

No. 896,239.

E. B. PEIRCE.
WALL BED.

PATENTED AUG. 18, 1908.

APPLICATION FILED APR. 8, 1907.

3 SHEETS—SHEET 1

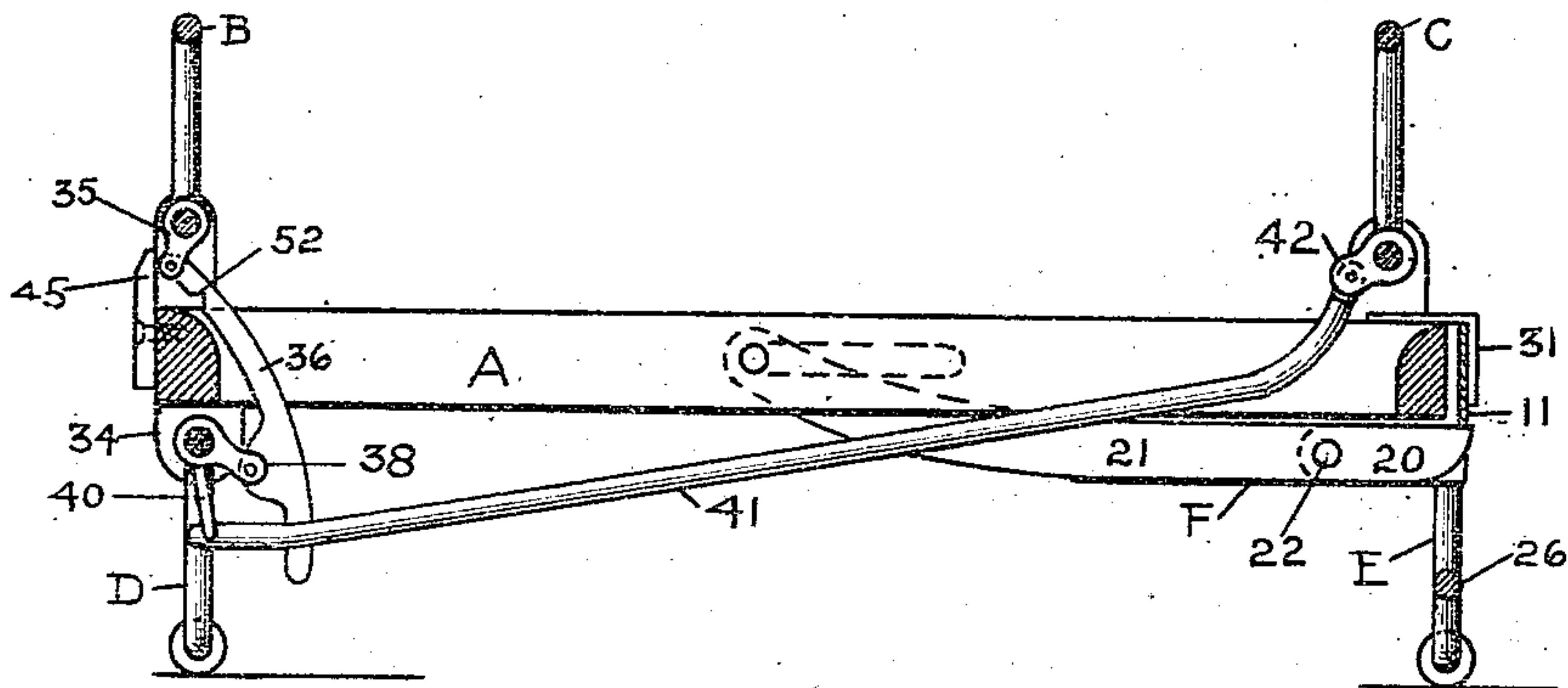


FIG. 1.

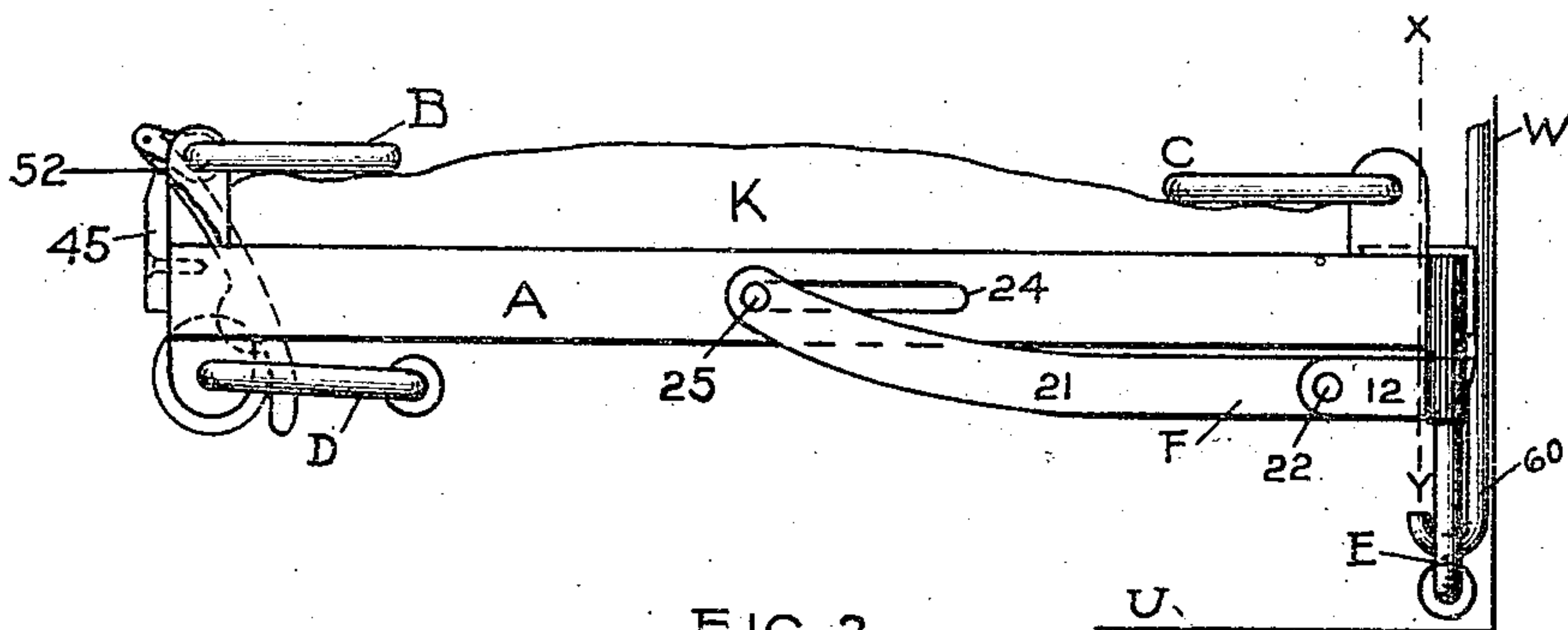


FIG. 2.

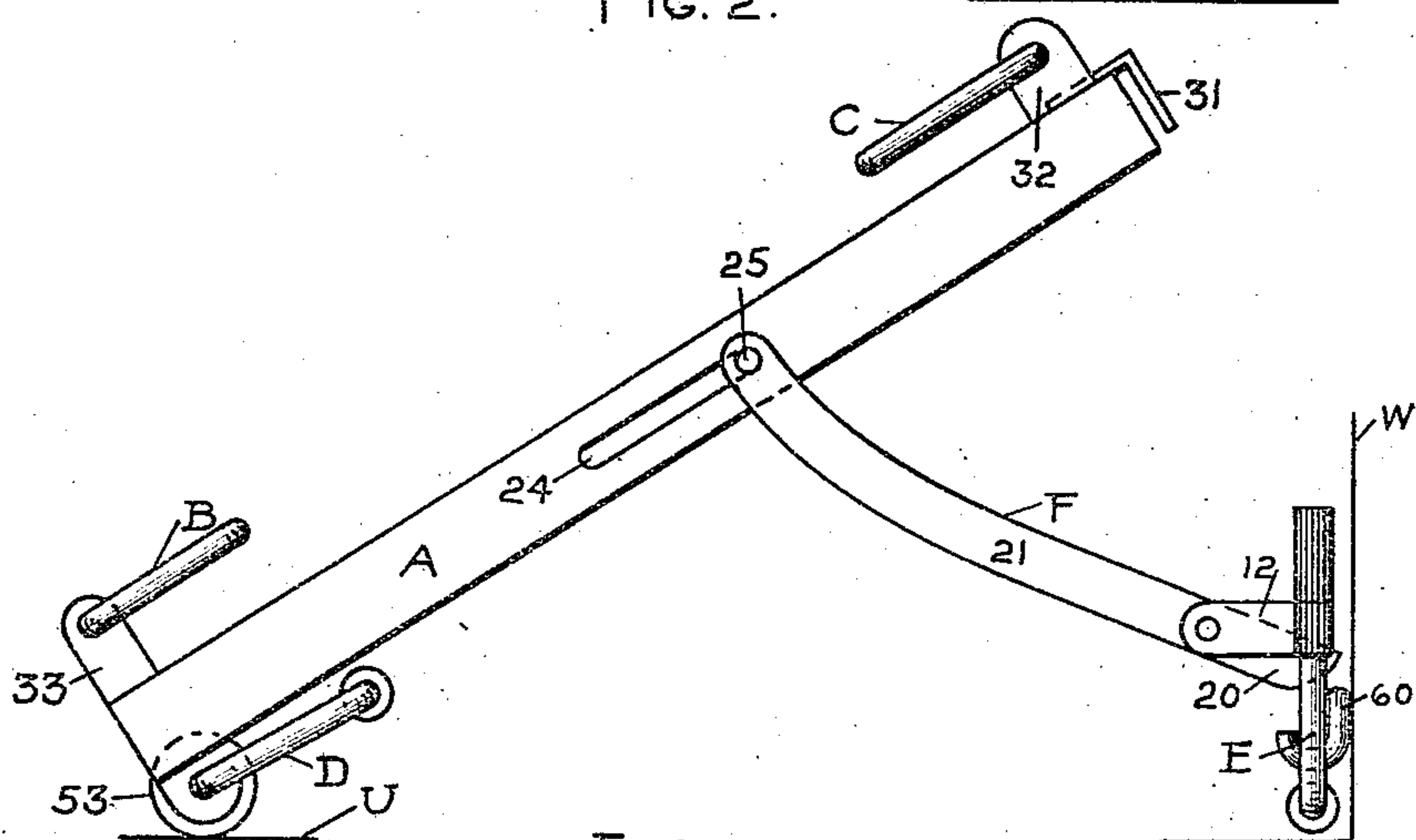


FIG. 3.

WITNESSES

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3 SHEETS—SHEET 2.

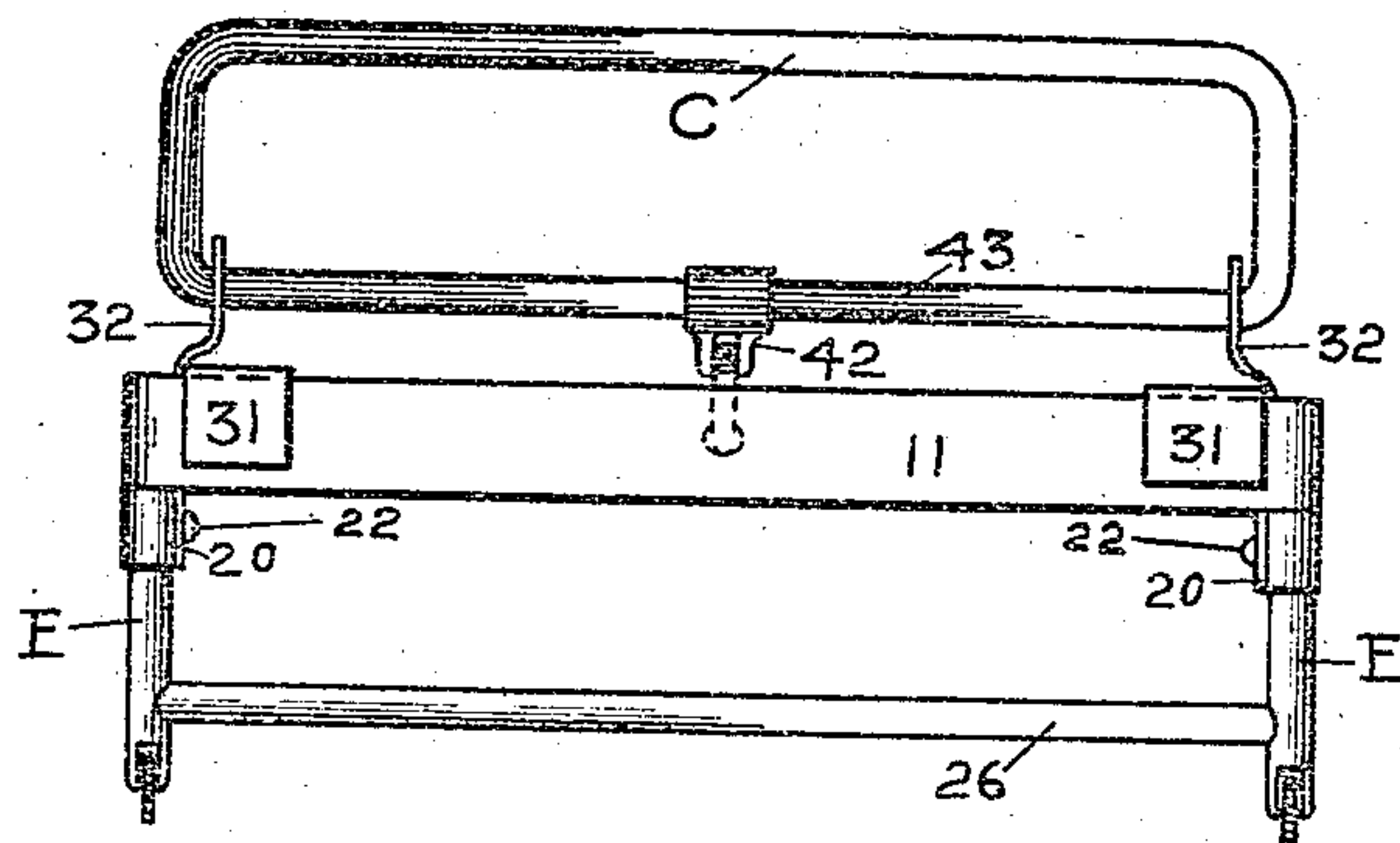


FIG. 4.

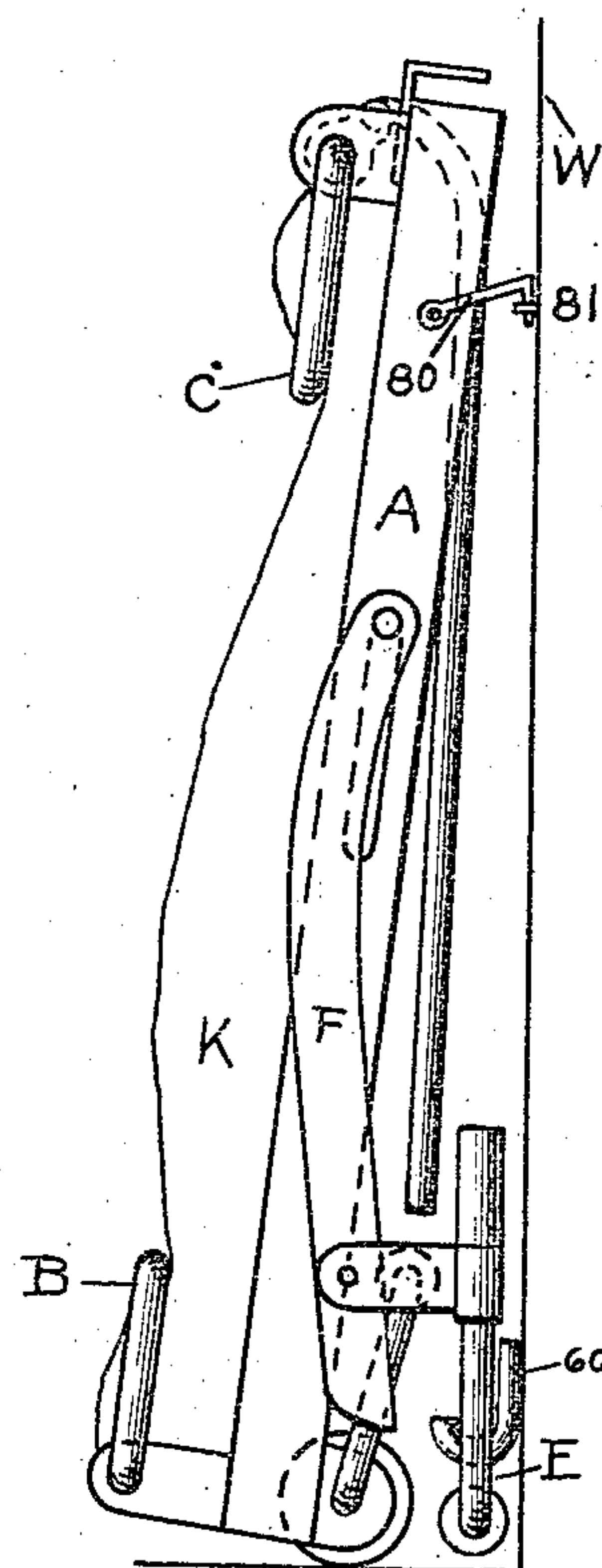


FIG. 5.

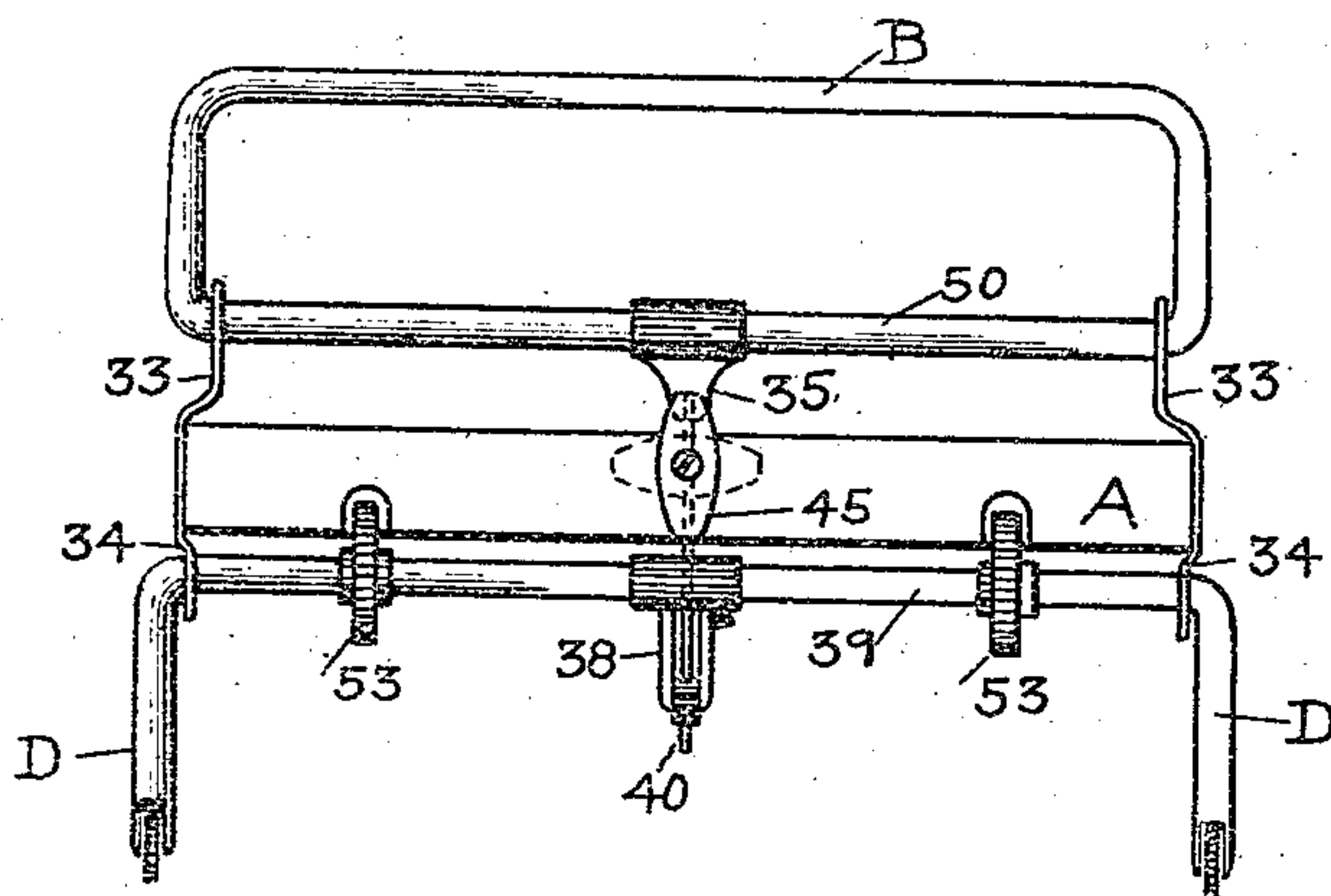


FIG. 6.

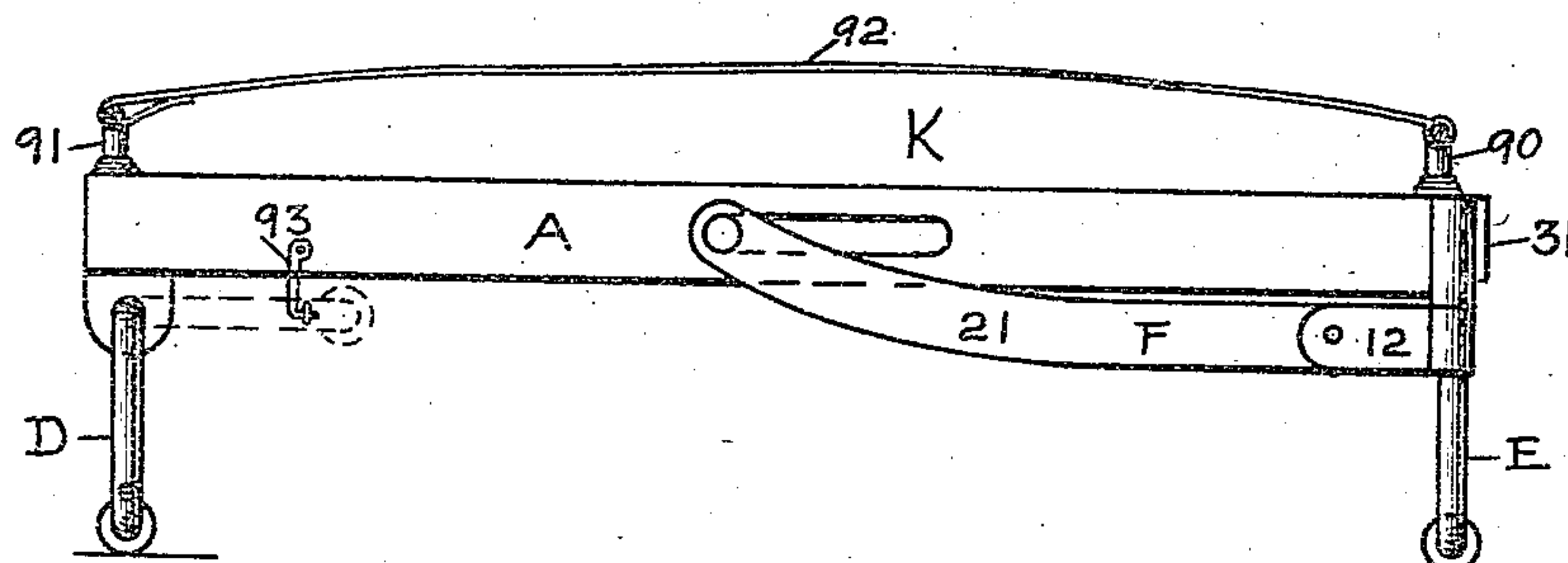


FIG. 7.

WITNESSES

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3 SHEETS—SHEET 3.

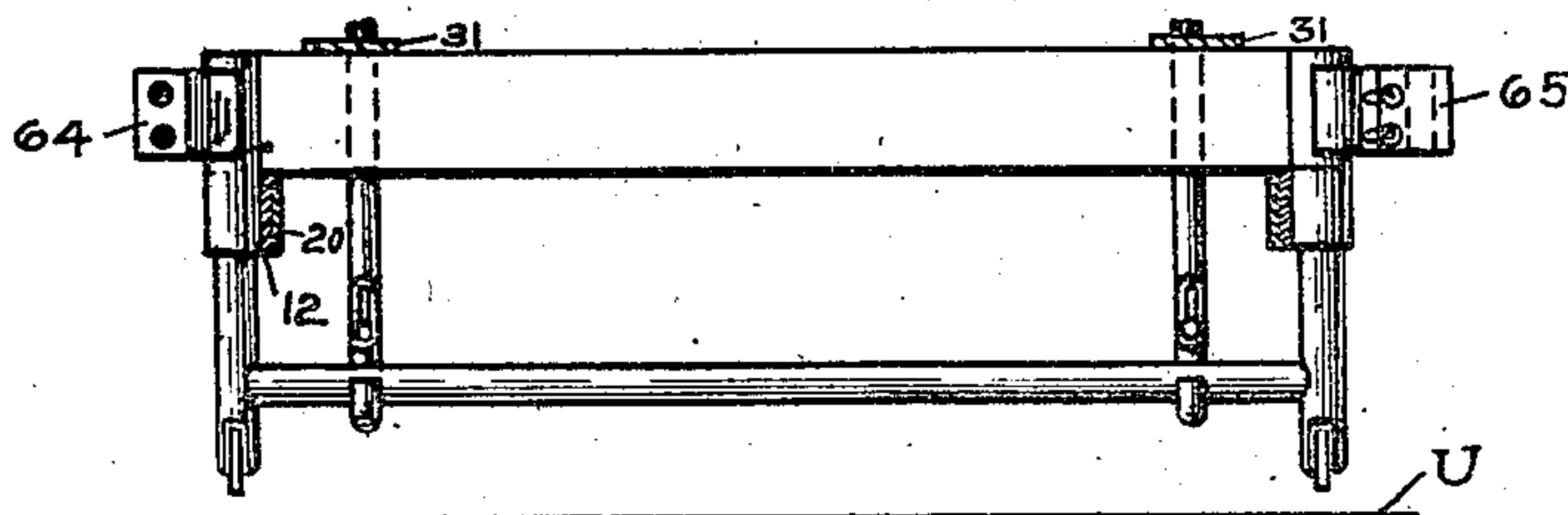


FIG. 8.

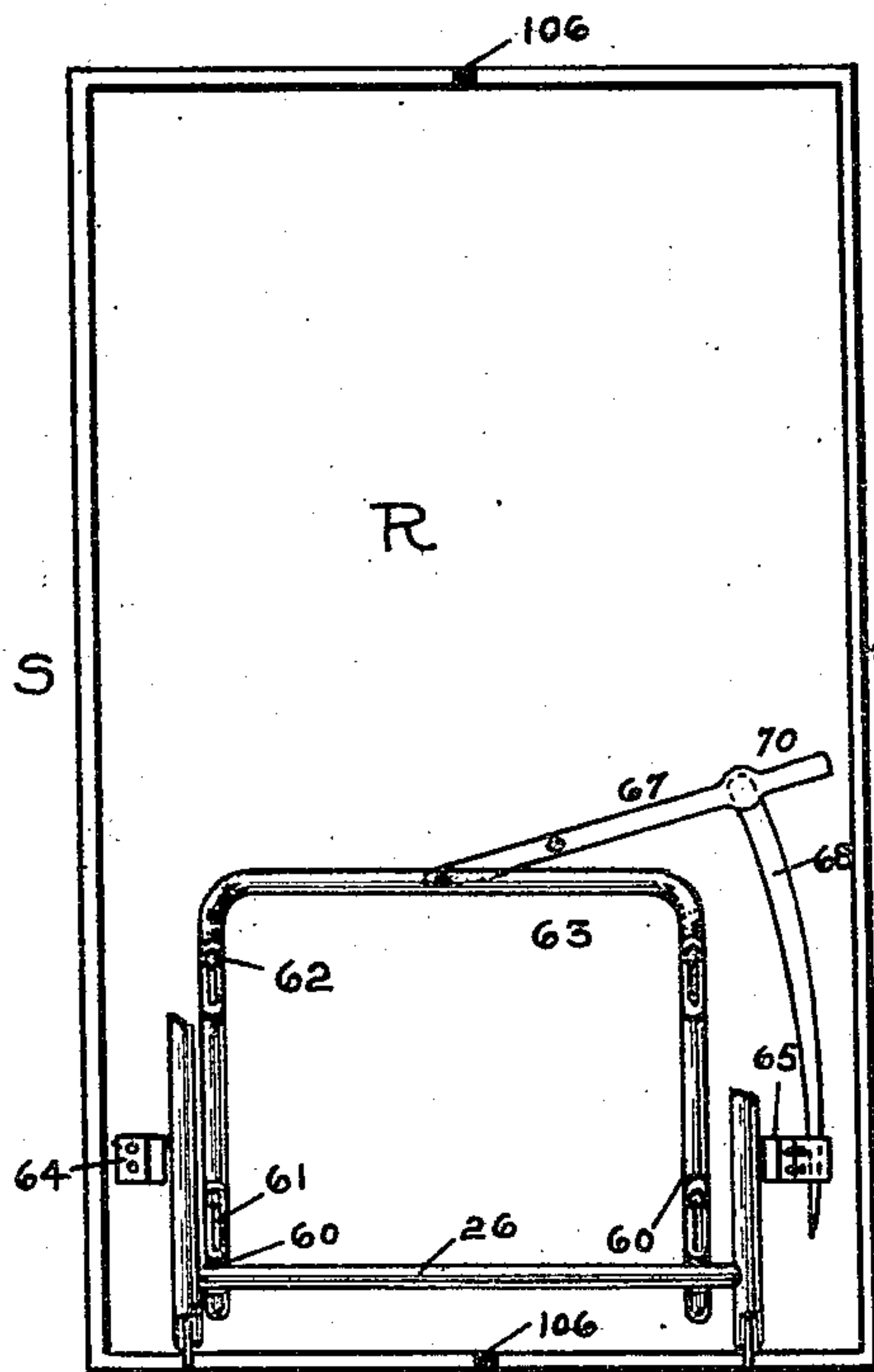


FIG. 9.

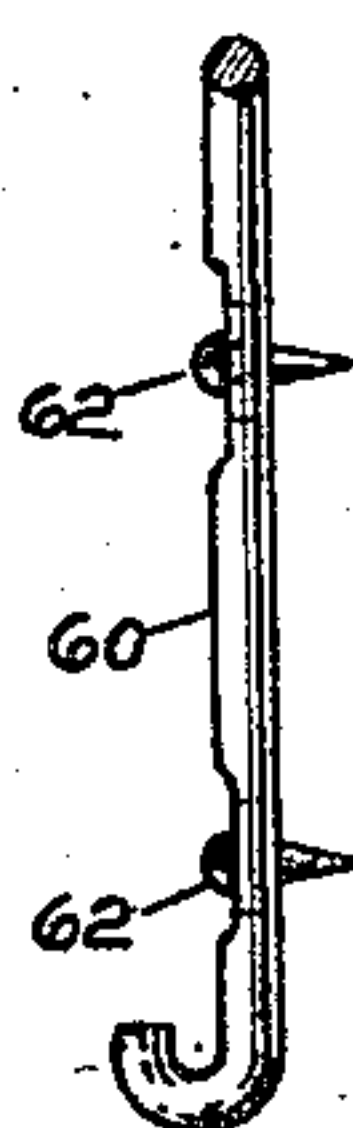


FIG. 10.

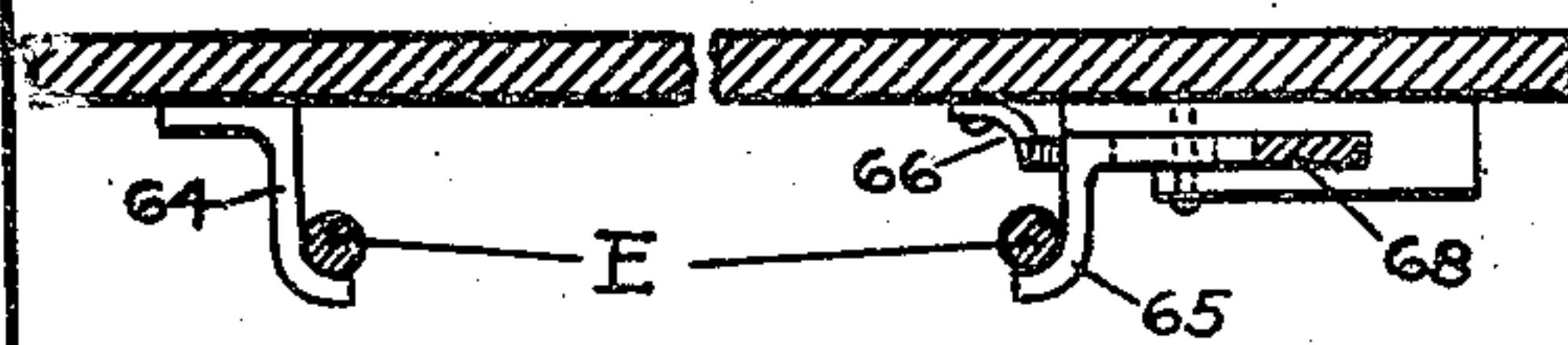


FIG. 11.

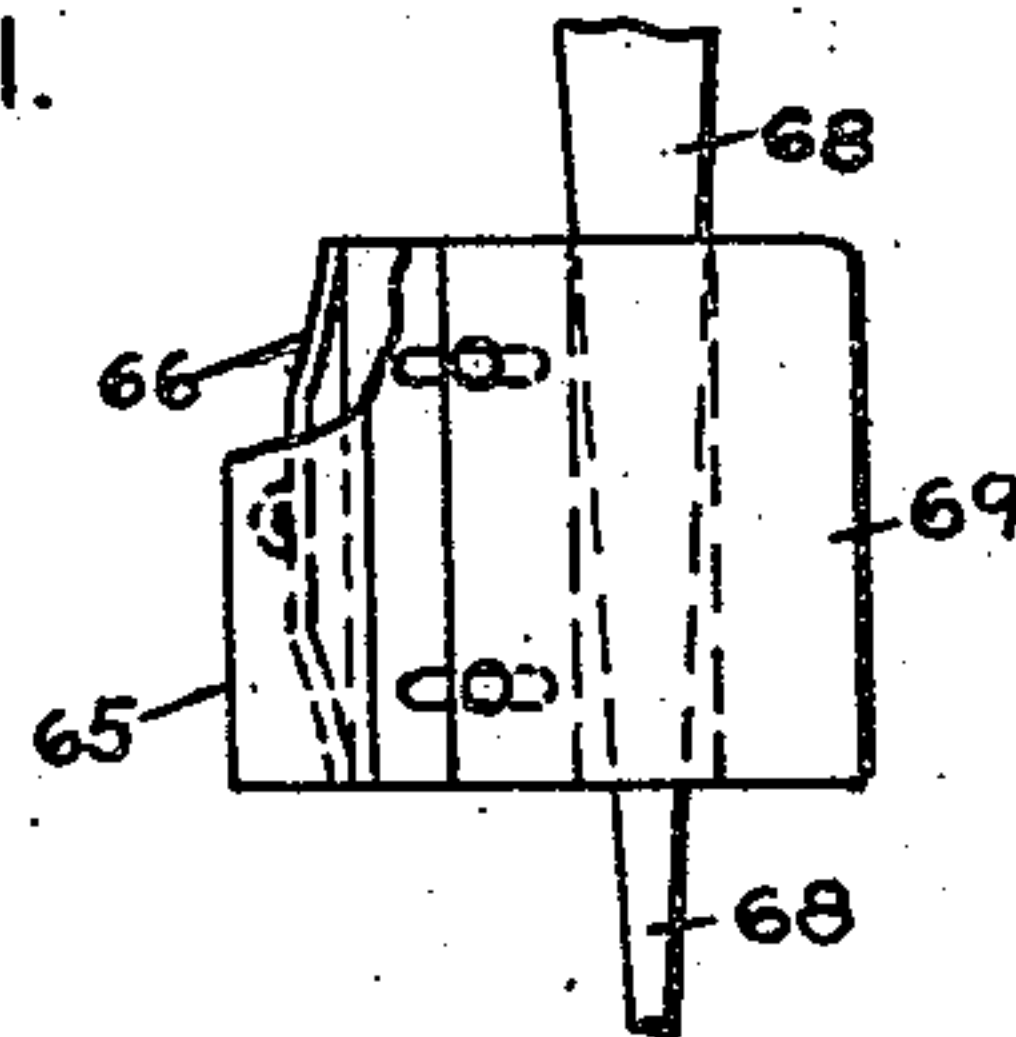


FIG. 12.

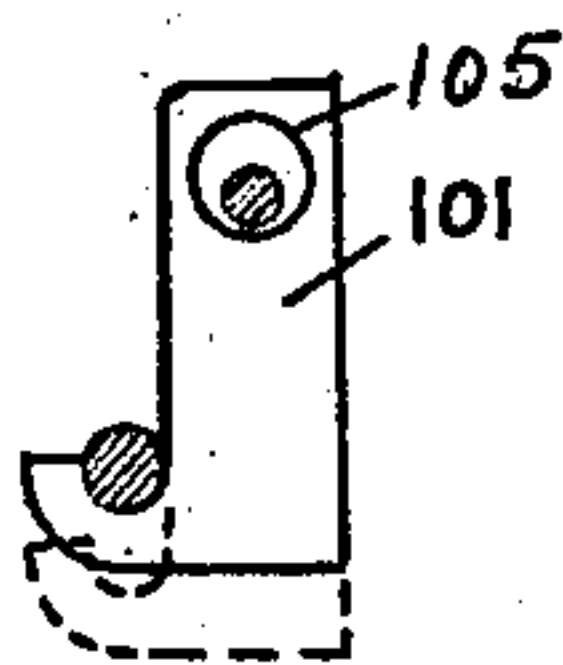


FIG. 13.

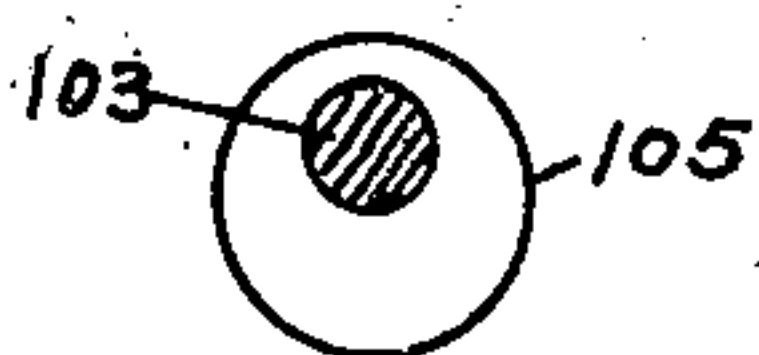


FIG. 14.

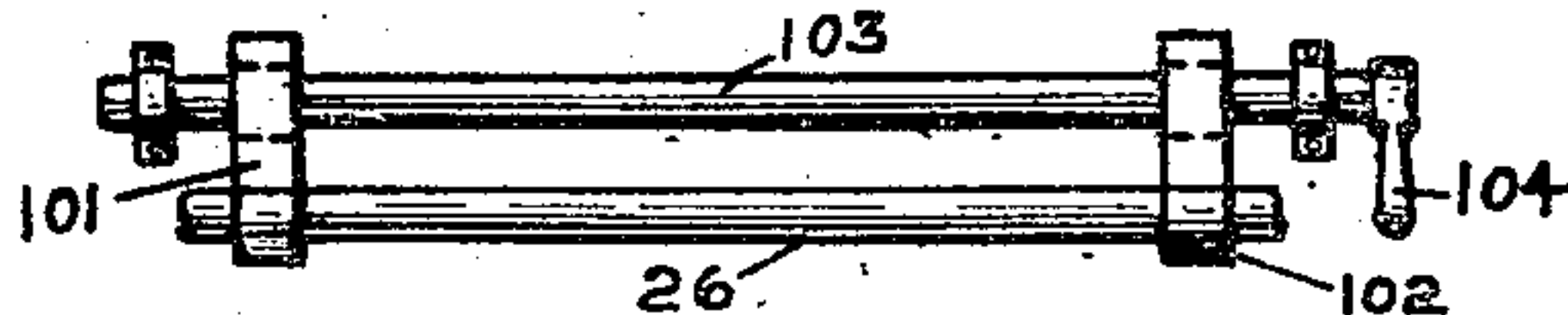


FIG. 15.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD B. PEIRCE, OF LOWELL, MASSACHUSETTS.

WALL-BED.

No. 896,239.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed April 8, 1907. Serial No. 366,996.

To all whom it may concern:

Be it known that I, EDWARD B. PEIRCE, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Wall-Beds, of which the following is a specification.

This invention relates to what are known as wall beds or folding beds of the type wherein the bed is raised from the floor by suitable means and retained against the wall of the room during the day time or whenever it is not in use.

It comprises the additional feature of being so constructed that it can be detached from the wall and moved to any part of the room. With my device, when the bed is raised against the wall, the bedding and bed clothing are not pressed against the wall and are not boxed in, but are exposed to the air of the room whereby they are much better ventilated than in other devices of a similar class.

My device can be used in connection with the wall of an ordinary room or it may be attached to one side of a framework or door pivoted centrally at top and bottom or hinged in the opening of a recess or a closet as will be shown. In the latter case, when the bed is raised against the framework, it may be revolved or swung so as to face the recess or closet wall instead of the wall of the room.

In the drawings, Figure 1 shows a sectional view of the bed detached from the wall and resting wholly upon its own legs, some parts being omitted for clearness. Fig. 2 shows the bed attached to the wall with head board and foot board folded down and the foot legs folded up, preparatory to raising. Fig. 3 shows the bed attached to the wall and in process of being raised. In Figs. 2 and 3, some of the parts are omitted for clearness. Fig. 4 is an end view from the head, the bed being detached. Fig. 5 shows the bed raised and held against the wall. Fig. 6 shows an end view from the foot, the bed being detached. Fig. 7 shows a modified form in which the high head board and foot board are dispensed with. Fig. 8 is a sectional view on the line X Y of Fig. 2. Fig. 9 shows a pivotal framework with the clamp and lifting device attached thereto. Figs. 10, 11, and 12 are detail views of the clamps. Figs. 13, 14 and 15 show another form of clamp.

W is the wall, and U is the floor.

A represents the frame of the bed, B is the

pivoted foot board, and C the pivoted head board.

D, D represent the foot legs and E, E represent the head legs. The head legs E, E are connected and held together at their tops by a strap 11, and each carries a strong bracket 12 which projects at right angles to the legs. To these brackets 12 are pivoted the two curved supporting arms F, each of which comprises a short branch 20 which is long enough to rest underneath strap 11 thereby preventing long branch 21 from dropping below the horizontal. These arms F serve to support the bed while it is being raised or lowered. Each arm F is pivoted to a bracket 12 at 22 and near the end of long branch 21, each carries a pin pivot 25 which is adapted to slide inside the slotted track 24 which is attached one on each side of bed frame A. These slotted tracks 24 may be much shorter than as shown or may be reduced to a mere circular opening flanged to retain the head of pin 25.

At the head end of bed frame A are dogs, 31, 31, which are just far enough from the end of frame A to allow straps 11 to pass between, as shown in Fig. 1. As the slotted tracks 24 are preferably of such length and arms F are preferably somewhat longer than one-half the length of bed frame A, it will be seen that the bed frame A must be moved through the medium of slotted tracks 24 and pins 25 toward head legs E E beyond its center of gravity to allow dogs 31 to pass over strap 11. When this is done, if legs E are held against the wall, they, together with arms F, will support the entire weight of the bed, as shown in Fig. 2. Dogs 31 also hold head legs E in place when the bed is detached. Head legs E are also connected by a cross bar 26. Upon the wall where the bed is to be reared, I place clamps for the purpose of firmly attaching the head legs thereto. These clamps comprise the hooks 60, 60, which are provided with slots 61, through which the pins 62 pass into the wall. Thereby hooks 60 may be slid up or down. The hooks 60 are connected by and are preferably integral with a bar 63. The hooks 60 are of such size as to closely fit around cross bar 26 and when down are arranged at such a height as to just allow bar 26 to pass over them, see Fig. 9.

On the wall at one side of one hook 60 is a fixed jaw 64 and beside the other hook 60 is a

horizontally slidable jaw 65 which is kept normally by spring 66 a distance away from jaw 64 sufficient to permit head legs E to pass between. A lever 67 pivoted to the wall and to bar 63 serves to raise or lower bar 63 and hooks 60. Lever 67 also carries pivotally a wedge 68 which passes behind slidable jaw 65 between said jaw and its casing 69. Lever 67 has a handle 70.

To attach head legs E to the wall, lever handle 70 is raised and the bed is pushed up until cross bar 26 is over hooks 60 and the legs themselves rest between jaws 64 and 65. Lever handle 70 is now pressed down which raises hooks 60 up around cross bar 26, and the same motion by forcing wedge 68 between casing 69 and jaw 65 forces out slidable jaw 65 thus clamping the legs E, E, firmly in place. Preferably hooks 60, 60 are so adjusted that when raised under cross bar 26 they will lift the head legs E a short distance from the ground. Head legs E are thus held firmly at four points against the wall.

The head board C is pivoted to projections 32 from the sides of frame A near one end, the foot board B is pivoted to the projections 33 from frame A near the other end, and the foot legs D are pivoted to projections 34 from the under side of frame A. Foot board B is substantially rectangular with rounded corners and its lower side 50 passes through projections 33. This lower side 50 carries centrally an arm 35. Foot legs D, D are carried by a connecting shaft 39 which carries centrally an arm 38. This arm 38 is so pivotally connected with arm 35 carried by foot board B by a connecting link 36 that when foot board B is folded down, foot legs D, D are folded up as shown. Head board C is substantially rectangular with rounded corners and its lower side 43 passes through projections 32. Lower side 43 of head board C carries an arm 42 which is so pivotally connected by a connecting rod 41 with a second arm 40 carried by connecting shaft 39 that when foot legs D, D are folded up, head board C will be folded down. In this way, head board C, foot legs D, D, and foot board B all work together and when foot board B is folded down, head board C is folded down and foot legs D, D, are folded up. When foot board B is raised, head board C is raised and the foot legs D, D, are dropped. The result of this construction is, that when foot board B is folded down upon the bed clothing K, as shown in Fig. 2, it also folds down upon the bed clothing K, the head board C, and folds up under the bed, the foot legs D, D.

To keep the foot board B and the other parts in place, I use a button 45, pivoted to the foot end of frame A. This button 45 is turned by hand to be in front of arm 35 to keep foot board B upright and it is turned sidewise to allow it to be lowered. Head

board C and foot board B serve to retain the bed clothing K in place when the bed is reared.

I provide a notch 52 in connecting link 36 at such a point that when foot board B is down, button 45 may be turned to enter such notch 52 thereby holding the parts in place in that position. The wheels 53, 53 are loosely mounted on connecting shaft 39 and should be large enough to clear projections 34, 34.

The operation of the device is as follows:— In starting with the bed detached and standing upon its own legs, as shown in Fig. 1, it is first pushed against the wall between the clamps 64 and 65, when the clamps are tightened against the head legs E until they are held firmly in place. Foot board B, carrying with it head board C and foot legs D, is now folded down as shown in Fig. 2 and the parts are locked in place by button 45. The bed is so balanced now that by pressing down lightly on the foot of the bed, dogs 31 are lifted from strap 11, as shown in Fig. 3, until the wheels 53 rest on the floor U. The whole bed is now pushed toward the wall or the head end is raised by hand with the result that a toggle joint action takes place, whereby the head of the bed and arms F are raised. As arms F support and guide the bed, and most of its weight is carried by wheels 53, it can be easily pushed up against the wall as shown in Fig. 5. When it is desired to lower the bed, the reverse procedure is carried out. The bed is lowered by pulling the foot end away from the wall, dogs 31 are hooked over strap 11, and foot board B is raised thereby unfolding legs D. The head and foot boards and foot legs are then locked in place by means of button 45. The bed can be used in this position or it can be detached by merely raising handle 70 of lever 67 when the bed can be rolled to any part of the room. To hold the bed in an upright position against the wall, I have attached to frame A, a hook or hooks 80 which can be hooked into eyes 81 attached to the wall W. For cot beds and other light unpretentious beds, I can dispense with the high head board and foot board and with the devices for holding them down and the foot legs up. I use a low head board 90 and a low foot board 91. I connect these by a rope or strap 92 to hold the bed clothing K in place. In such case, foot legs D only are folded up and are held up by hooks 93. The raising operation is the same as with the kind just described.

Fig. 9 shows the clamps attached to a door R pivoted centrally at top and bottom in an opening in the wall S which is preferably the front of a recess. The operation in this case is the same as before described except that hooks 60 should be so arranged as to lift head legs E clear of the floor to make it easier to

swing the whole device around until the bed is in the recess.

In Figs. 13, 14 and 15, I show another form of clamp which comprises vertical jaws 101, 102 which are operated by an eccentric 105 mounted on shaft 103, whereby, when shaft 103 is half rotated by handle 104, jaws 101 and 102 are raised under cross bar 26 thereby clamping it and with it, the head legs E to the wall.

The principal features of my device, are the head legs with means for attaching them to the wall, the brackets carried by the head legs and the supporting arms pivoted thereto and to the sides of the bed, together with the folding foot legs and wheels, whereby the toggle joint action is made possible and the bed may be raised with slight expenditure of strength. It is apparent that the head legs may be permanently attached to the wall, thus making a non-detachable bed. It will also be seen that in such case, the legs serve no purpose as legs, and brackets 12 may be directly attached to the wall, omitting the legs entirely, and connecting the brackets by strap 11. If the parts are made strong enough, it is clear that as shown in Fig. 2, the foot legs may be omitted. The wheels 53, 53 may be omitted, but I prefer to use them to avoid unnecessary wear on the floor.

What I claim as my invention and desire to cover by Letters Patent is:—

1. A bed frame, head legs, a strap which connects the head legs, brackets carried by the head legs, supporting arms pivoted to the brackets and to the sides of the bed frame, dogs attached to the bed frame and passed over said strap, and foot legs as described.

2. A bed frame, connected head legs, means for attaching the head legs to the wall, supporting arms pivoted to the head legs and to the bed frame, and folding foot legs pivoted to the bed frame, combined with a folding head board, a folding foot board, and means for operating the foot board, head board, and foot legs together.

3. A bed frame, connected head legs, means for attaching the head legs to the wall, supporting arms pivoted to the head legs and to the bed frame, folding foot legs pivoted to the bed frame, and wheels mounted at the bottom of the foot of the bed frame.

4. A bed frame, connected head legs, means for attaching the head legs to the wall, supporting arms pivoted to the head legs and to the bed frame, means for detachably fastening the head of the bed frame to the head legs, and folding foot legs pivoted to the bed frame.

5. A bed frame, head legs, a strap which connects the head legs, brackets carried by the head legs, supporting arms pivoted to the brackets and slidably pivoted in slotted tracks on the sides of the bed frame, dogs at-

tached to the bed frame and passed over said strap, and foot legs as described.

6. In a folding bed, a pivoted foot board, an arm carried thereby, pivoted foot legs, an arm carried thereby, and a connecting link between said arms, combined with a pivoted head board, an arm carried thereby, a second arm carried by the foot legs, and a rod pivotally connecting the arm on the head board and the second arm on the foot legs.

7. In a folding bed, a pivoted foot board, an arm carried thereby, pivoted foot legs, an arm carried thereby, and a connecting link between said arms, and a notch therein, combined with a pivoted head board, an arm carried thereby, a second arm carried by the foot legs, and a rod pivotally connecting the arm on the head board and the second arm on the foot legs, and a button pivoted to the foot of the bed frame adapted to be moved behind the arm on the foot board or into the notch in the connecting link as desired.

8. In a wall bed, a bed frame, head legs pivoted thereto and connected by a cross bar and means for raising the bed against the wall, combined with hooks so attached to the wall as to slide vertically thereon, and means for raising the hooks about the cross bar.

9. In a wall bed, a bed frame, head legs pivoted thereto and connected by a cross bar and means for raising the bed against the wall, combined with hooks so attached to the wall as to slide vertically thereon, a rod connecting said hooks, a fixed clamp, a horizontally slidable clamp, a spring in front thereof, a lever pivoted to the wall and to the connecting rod, and a wedge pivotally connected to the lever and passed behind the slidable clamp.

10. A wall bed comprising a framework pivoted in an opening in the wall, combined with a bed frame, head legs, a strap which connects the head legs, brackets carried by the head legs, supporting arms pivoted to the brackets and to the sides of the bed frame, dogs attached to the bed frame and passed over said strap, means for detachably attaching the head legs to the wall, and foot legs as described.

11. A bed frame, head legs, a strap which connects the head legs, brackets carried by the head legs, supporting arms pivoted to the brackets each comprising a short arm adapted to extend under the strap and a long arm which carries a pin pivoted to the side of the bed frame, dogs attached to the bed frame and passed over said strap, and folding foot legs as described.

12. In a wall bed an opening in the wall, a framework pivoted in the opening, and clamps attached to the framework, combined with a bed frame, head legs detachably held by the clamps, a strap which connects the head legs, brackets carried by the head legs, supporting arms pivoted to the brack-

ets and each comprising a short arm which extends under the strap and a long arm which carries a pin pivoted on the side of the bed frame in a slotted track therein, a folding foot board, a folding head board, folding foot legs, and means for folding and unfolding the head board and foot board and foot legs together, wheels carried on the under side at the foot of the bed frame, and hooks carried by the bed frame fitted into eyes on the framework as described.

13. A bed frame, slotted tracks in each side thereof, head legs, a strap connecting the head legs, dogs attached to the bed frame and fitted over the strap, means for detach-

ably attaching the head legs to the wall, brackets carried by the head legs, supporting arms pivoted to the brackets and each comprising a short arm which extends under the strap and a long arm, a pin carried by each long arm each slidably resting in a track in the bed frame, pivoted foot legs, and wheels mounted under the foot end of the bed frame.

In testimony whereof I hereby affix my signature in presence of two witnesses.

EDWARD B. PEIRCE.

Witnesses:

FLORENCE A. PARR,

MARY V. ALLEN.