

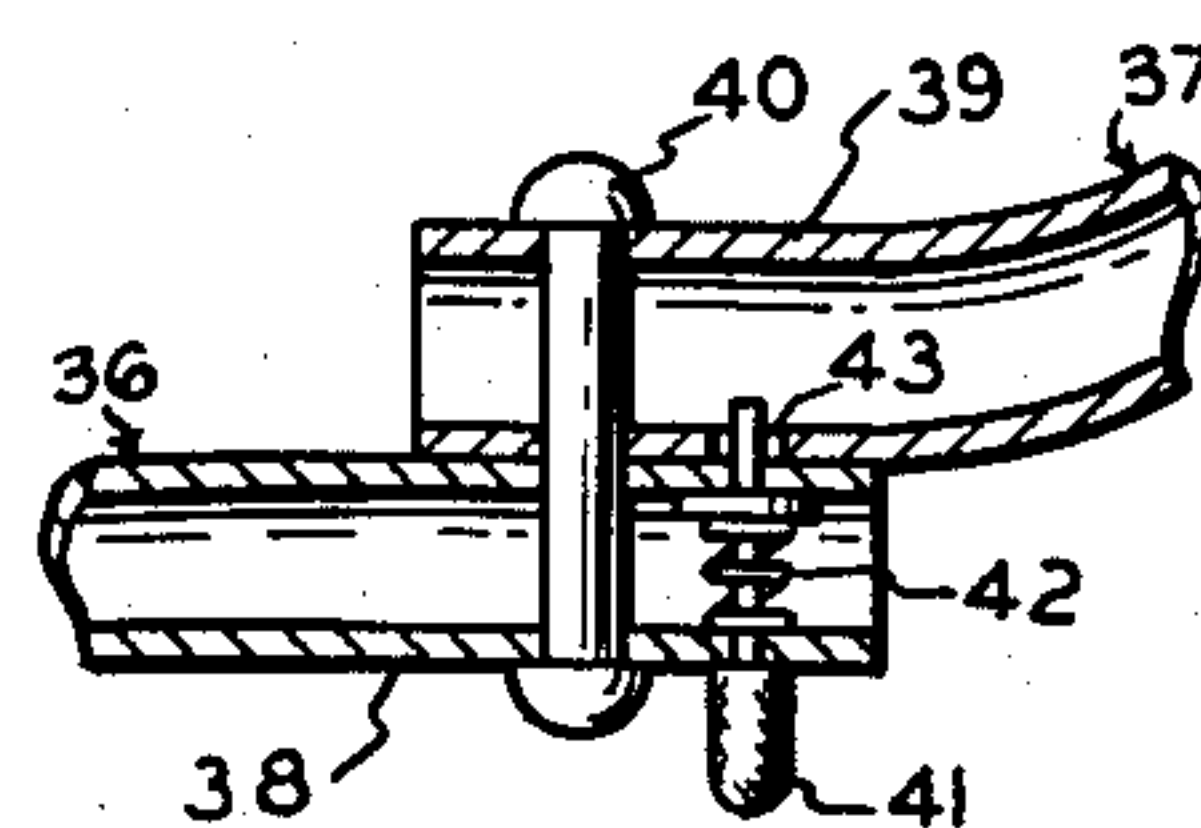
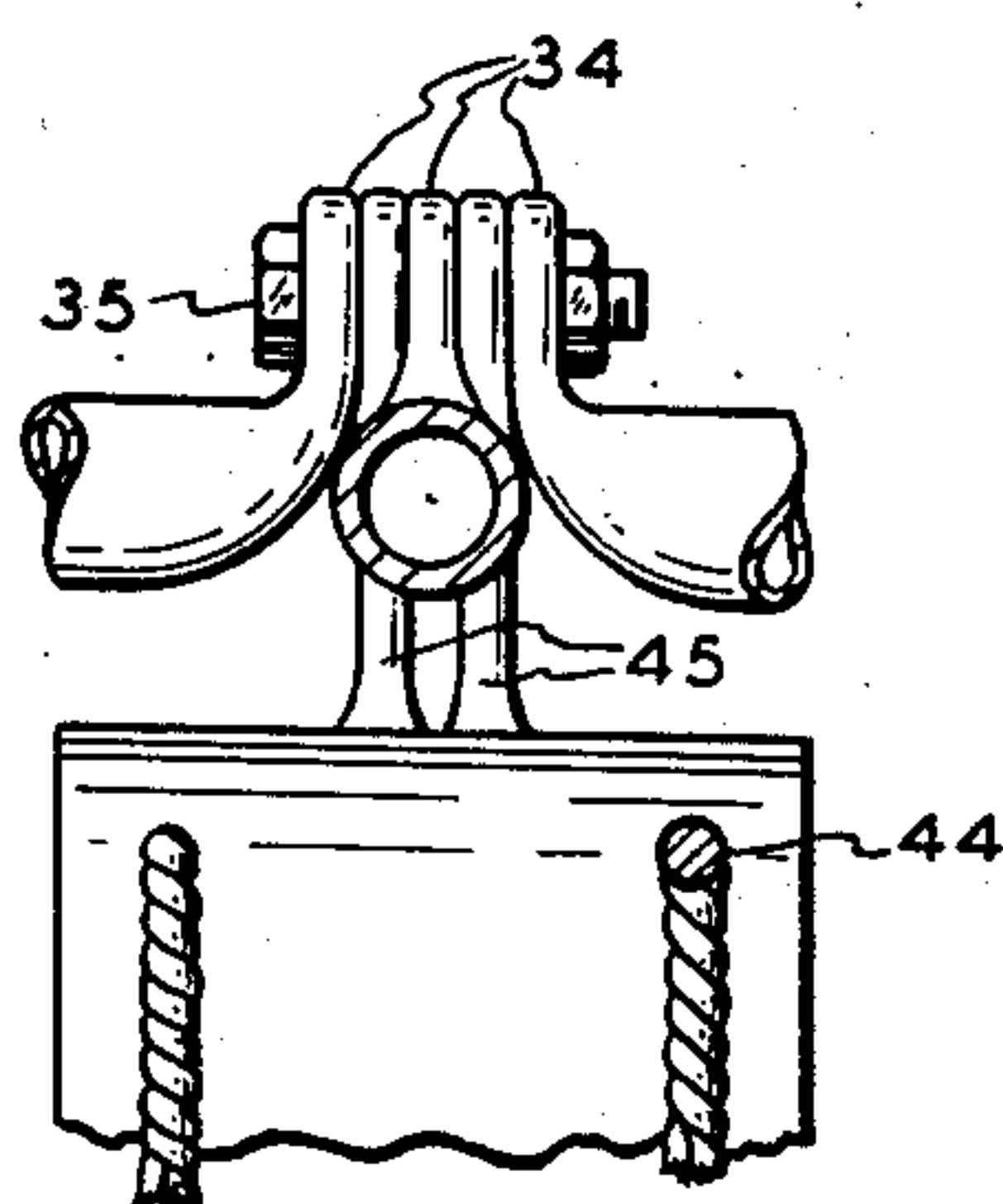
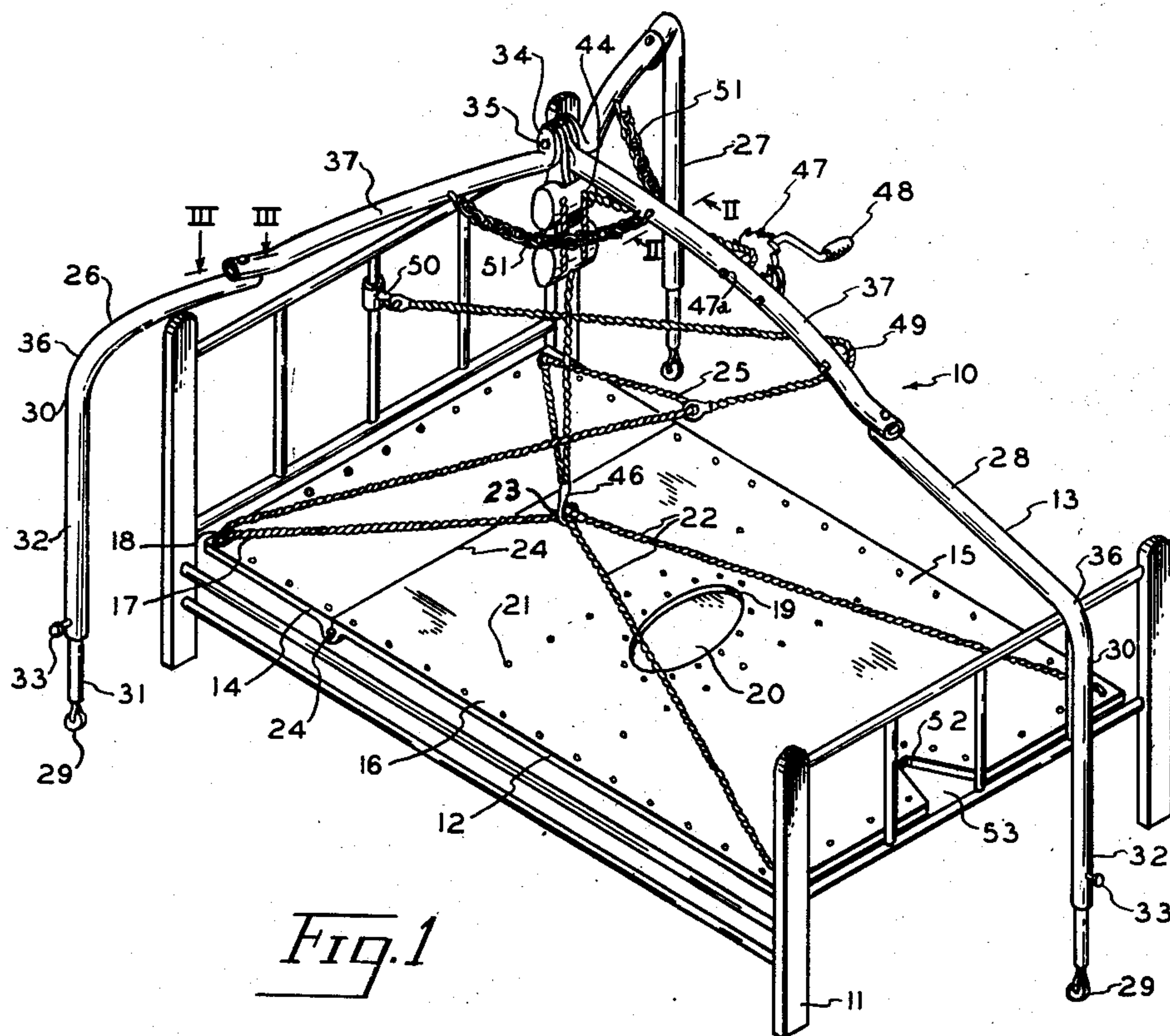
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THREE-LEGGED CARRIER FOR INVALIDS

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## THREE-LEGGED CARRIER FOR INVALIDS

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5 Claims. (Cl. 5—86)

1

This invention relates to hospital apparatus and more particularly to a pallet and a frame for the positioning and transportation of patients in a hospital.

A principal object of this invention is the provision of a novel apparatus for removing a hospital patient from one position to another in his bed and from one place to another in the hospital.

A further object of this invention is the provision of a pallet and frame for positioning a patient within his bed while resting on the pallet and moving him from place to place or from the bed during the period when the bed is being cleaned or made up.

An additional object of this invention resides in the provision of a novel frame for moving a pallet with a patient thereon smoothly and easily from the surface of the bed and from place to place.

Another object of this invention is to provide a frame for the carrying of a bed pallet which has an extremely broad base and yet can be moved through narrow places such as doorways and the space between beds.

A further object of this invention is the provision of an apparatus for use with patients for whom any sudden jolting or movement would be fatal.

A further object of this invention is the provision of an apparatus for the moving of patients which apparatus is rugged, strongly built, and which is easily made from readily available materials.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, the mode of its operation, and the manner of its organization may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which:

Figure 1 is a perspective view of a preferred form of apparatus constructed in accordance with the present invention, the apparatus being shown in operative position relative to a bed;

Figure 2 is an enlarged sectional view taken on the line II—II of Figure 1 and looking in the direction of the arrows;

Figure 3 is an enlarged sectional view taken on the line III—III of Figure 1 looking in the direction of the arrows.

Like reference characters denote like parts throughout the several figures of the drawing.

In the treatment of hospital patients, and par-

2

ticularly those with such ailments as heart trouble or such injuries as broken backs, it is sometimes extremely important that the patient's body be subject to the least possible movement. At times, for instance where the patient must be carried to the operating room from his bed, it has been the practice to slide him onto a wheeled table. This practice is often dangerous to say the least. Still, there are occasions where the patient for one or more reasons must be moved from his bed. The present invention avoids the dangers inherent in the former practice, by placing the patient on a pallet which is placed on his hospital bed and providing a movable supporting frame for the pallet, which frame is so constructed as to enable the pallet to be moved from place to place without disturbing the patient.

In the specific embodiment illustrated in Figure 1, the apparatus of the present invention, generally designated 10, is shown in conjunction with a hospital bed 11 and consists of a pallet 12 and a supporting frame 13. The pallet 12 consists of a frame 14 made up of tubular metal or the like and covered with a web 15 of cloth material, such as canvas. The frame 14 of the pallet is generally rectangular and the web 15 is of the same general shape and is provided with a peripheral hem 16 within which the frame of the pallet resides. The web is cut away at each corner to provide a clearance 17 for the attachment of rings 18 to the frame of the pallet at the corner intersection thereof. In the medial section of the web, an aperture 19 is provided for use by the patient in elimination. Beneath this aperture is attached a flap 20 which is fastened to the web in the vicinity of the aperture by suitable means, such as snap fasteners 21. Attached to each of the rings 18 at the corners of the pallet is a flexible member such as the ropes 22. The ropes 22 conveniently meet at a common point approximately over the center of gravity of the pallet and patient accommodated on the pallet, and are fastened to a ring 23. The frame 14 of the pallet is hinged on both sides at a position 24 corresponding generally to the position occupied by the waist of a patient lying on the surface of the pallet. The head end of the pallet is provided with a rope assembly 25 attached to the corner rings 18 for a purpose to be explained later.

The supporting frame 13 is a three-legged structure and, generally speaking, the legs are joined together at a more or less common point adapted to be situated above the center of gravity of the pallet and patient accommodated thereon.



## 3

Two of the legs 26 and 27 are of such a shape and size as to be adapted to be positioned adjacent to the sides of the bed and pallet near the head portions thereof. A third end leg 28 is adapted to extend over the foot of the bed and rest on the floor adjacent thereto. Each of the legs is provided at the bottom portion with a wheel or caster 29. Furthermore, each leg is generally vertical at the lower portion thereof as for a height corresponding generally to the height of the bed and this vertical lower portion 30 comprises two telescopic parts 31 and 32 which are held in their adjusted position as by means of a set screw 33 or the like. From the tops of these lower vertical portions 30, each of the legs extends upwardly and inwardly of the bed to the common meeting point. At this point each leg is provided with a vertical ear 34. Each of these ears has an aperture for the reception of a bolt 35 which extends horizontally and transversely of the bed through the ears and acts to join the legs in operative relationship. The end leg 28, which extends over the foot of the bed and toward the head of the bed, preferably is somewhat longer than the two side legs 26 and 27, particularly in the amount of its horizontal extent. The portion of each of the legs which lies between the vertical lower portion and the common junction of the legs is composed of an upper and a lower part 36 and 37. These two parts are formed at their adjacent ends with horizontal hinge portions 38 and 39 which are apertured to receive a hinge pin 40. Furthermore, these horizontal portions are provided with detent means comprising a detent pin 41 residing in the horizontal portion of the lower part and biased upwardly by a spring 42 residing within the leg. The inner end of the detent pin ordinarily resides in an aperture 43 in the horizontal portion of the upper part of the leg.

The supporting frame is provided with a block and tackle 44. The upper block of the block and tackle is provided with two apertured ears 45 which are comprehended between the three ears 34 of the legs of the frame and are held therebetween by the bolt 35. The lower block of the block and tackle is provided with a depending hook 46 which runs through the ring 23 attached to the pallet assembly. The free end of the rope of the block and tackle is wound around the drum of a small winch 47. The winch illustratively is mounted on a horizontal pivot pin 47a running through the upper portion of the end leg 28 of the frame. The winch is further provided, as is usual, with a handle 48 and a pawl and ratchet.

The frame supports a pulley 49 which is mounted adjacent to the winch 47 on the upper portion of the end leg 28. The rope assembly 25 attached to the head of the pallet passes around this pulley and the free end of the rope assembly is attached to a place convenient to the patient such as a clip 50 mounted on the head of the bed.

A short distance from the apex formed by the junction of the three legs is a group of chains 51, each joining an adjacent pair of legs and serving to prevent the legs from spreading outwardly from one another when the frame is loaded with the weight of the patient. These chains also serve to prevent excessive stresses in the ears and bolt which make up the junction of the legs. If desired, the chains 51 are continuous, linking all three legs are in effect a single chain. The pallet may be further provided with a cut-out

## 4

portion 52 for the reception of the end leg 28 when the pallet is in raised position and a flap 53 may be provided for use in covering the cut-out portion during ordinary use.

In operation, the apparatus of the instant invention is used in the manner described below. The pallet 12 ordinarily rests on a hospital bed 11 and the patient rests on the pallet. The pallet may or may not be provided with suitable bed clothes. The patient, for most of the time, is cared for in the same manner as he would be if he were resting on an ordinary hospital bed. As a matter of fact, ordinarily the ropes 22 of the pallet may be removed and the frame 13 removed from the bed. The patient, of course, would be able to raise himself to sitting position if the frame were in position at all times by pulling on the rope assembly 25 whereby the head end of the pallet would be raised at an angle to horizontal about the hinges 24 and the patient would be moved to a sitting position.

When it is desired to move the patient, the frame 13 is moved into position over the bed, if it is not already in that position, and the hook of the block and tackle is attached to the ring of the pallet and adjustments are made to insure that the pallet will be lifted evenly upwardly when the block and tackle 44 is actuated by the use of the winch 47. The handle 48 of the winch is turned, raising the pallet and patient directly upwardly into the frame. The pallet is preferably raised until it almost touches the legs as they converge toward one another. As a matter of fact, a pallet in this position may be prevented from swinging by proper use of the rope assembly 25. The apparatus is now ready for the transportation of the patient to his destination.

Once the pallet and patient have been lifted clear of the bed, the frame may be moved about on its wheels and casters 29. Among the problems that will be encountered in moving about in a hospital is the fact that the frame is considerably wider than the average doorway and sometimes considerably wider than the space between beds. The frame is necessarily quite wide because of the fact that it must be large enough to straddle the bed. Furthermore, some provision must be made for steering and maneuvering the patient and pallet around corners. The problem presented by the width of the frame is overcome by the provision of the hinges described above for the side legs 26 and 27. As the frame is wheeled toward a doorway, the detent 41 in each of the hinges of the side legs is released and the legs are folded forwardly or backwardly as seems to be best in the particular situation. It can be seen that it is desirable in designing the frame to be sure that the dimension between the hinges of the side legs is slightly less than the width of any doorway or corridor through which it may be desired to pass the frame. It can be seen also that the steering will generally be brought about by the hinge action of the end leg 28 about its pivot pin 40. It is preferred that the end leg be directed in the line of progress of the frame especially when it is made considerably longer than the side legs 26 and 27. This gives more sensitive steering. Of course, after the frame, pallet, and patient have reached the destination, the pallet and patient are lowered to the operating table, hospital bed, or other desired resting place.

It is to be observed that the apparatus of the present invention is useful for other purposes than those described above. For instance, it makes a strong and dignified means for carry-



5

ing dead bodies. It is also useful in a hospital for the carrying of heavy objects. Using this apparatus, a single man may perform all the indicated tasks with safety and with ease.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions, and changes in the forms and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. A supporting frame for a hospital pallet, comprising: a first, second, and a third leg held in operative relationship in such a manner that the frame is adapted to straddle a bed upon which the pallet rests, the lower extremities of each of said legs having a substantial vertical portion, the lower portion of each of said legs being provided with a caster, the upper portion of each of said legs having a hinge with a vertical pivot whereby the lower portion may be folded out of line with the upper portion, each of said vertical hinges having a detent means for locking said upper and lower portions in aligned relationship.

2. A supporting frame as recited in claim 1, wherein: the lower portions of said legs are telescopically adjustable.

3. An apparatus of the character described, comprising: a pallet, a three-legged frame supporting said pallet and having the upper ends of its legs rigidly joined together at an apex over said pallet, lift means on said frame and connected with said pallet for raising the same substantially horizontally toward said apex, two legs of said frame having upper portions extending backward over said pallet and beyond the same from said apex and the other leg of said frame extending forward over said pallet and beyond the same from said apex, and said legs having vertical lower portions increasing the height of said frame and clearing said pallet for the latter to move vertically through an appreciable range of lift, all with small standing area demanded by said frame, said two legs being side legs of substantially the same size and proportion having their vertical portions respectively on opposite sides of said pallet and clearing the same near the back end of the pallet, and the other of said legs having its vertical portion substantially centrally in advance of the forward end of said pallet, and rollers on the lower ends of the vertical portions of said legs whereby said frame and its load may be rolled as a unit.

4. An apparatus of the character described, comprising: a pallet, a three-legged frame having the upper ends of its legs rigidly joined to-

6

gether at an apex over and supporting said pallet, lift means on said frame and connected with said pallet for raising the latter toward said apex and including means for suspending said pallet substantially horizontally from said apex, two legs of said frame having upper portions extending backward over said pallet and beyond the same from said apex and the other leg of said frame extending forward over said pallet and beyond the same from said apex, and said legs having vertical lower portions increasing the height of said frame and clearing said pallet for the latter to move vertically through an appreciable range of lift, all with small standing area demanded by said frame, said two legs being side legs of substantially the same size and proportion having their vertical portions respectively on opposite sides of said pallet and clearing the same adjacent the back end of the latter, and the other of said legs having its vertical portion substantially centrally in advance of the front end of said pallet and having its upper portion extending farther from said apex than the upper portions of the other two legs with said apex being disposed more nearly over the back end of said pallet than over the front end of the pallet, so as to achieve better balanced support of the pallet when the pallet is occupied by a person, and rollers on the lower ends of the vertical portions of said legs, whereby said frame and its load may be rolled as a unit.

5. A supporting frame for a hospital pallet, comprising: a first, second, and a third leg held in operative relationship in such a manner that the frame is adapted to straddle a bed upon which the pallet rests, the lower extremities of each of said legs having a substantial vertical portion, the lower portion of each of said legs being provided with a roller, and the upper portion of at least one of said legs having a hinge with a vertical pivot whereby the lower portion may be folded out of line with the upper portion, said vertical hinge having a detent means for locking said upper and lower portions in aligned relationship.

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