connected between the rearward ends of the sill plates 19 and 19' and overlies the riser 29 of the lower step 10 of the staircase 9 and the tie-plate 28 is connected between the forward ends of the sill plates 19 and 19'. As shown in detail in FIGURES 2 and 3 each of the tie-plates 26, 27 and 28 is of a two part construction having offset portions 30 and 31 with overlying slots 32 and 33. One end of each part 30 and 31 is connected to a track 17 or 18 or sill plate 19 or 19' and the two parts are connected to each other by a bolt 34 extending through the overlying slots 32 and 33. Thus, the bolts 34 of the respective tie-plates 26, 27 and 28 may be loosened, the frames 15 and 16 adjusted toward or away from each other and the bolts 34 again tightened to connect the frames 15 and 16 in an integral structure.

Tie-plate 27 overlying the riser 29 of the lower step 10 is attached thereto by screw fasteners 35, as illustrated in FIGURE 2. Similarly, the tie-plate 26 overlying the forward edge of the platform 11 is attached thereto by similar screw fasteners to hold the apparatus in fixed position on the staircase. It will be understood that the entire apparatus may be easily and quickly installed or removed from the staircase by merely applying or removing the screw fasteners 35 and the inclined tracks may be adjusted toward and away from each other by loosening and tightening the bolts 34.

It will be observed that the apparatus of the present invention provides spaced inclined tracks which extend from the upper platform 11 to the lower platform 12 at a point positioned outwardly from the lower step 10 of the staircase 9. Thus, a stretcher or casket mounted on a wheeled carriage or dolly and rolled along the tracks 17 and 18 will at all times be inclined at a smaller angle to the horizontal than it would be if carried up the staircase by attendants. It will still further be observed that the spaced tracks 17 and 18 provide spaces on the stairs at either side of the track and between the tracks to hold the stretcher or casket as it is moved up or down the tracks.
Each of the tracks 17 and 18 is provided with an opening 36 adjacent its lower end to receive the projecting pin of a chock 37 for engagement by the wheels of a carriage or dolly to hold it as a stretcher or casket is being placed on or removed from the dolly. In some instances, the stretcher with the dolly attached may be removed from an ambulance onto the roadway adjacent the lower platform 12. To provide a ramp for wheeling the stretcher or casket over the curb 13, removable extensions 38 are provided having pins engaging holes in the tracks 17 and 18 similar to openings 36.

FIGURE 4 illustrates a frame 15 or 16 of modified construction adapted for use with stairs of different height and inclination. The frame 15 of the modified construction comprises the same inclined track 17, sill plate 19 and base plate 21. However, the lower end of the track 17 is pivotally connected to the forward end of the sill plate 19 by a pivot pin 40, the upper end of the base plate 21 is pivotally connected to the upper end of the track 17 by a pivot pin 41 and the lower end of the base plate is slidably along the sill plate and has a threaded pin 42 projecting through a slot 43 in the flange of the sill plate. The struts 25 are of two part construction, each having a part 25a connected to the plate 21, respectively. The parts 25a and 25b of each strut 25 are adjustable relative to each other with a bolt 44 on one part extending through a slot 45 on the other part to adapt them to be clamped in any adjusted position. Thus, by loosening a nut on a threaded pin 42 and the bolts of the two part struts 25, the frame 15 may be adjusted from the angular position illustrated in full lines to the positions illustrated in dot and dash lines in FIGURE 4. This adjustment of the apparatus adapts it for stairs of different heights and slopes. Tie-plate 27 also is adjustably connected to the sill plates 19 by slidable brackets 46 to position it adjacent the step riser 29.

It will now be observed that the present invention provides an apparatus for transporting a stretcher or casket over a staircase on a wheeled carriage or dolly. It will also be observed that the present invention provides spaced tracks for a wheeled carriage or dolly at an incline less than the incline of the stairs and provides a space for attendants on both sides and between the tracks. It will also be observed that the present invention provides an apparatus which may be removable mounted on conventional stairs and adjusted for stairs of different height and inclination and for dollies of different width. It will still further be observed that the present invention provides an apparatus which is of simple and compact construction, economical to manufacture and install and one which is reliable in operation.

While two embodiments of the invention are herein illustrated and described, it will be understood that further changes may be made in the construction and arrangement of elements without departing from the spirit or scope of the invention. Therefore, without limitation in this respect the invention is defined by the following claims.

4. I claim:

1. Apparatus for transporting stretchers, caskets and the like over a stair structure having platforms at the top and bottom comprising spaced frames providing a space for attendants on the stairs at each side and between the frames, each frame comprising an inclined grooved track extending from the top platform to the bottom platform, a sill plate resting on the lower platform and having its outer end connected to the lower end of the grooved track, an inclined base plate overlying the stairs and connected between the inner end of the sill plate and upper end of the rail and spaced upright struts extending between the inclined rail and the sill and inclined base plates whereby the grooved track has a slope less steep than the stairs, tie-plates extending between the frames at the upper ends of the tracks and the inner and outer ends of the sill plates to hold the frames in proper spaced relationship, and the tie-plates between the inner and outer ends of the sill plates being connected to the forward end of the upper platform and riser of the bottom stair, respectively, to hold the apparatus in position on the stair structure.

2. Apparatus in accordance with claim 1 in which the tie-plates between the rails and sill plates are of two part construction in overlapping relationship to adapt the frames to be adjusted toward and away from each other, and fastening means for connecting the separate parts of the tie-plates in any adjusted position.

3. Apparatus in accordance with claim 2 in which the connection between the tie-plates of the upper platform and riser of the bottom stair are removable screw fasteners.

4. Apparatus in accordance with claim 1 in which the chocks are adapted to be removable mounted on the tracks, and means on the chocks and tracks for mounting them in position thereon.

5. Apparatus in accordance with claim 1 in which removable extensions are provided, and means at the lower ends of the tracks for mounting the extensions thereon.

6. Apparatus in accordance with claim 1 in which the ends of the track of each frame are pivotally connected to the sill and base plates, respectively, the ends of the sill and base plates are slidable connected to each other, the struts are of two part construction and relatively slidable to adapt the frame for adjustment to fit stair structures of different heights and slopes, and fastening means for locking the sill plate to the base plate and the parts of the struts in any adjusted position.

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