May 29, 1956 R. H. FERNEAU ET AL 2,747,919

MULTI-LEVEL AMBULANCE COT

Filed Oct. 30, 1952 2 Sheets-Sheet 1

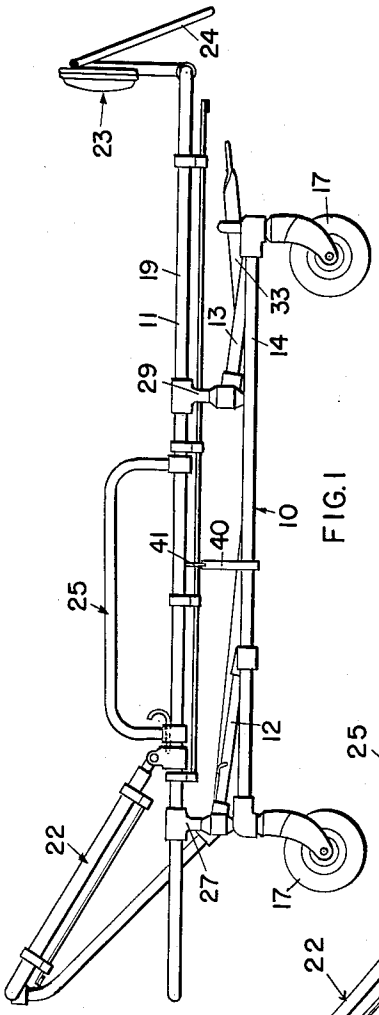


FIG. 1

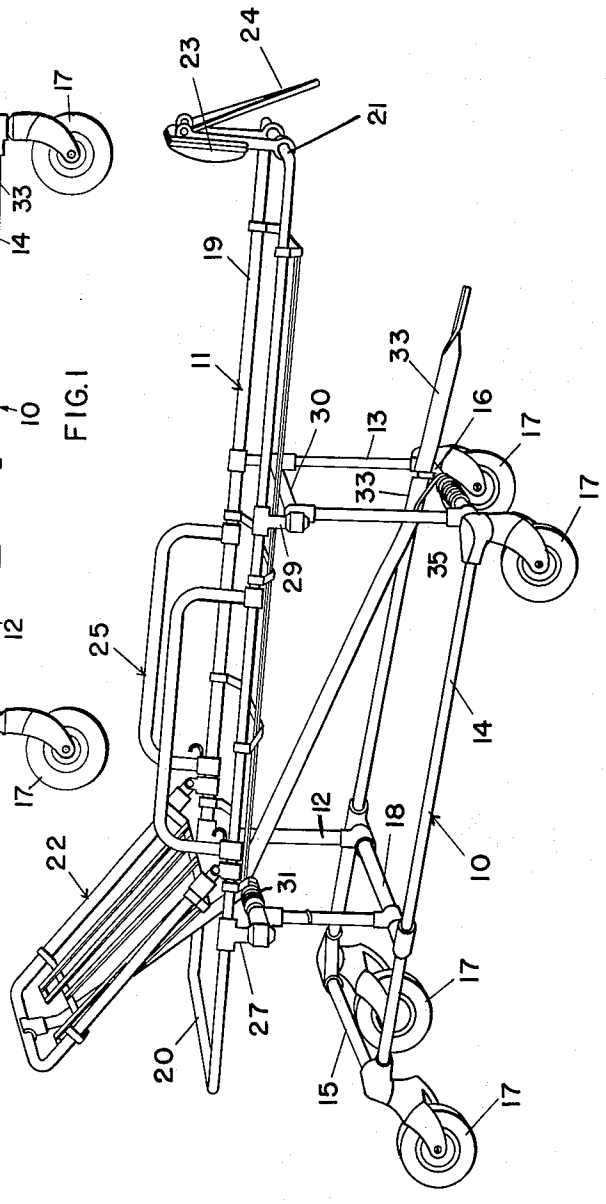


FIG. 2

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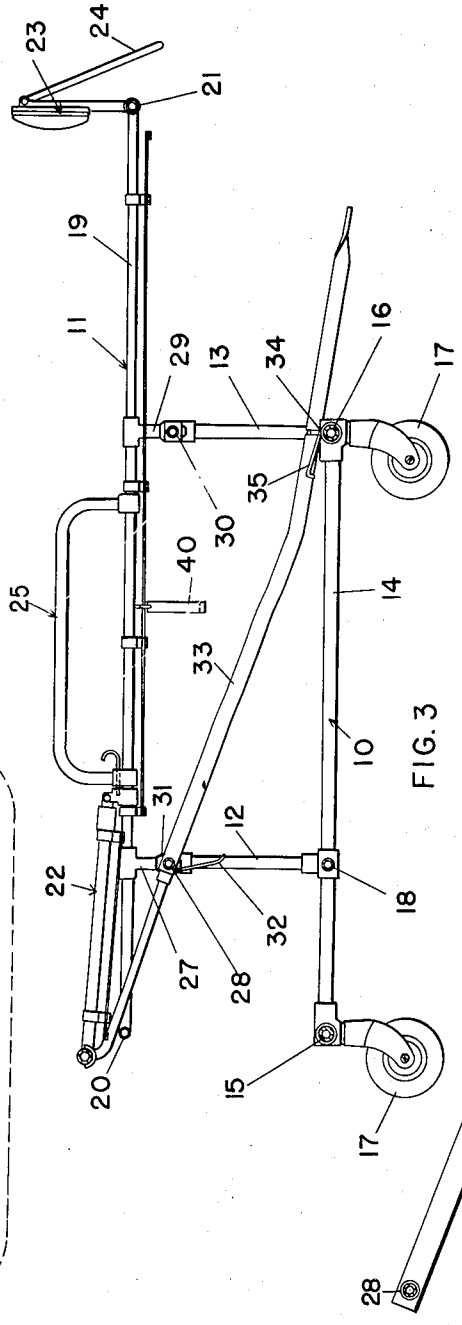


FIG. 3

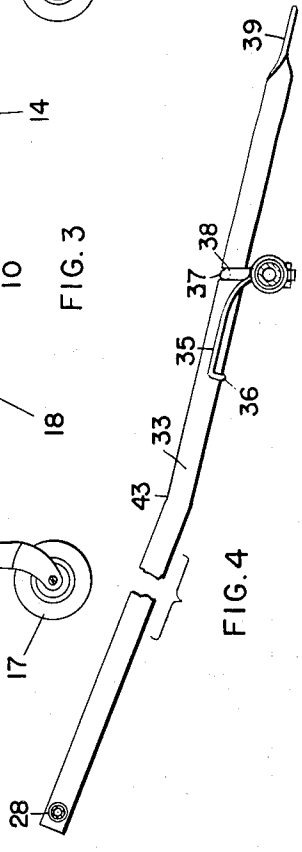


FIG. 4

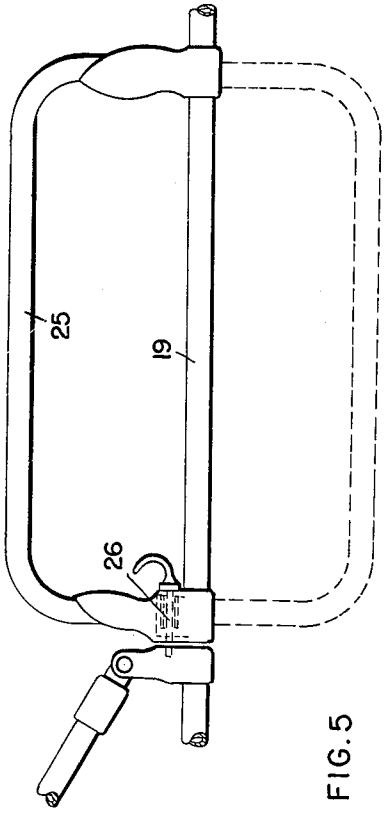


FIG. 5

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MULTI-LEVEL AMBULANCE COT

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1 Claim. (Cl. 296—20)

Our invention relates to an ambulance cot. It has to do, more particularly, with an ambulance cot which is readily adjustable as to height.

At the present time, ambulance cots are necessarily made very low so that they can be positioned, with the patient therein, in modern ambulances which are very low and offer little head room. Although it is desirable to have the cot low for positioning in the ambulance, this creates certain problems when the cot is removed from the ambulance. In the first place, because the cot is usually so low, it is difficult to roll it along corridors since the bearers must lean over to push or pull the cot. Furthermore, because it is so low, it is difficult to carry upstairs. Most important, however, is the fact that it is difficult to transfer a patient from the low cot to a high bed and vice versa.

It is the main object of our invention to provide an ambulance cot which can be readily adjusted between a low position, which is suitable for the cot when it is positioned in the ambulance, and a high position, which is suitable for carrying the cot upstairs or rolling it along corridors and for transferring a patient between the cot and a bed.

Another object of our invention is to provide an adjustable cot of this type which is of simple structure, having simple locking means for holding the cot in its elevated position, the locking means being of such a nature that it can be released readily to permit return of the cot to its lower position.

Still another object of our invention is to provide an adjustable cot of the type indicated which is provided with a shock absorbing arrangement both when it is in its lower adjusted position and when it is in its upper adjusted position.

Various other objects will be apparent.

The preferred embodiment of our invention is illustrated in the accompanying drawings wherein similar characters of reference designate corresponding parts, and wherein:

Figure 1 is a side elevational view illustrating an ambulance cot constructed according to our invention, the cot being shown in its lower adjusted position.

Figure 2 is a perspective view of the cot showing it in its raised adjusted position.

Figure 3 is a vertical sectional view showing the cot in its raised adjusted position.

Figure 4 is a detail of the locking means for holding the cot in its upper adjusted position.

Figure 5 is a side view of the adjustable handle and guard provided at each side of the cot.

With reference to the drawings, in Figures 1, 2 and 3, we have illustrated the general structure of our ambulance cot. It consists mainly of a lower frame **10** and an upper frame **11** which are connected together by a pair of hinged legs **12** at the head end thereof and a pair of hinged legs **13** at the foot end thereof.

The frame **10** includes a pair of longitudinally extending bars **14** which are held in transversely spaced relationship by the crossbars **15** and **16**. Thus a rectangular frame is formed and this frame is carried on the caster rollers **17** disposed at each corner thereof. Extending transversely of the bars **14** and secured thereto is another bar **18** (Figure 2) which is spaced from the bar **15** a substantial distance. This bar **18** carries the legs **12** which are hinged thereto for vertical swinging movement. The legs **13** are hinged to the transverse bar **16** at the other end of the frame **10**.

The frame **11** may be of any suitable type to properly support the patient. It includes the longitudinally extending rods **19** which are joined to a transverse member **20** at the head of the frame and a transverse member **21** at the foot of the frame, all of these members preferably being connected together to form a continuous rectangular frame. This frame **19** may be provided with the adjustable backrest **22** in the usual manner and with the footrest **23** and associated adjustable handle **24** in the usual manner. Also hinged to each side of the frame **11** on the rods **19** are the side guards and handles **25**. As shown in Figure 5, each handle is normally held in upright position by means of a latch **26** but this latch can be released to swing the handle downwardly to its lower position indicated by the dotted lines.

At a point spaced from the head end of the frame **11**, the rods **19** are provided with a pair of depending brackets **27**. These brackets are spaced the same distance from the head end of frame **19** as the rod **18** is spaced from the head end of the frame **10**, as indicated best in Figures 2 and 3. The brackets **27** are rigidly secured to the rods **19**. These brackets **27** carry a transverse bar **28** to which the upper ends of the legs **12** are hinged. Similarly a pair of depending brackets **29** are rigidly secured to the bars **19** and are spaced from the brackets **27** the same distance that the transverse rod **16** of frame **10** is spaced from the transverse rod **18** thereof. These brackets **29** carry the transverse rod **30** to which the upper ends of the legs **13** are hinged.

The rod **28** carries a pair of coil springs **31** which surround it and are anchored thereto at one end, the other end **32** of the springs engaging the inner sides of the legs **12**. These springs will normally tend to swing the legs **12** towards the head end of the cot and will tend to keep the structure folded as in Figure 1.

Midway between the ends of the transverse rod **28**, a locking bar **33** is pivoted thereto for vertical swinging movement. This bar is of flat cross section and is disposed on edge. It extends from the bar **28** rearwardly over the transverse bar **16** of the frame **10**. This bar **16** carries a spring **34** which coils around it and which has a projecting end **35** (Figure 4) having a U-shaped extremity **36** which embraces the lower edge of the locking bar **33**, the bar, however, being free to slide through this U-shaped extremity. The bar **33** also passes through a yoke-shaped locking member **37**, through which it can normally slide. However, the bar is provided with a locking notch **38** which will engage this locking member **37**. The spring arm **35** normally will swing the bar **33** upwardly in engagement with the locking yoke **37** and the bar will slide through this member **37**, upon adjustment of the frame **11** relative to the frame **10** until the notch **38** engages the member **37**. The extreme free end of the bar **33** is provided with a foot pedal portion **39** formed thereon by means of which the notch **38** can be released from the member **37** by a downward push with the foot.

When the cot is to be positioned in the ambulance, it will be in the condition shown in Figure 1. The frame **11** will be in its lowermost position on the frame **10**. In this position the lower ends of the brackets **27** which serve as stop members will engage the frame **10** directly over the casters **17** at the head end of the frame. However, the brackets **29**, which also serve as stop members,

will engage the bars 14 at a substantial distance towards the head end of the cot, from the casters 17 at the foot end thereof. The bars 14 are flexible to a certain degree with the result that the frame 11 will be resiliently supported by the frame 10. This will provide shock-absorbing means for the cot and it will not be necessary to have the usual coil springs associated with the caster wheels 17. To hold the two frames together even when the ends of the frame 11 are grasped to lift the cot, a latching member 40 is provided at each side of the cot. This member 40 comprises a clip suspended from each bar 19 at 41 and having a lower end which snaps beneath the associated rod 14 of the frame 10. At this time, the locking bar 33 will be free of the locking member 38 and will rest on the transverse rod 16 of the frame 14 as shown in Figure 1. This bar is preferably bent slightly at 43 (Figure 4) to facilitate its movement during relative adjustment of the frames 10 and 11.

When the frame 11 is to be adjusted to its elevated position, the latches 40 are released and the frame 11 is lifted against the force of springs 31. This will swing the legs 12 and 13 upwardly and towards the foot end of the frame 10. The locking bar 33 will slide through the locking member 37 towards the foot end of the cot until the notch 38 engages the member 37. At this time the legs 12 and 13 will be vertical and the frame 11 will be locked in its uppermost position, the bar 33 serving as a diagonal brace to prevent swinging movement of the legs 12 and 13 in either direction. At this time a shock absorbing arrangement is provided by the support for the legs 12 on the bars 14 of frame 10 being spaced from the casters 17 at the head end thereof. Since the rods 14 are flexible, the frame 11 will be resiliently supported. Thus with the frame 11 in elevated position, the shock absorbing means is at the head end of the cot and with the frame 11 in lower position, the shock absorbing means is at the foot end of the cot. However, the entire frame 11 will be flexibly supported since when the shock absorbing means is at one end the frame 11 will pivot about the axis of the transverse rod 28 or 30 at the opposite end.

In the raised position of the frame 11 shown in Figures 2 and 3, it is very simple to move the patient from the cot onto the bed or vice versa, since these members will be at substantially the same level. When the patient is being moved from the bed to the cot or vice versa, obviously the guard handle 25 at the proper side is swung downwardly to the position shown in Figure 5. Also, in rolling the cot along a corridor it is not necessary for the bearers to stoop over. Furthermore, in going up and down stairs, movement of the patient is facilitated because bearers grip the frame 11 at approximately waist level.

Having thus described our invention, what we claim is:

An ambulance cot comprising a frame mounted on rollers and including longitudinally-extending resilient rods, a frame adapted to bear the patient and mounted on the first-named frame, and means for adjustably connecting the second frame to the first frame so that it can be adjusted from a lower position adjacent to the first frame to an upper position spaced above the first frame, said means comprising a pair of legs at each end of the cot hinged to the first frame and to the second frame and swingable in vertical planes when the second frame is adjusted relative to the first frame, one pair of said legs being pivoted to the first frame adjacent the end thereof and the other pair of said legs being pivoted to the first frame at a location spaced substantially from the end thereof, said legs being connected to the second frame by rigid brackets depending from the second frame, the lower ends of said brackets engaging the first frame when the second frame is in its lower position, the pair of brackets at one end engaging the longitudinal rods of the first frame at its end and the other pair of brackets engaging said rods of the first frame at a point spaced substantially from its end, springs anchored to the first frame and operatively connected to one of the pair of legs tending to urge said legs downwardly and to fold the frame together, and means for holding said second frame in its upper position, said holding means comprises a locking bar which is pivoted to the second frame adjacent one end thereof and cooperates with a lock on the first frame adjacent the other end thereof, said bar being pivoted to the second frame for vertical swinging movement, a yoke lock on the first frame through which said bar slidably passes, a locking notch in the upper edge of said bar for engaging said yoke lock, and a spring carried by the first frame engaging said bar and tending to swing it upwardly into contact with said yoke lock.

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