N. SINCLAIR.

BED FRAME.

APPLICATION FILED MAR. 5, 1915.

1,167,123.

Patented Jan. 4, 1916.

FIG. 1.

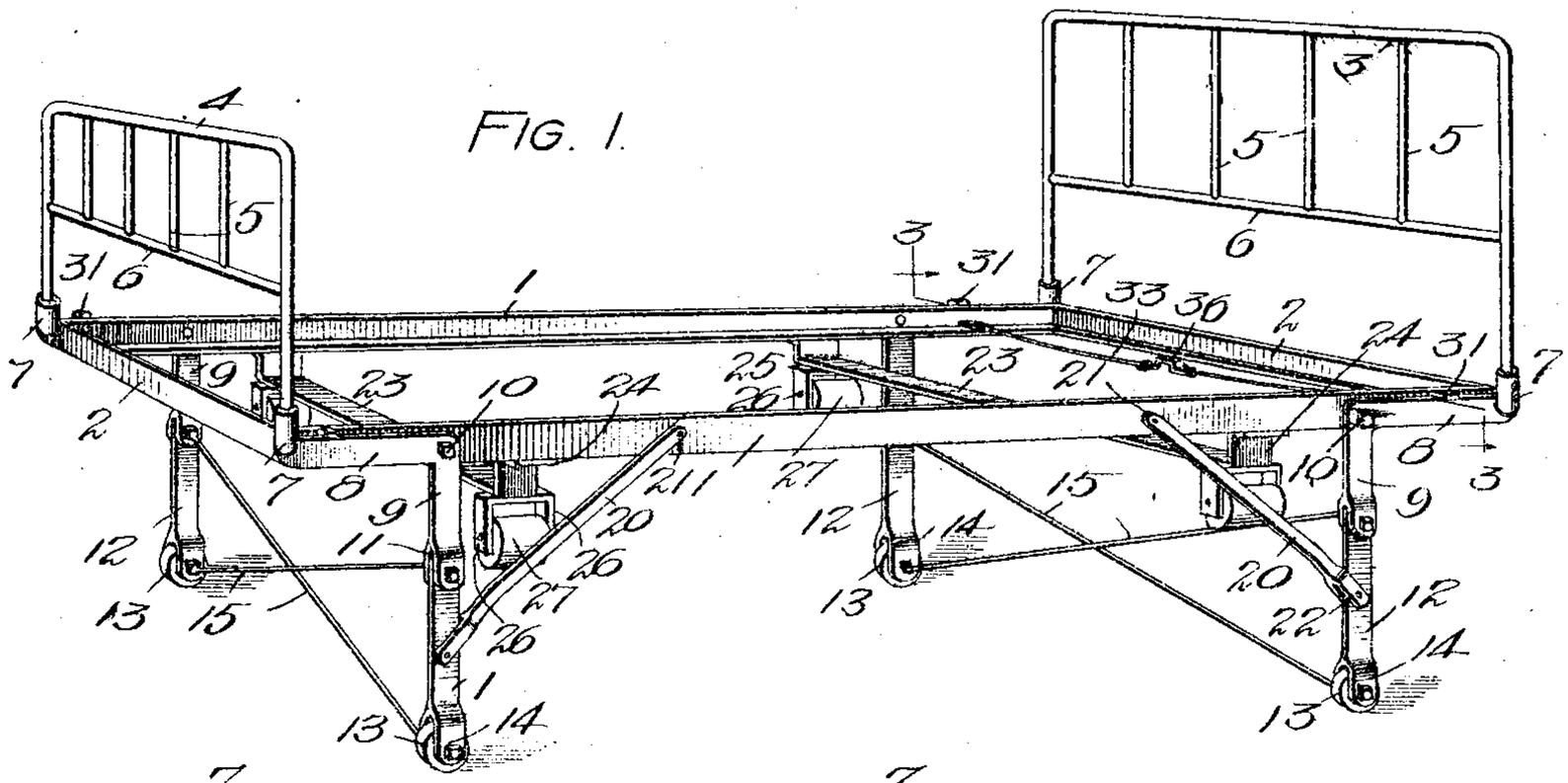


FIG 2

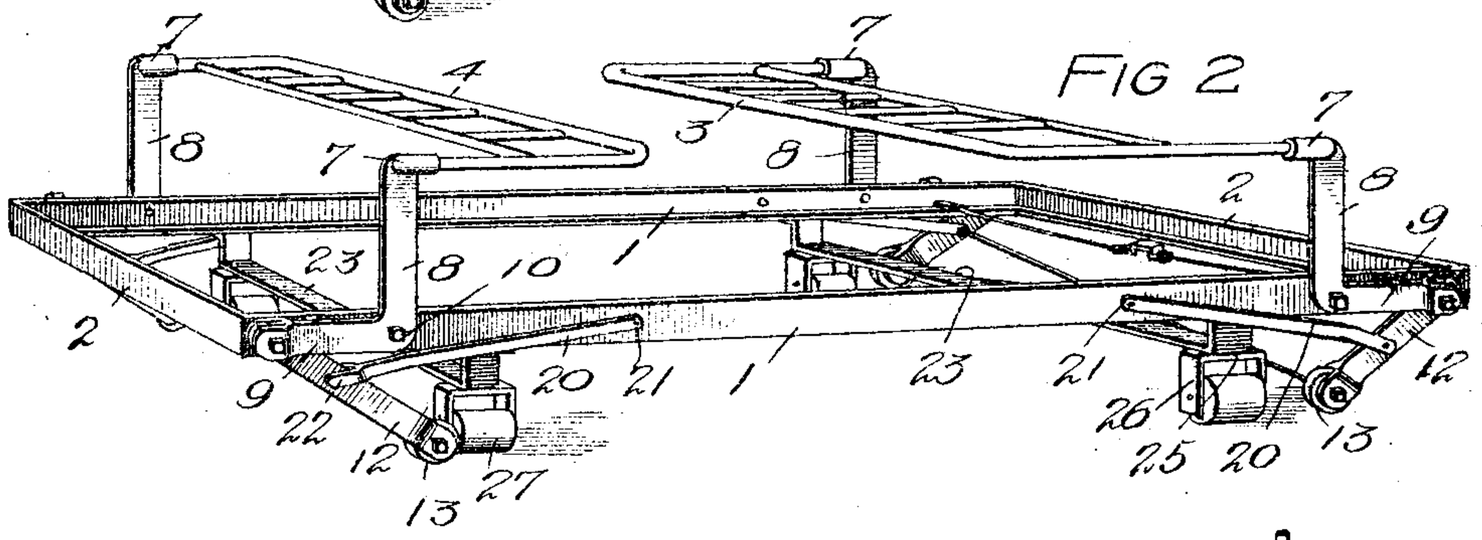


FIG. 3.

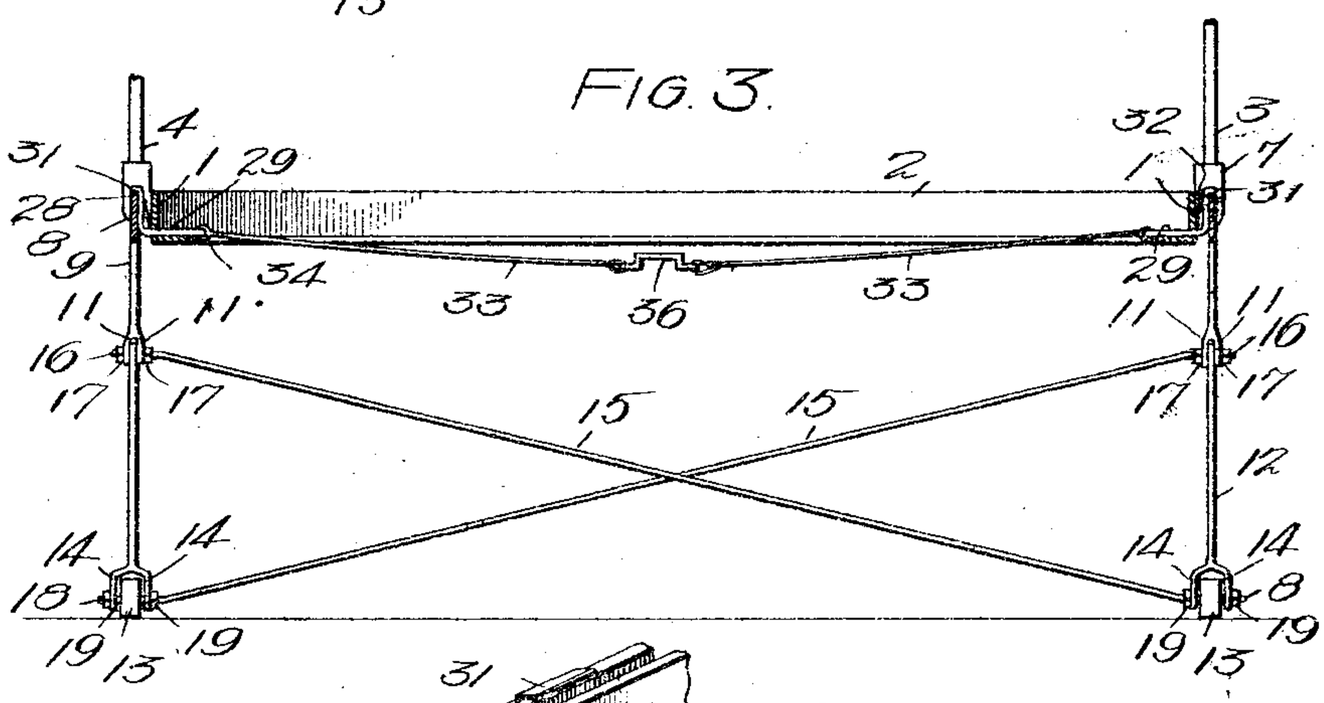
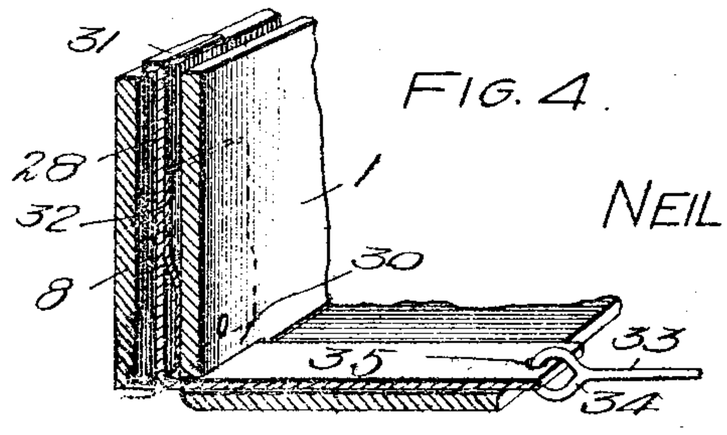


FIG. 4.



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BED-FRAME.

1,167,123. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed March 5, 1915. Serial No. 12,377.

To all whom it may concern:

Be it known that I, NEIL SINCLAIR, a citizen of the United States, and a resident of Boise, in the county of Ada and State of Idaho, have invented a new and useful Improvement in Bed-Frames, of which the following is a specification.

My invention is an improvement in bed frames, and has for its object to provide a frame of the character specified, wherein collapsible supporting legs are provided, together with a folding head and a folding foot capable of being folded over upon the body of the frame and connected with the legs to collapse the same when the said head and foot are folded, and wherein the legs have casters or rollers arranged in the usual manner, and the frame is provided with other casters or rollers brought into operative position by the folding or collapsing of the frame, and arranged to permit the frame to be moved laterally instead of longitudinally, thus especially adapting the frame for insertion beneath another bed.

In the drawings: Figure 1 is a perspective view of the improved frame in extended condition, Fig. 2 is a similar view in collapsed or folded condition. Fig. 3 is a section on the line 3—3 of Fig. 1, looking in the direction of the arrows adjacent to the line, and Fig. 4 is an enlarged sectional detail of a portion of the frame showing the spring mechanism.

The present embodiment of the invention comprises a substantially rectangular body, consisting of side bars or members 1 and end members or bars 2, and the said side and end members are continuous, and are preferably of angle material as shown. A head 3 is provided and a foot 4, the head and the foot being similar, but of different sizes, and each, as shown, is composed of a substantially U-shaped frame having a filling at the top thereof composed of vertical bars 5 and a connecting cross bar 6.

The lower end of each arm of the U-shaped frame of the head and foot is received in a sleeve 7, on one arm of an angle or elbow lever to be described. Each of the angle or elbow levers comprises an arm 8 and an arm 9, the sleeve 7 before mentioned being secured to the arm 8 with the axis of the sleeve approximately parallel to the arm 9 but extending in the opposite direction. The elbow levers 8—9 are arranged near the corners of the frame 1—2 and at the sides thereof, and a pair of elbow levers is connected to each side member of the frame.

The elbow levers are pivoted to the side members by bolts or rivets 10, the said bolts or rivets engaging openings in the elbow levers at the junction of the arms, and the elbow levers are so arranged that when the arms 8 thereof are parallel with the side member 1 of the frame, the sleeves 7 will be at the ends of the said side members, and the axes of the sleeves will be vertical.

Each of the arms 9 of the elbow levers is forked at its free end and the arms 11 of each fork engage opposite sides of the upper end of a leg 12. The arms of each fork are pivoted to the leg in a manner to be described, and the lower end of each leg is forked, a roller or wheel 13 being journaled between the arms 13 of the fork of each leg. The axis of each roller 13 is horizontal and transverse to the bed, and the elbow levers are so arranged that the axes of the two rollers at each end of the bed are in alinement. The legs 12 at each end are connected and braced against each other by means of crossed brace rods 15, and the said rods provide the pivot pins which connect the fork arms 11 with the leg and also the journal pins upon which the rollers 13 rotate.

Each of the inclined brace rods 15, as shown more particularly in Fig. 3, has one end bent at an obtuse angle to the body of the rod and threaded, and the said ends are passed through registering openings in the arms 11 of the fork of the elbow lever, and in the upper end of the adjacent leg 12, and nuts 17 are threaded onto the said ends at the outer sides of the fork arms. The opposite ends 18 of the brace rods 15 are also bent at an obtuse angle to the body of the rod and lie parallel with the end 16 and the said ends 18 are also threaded. These ends 18 are passed through openings in the arms 14 of the forks at the lower ends of the leg 12 and through the rollers 13, and nuts 19 are threaded onto the said ends outside of the arms 14. The legs 12 at each end are thus rigidly braced against each other as are also the free ends of the arms 9 of the elbow levers.

An inclined brace 20 is arranged between each leg 12 and the adjacent side member 1 of the bed frame, and on the inner side of

the leg. Each of the levers [illegible] is pivoted to the adjacent side member [illegible] as indicated at 21 at one end of the lever and the opposite end of the lever is forked. The arms 22 of the fork engage opposite sides of the adjacent leg 12 and the said arms are pivoted to the leg. It will be observed that the arms 22 of the fork of each lever are bent to lie at a slight angle with respect to the body of the said lever [illegible] it is evident that when either [illegible] 4 is folded over upon the [illegible] as shown in Fig. 2 the upper ends of the legs 12 will be swung outwardly by the [illegible] of the elbow levers. Because of the brace 20 arranged between each leg and the frame 1—2, the lower end of the leg supporting the roller 13 will be swung inwardly and the said lower end will also be raised or moved toward the frame 1—2.

When the head and foot 3 and 4 are swung inwardly and downwardly to lie parallel with the frame 1—2 the arms 8 of the elbow levers will be vertical and the arms 9 will be approximately parallel with the side members 1. The legs 12 swinging on the braces 20 will incline inwardly and the rollers will be brought near the plane of the frame [illegible]. These rollers are as before stated journaled on axes transverse to the frame so that the bed frame might move freely longitudinally on the rollers. In placing the bed under another bed however, in the manner of a trundle or truckle bed, it is desirable to move the said bed sidewise or laterally and other wheels or rollers are provided for that purpose.

Plates 23 are arranged transversely of the frame 1—2 below the same, and each of the said plates has its ends offset laterally upward as indicated at 24, and the said offset ends 24 are lapped upon the under faces of the horizontal portions of the side members 1 of the frame and are secured thereto in any suitable or desired manner.

A U-shaped bearing bracket comprising a body 25 and arms 26, is secured to each end of the body of the plate, the body of said bracket being secured to the plate transversely thereof and at the end thereof with the arms 26 of the bearing bracket depending below the plate. Rollers 27 are journaled between the arms, the axes of the rollers being longitudinal to the bed.

The bodies 23 of the plates are spaced far enough below the frame 1—2, so that when the legs 12 are folded as above mentioned, and as shown in Fig. 2, the under surfaces of the rollers 27 will be below the under surfaces of the rollers 13. Thus the rollers 27 are normally out of contact with the supporting surface for the bed and are not brought into contact with the supporting surface until the legs 12 are folded.

When the improved bed is folded as shown in Fig. 2 it may be pushed under another bed [illegible] the legs. When the bed is extended as shown in Fig. 1, there is no possibility of the bed collapsing. The braces 20 prevent any outward swinging of the upper ends of the legs 12, and the said upper ends cannot be swung outwardly unless the head or the foot is swung inwardly. Any [illegible] may be [illegible] frame 1—2.

A latch mechanism is provided for holding the bed in extended position. The latch mechanism comprises angle plates arranged at the corners of the frame, each angle plate consisting of a vertical portion 28 and an integral horizontal portion 29, and the angle plates are arranged near the ends of the side members. Each of the side members 1 has a slot or passage 30 at the junction of the vertical and the horizontal portions, and the portion 28 of each angle plate passes through the slot with the vertical portion between the vertical portion of the adjacent side bar, and the adjacent elbow lever.

The upper end of the vertical portion 28 of each angle plate has a lateral flange 31, which is adapted to engage over the arm 8 of the elbow lever when the bed is extended, and over the arm 9 of the elbow lever when the bed is collapsed. A plate spring 32 is secured to the outer face of the vertical portion of the side bar of the bed frame at each angle plate, and the free end of each spring presses against the vertical portion 28 of the angle plate, normally holding the flange 31 in engagement with the upper edge of the arm.

The horizontal portions of adjacent angle plates are connected by the link mechanism, most conveniently shown in Fig. 3. This mechanism comprises similar sections [illegible] 33 [illegible] which [illegible] in the horizontal portion of the angle plate. The inner end of each link is passed through an opening in the end of a connecting clip 35, and is turned to form an eye or loop to prevent the [illegible] of the said end.

Each of the clips 35 is substantially U shaped as shown, and it will be evident that when this clip is pressed downwardly, both latches will be withdrawn to release the adjacent arm of the elbow lever. When the elbow levers are turned with the arms 8 parallel with the side members of the frame, the flanges 31 of the latches engage over the upper edges of the arms, holding them from swinging upward, and preventing collapsing of the bed.

When the bed is collapsed as shown in Fig. 2, the flanges 31 engage over the upper edges of the arms 9 in like manner, but since the said arms swing downward the latches have no holding function with the bed in collapsed position.

It will be understood that a latch mecha-

nism is arranged at each end of each side, for engaging over each arm 8, and that a similar operating mechanism comprising the links 33 and the clips 36 is arranged at each end of the bed.

It will be evident that when the bed is set up to collapse the same it is only necessary to release the latches at the head and foot, swing the said head and foot over upon the body as shown in Fig. 2, and the bed is collapsed, and is ready to move laterally, being supported now by the rollers 27 instead of by the rollers 13. To extend the bed the head and foot are merely lifted into vertical position.

If desired, a specially prepared receptacle may be provided for the bed in which it is run when not in use. The improved bed is especially desirable wherever it is desired to economize in space.

I claim:—

1. A bed frame, comprising a substantially rectangular open body, elbow levers pivoted to the opposite sides of the body near the ends thereof, each lever consisting of arms extending at approximately a right angle with respect to each other and of a length to extend from the pivotal connection to the adjacent end of the body, a head frame and a foot frame, the head frame being connected to the outer ends of the arms of the elbow levers at one end and the foot frame being connected to the outer ends of the arms of the elbow levers at the other end, a leg pivoted to the other arm of each elbow lever, a roller at the lower end of each arm, a pair of inclined braces arranged between the legs at each end of the bed, the braces being crossed at the center of the frame and the ends thereof forming the pivotal connection between the legs and the elbow levers and the journal pins for the rollers, a brace arranged between each leg and the adjacent side member of the body and on the inner side of the leg, and pivoted to the side member at one end and to the leg at the other, a plate arranged transversely of the body near each end thereof, rollers depending from the ends of the plate and journaled to rotate on axes longitudinal to the bed, and to come into engagement with the floor when the legs are folded, and latch mechanism for holding the bed in extended position, said mechanism comprising angle plates near the ends of the side members of the body, each angle plate comprising a horizontal and a vertical portion and the vertical portion of each angle plate having a flange at its upper end for engaging over the adjacent arm of the adjacent elbow lever, a spring normally pressing each angle plate into engagement with the arm, and a common means connecting the horizontal portions of the angle plates at each end of the bed for simultaneously moving the said plates inwardly to disengage them from the arms of the elbow levers.

2. A bed frame, comprising a substantially rectangular body, elbow levers pivoted to the body at the opposite sides and near the ends thereof, each elbow lever comprising two arms extending at approximately a right angle and of a length to extend from the pivotal connection to approximately the adjacent end of the body, an end frame secured to the corresponding arms of the elbow levers at each end of the frame, and standing erect when the arms to which the frame is secured are in the plane of the body, a leg pivoted to the other arm of each elbow lever and extending in alinement with the arm when the adjacent end frame is erect, a brace for each leg hinged to the leg intermediate the ends thereof, and to the body at the inner side of the leg, latch mechanism adjacent to each elbow lever for holding the lever with the adjacent end frame in vertical position, and a common means for releasing the said mechanisms at each end of the body, each of the said latch mechanisms comprising a sliding member movable toward and from the elbow lever on the body and adapted to over-lie the upper edge of the arm when in outward position, and a spring pressing each of the sliding members outwardly.

3. A bed frame comprising a body, an elbow lever pivoted to each side of the body near each end thereof, a leg pivoted to one arm of each elbow lever, an end frame connecting the other arms of the elbow levers at each end of the bed, a swinging connection between each leg and the body for moving the free end of the leg upward when the adjacent end frame is swung over upon the body, a latch engaging over each elbow lever when such levers are in normal position to prevent swinging movement thereof, springs normally holding the latches in engaging position, and a common means for releasing the latches at each end of the bed.

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Witnesses:
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