

No. 622,317.

Patented Apr. 4, 1899.

L. ZUCKER.
INVALID BEDSTEAD.

(Application filed Apr. 30, 1898.)

(No Model.)

3 Sheets—Sheet 1.

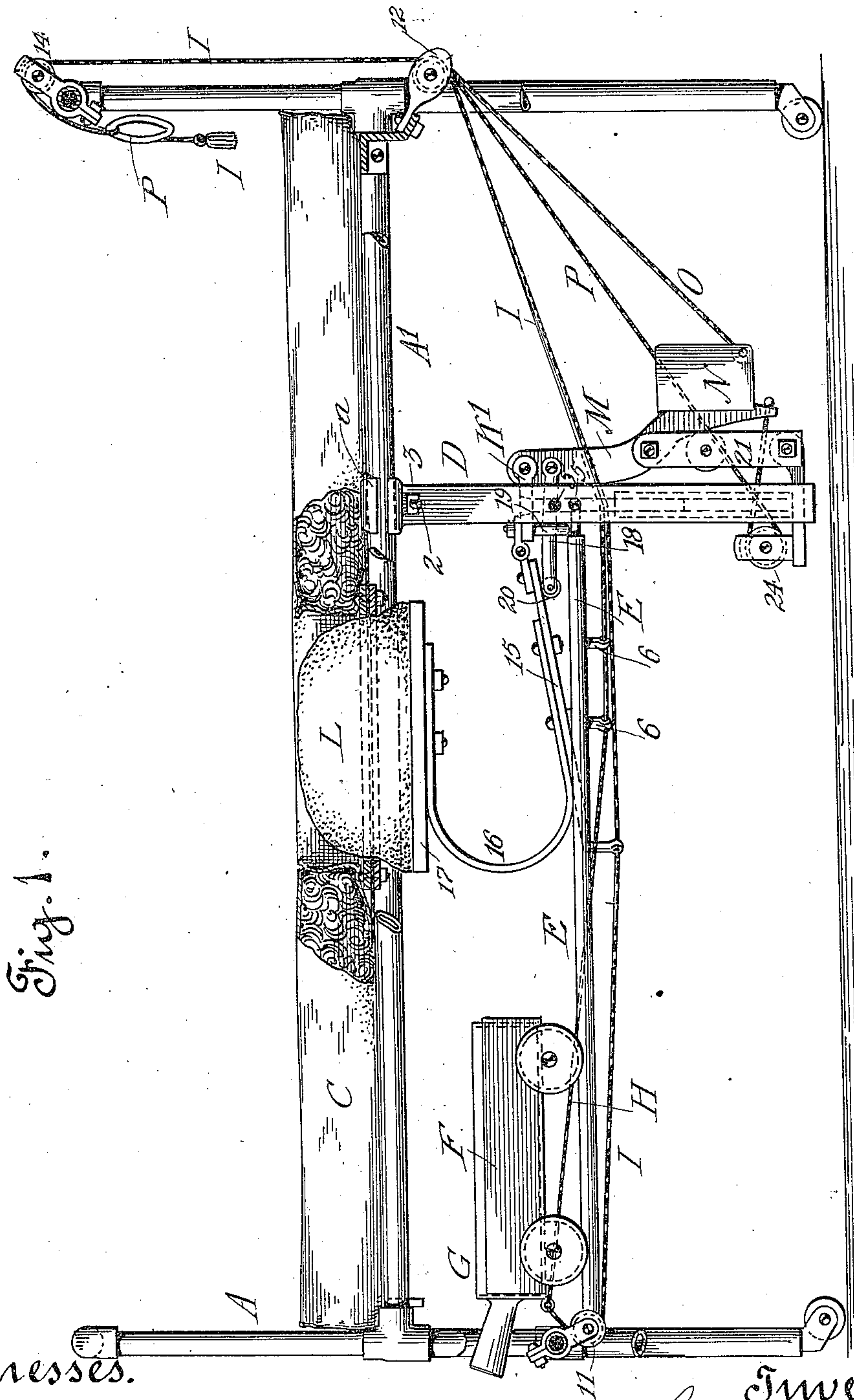


Fig. 1.

Witnesses.

H. H. Monteverde
H. J. Rice

Inventor.

Louis Zucker
by Spear & Seely
Moneys

No. 622,317.

Patented Apr. 4, 1899.

L. ZUCKER.
INVALID BEDSTEAD.

(Application filed Apr. 30, 1898.)

(No Model.)

3 Sheets—Sheet 2.

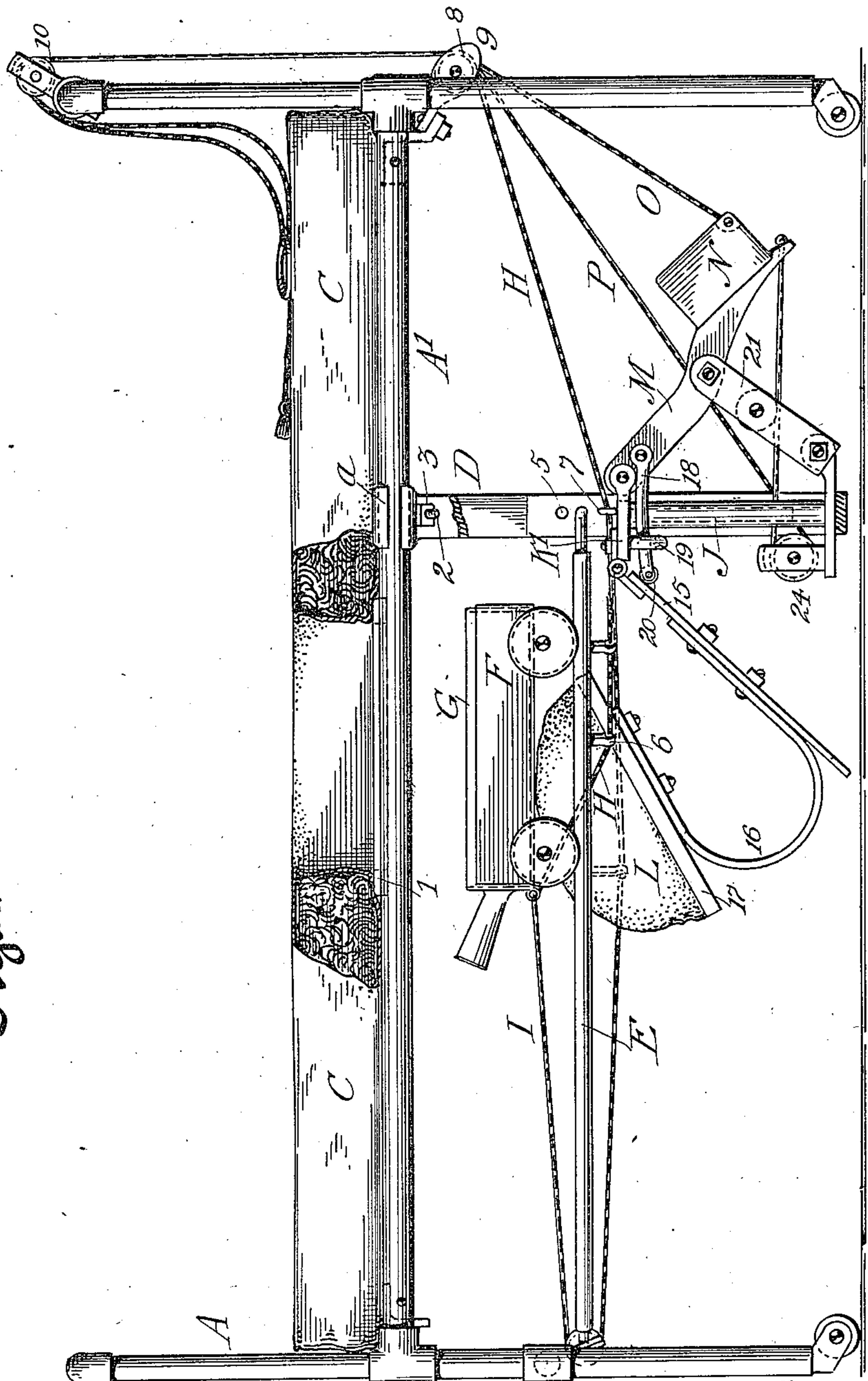


Fig. 2.

Witnesses.

H. Marten
M. J. P.

Inventor.

Louis Zucker
by Spear Seely
Attorneys

No. 622,317.

Patented Apr. 4, 1899.

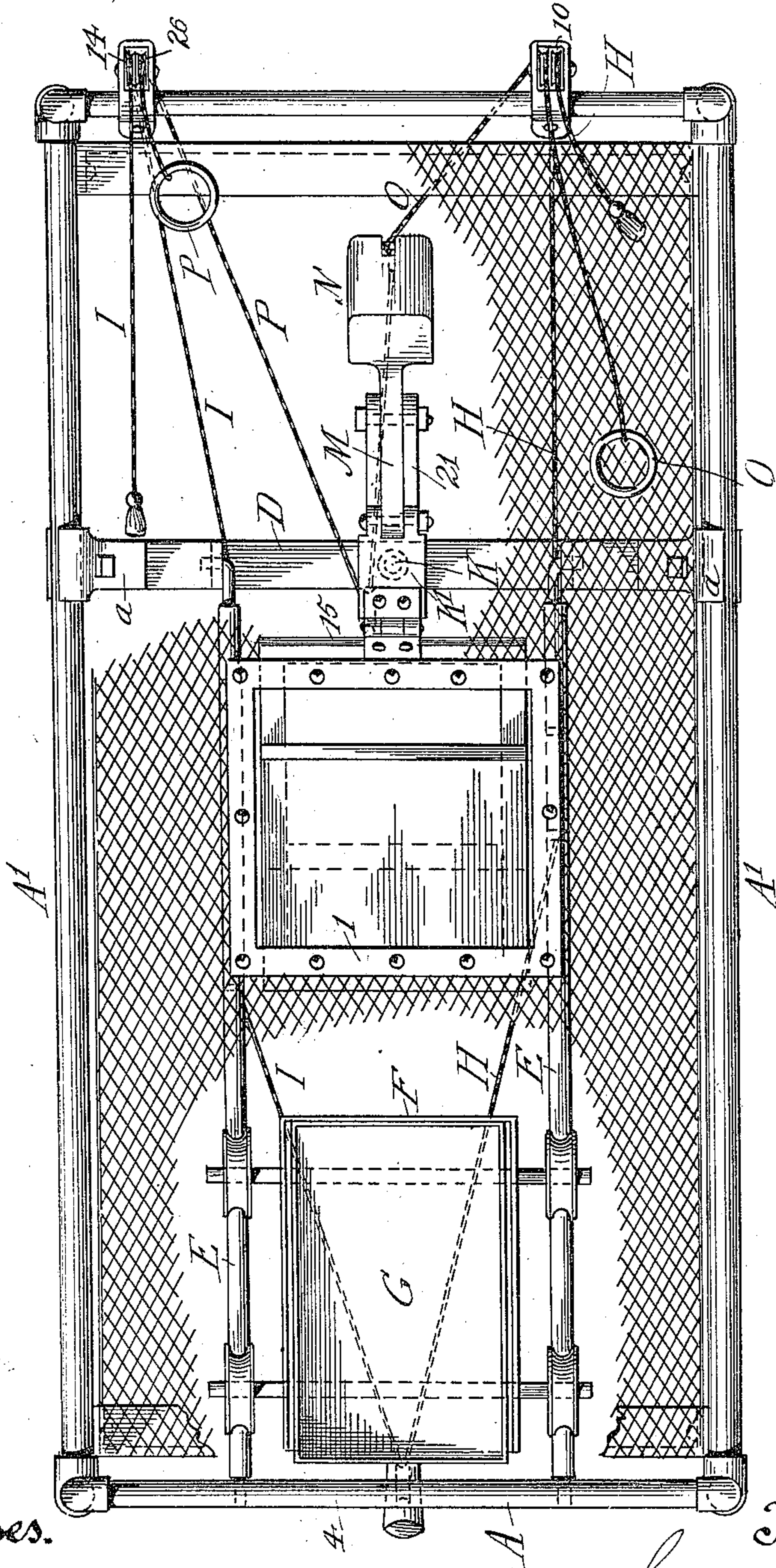
L. ZUCKER.
INVALID BEDSTEAD.

(Application filed Apr. 30, 1898.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 3.



Witnesses.

H. J. Lick
H. J. Lick

Inventor.

Louis Zucker
by Spear Seely
Attorneys

UNITED STATES PATENT OFFICE.

LOUIS ZUCKER, OF OAKLAND, CALIFORNIA, ASSIGNOR OF THREE-FOURTHS
TO MAURICE ZUCKER, OF SAME PLACE

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 622,317, dated April 4, 1899.

Application filed April 30, 1898. Serial No. 679,352. (No model.)

To all whom it may concern:

Be it known that I, LOUIS ZUCKER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Invalid-Bedsteads, of which the following is a specification.

My invention relates to beds for the use of invalids in sick-rooms, hospitals, &c., the object of which is to enable certain bodily functions to be performed by the patient without the assistance usually demanded of nurses and attendants.

It comprises an apparatus attached to the bed and capable of being operated by the patient for placing a bed-pan or other vessel in proper position beneath the bed and for removing it from such position. This apparatus comprises two parts or sets of mechanical devices, one for moving the pan or vessel and the other for moving and replacing a section of the bed, so as to provide and then close an opening in the bed. Provision is also made for the easy operation of these devices, so that a very slight exertion of the patient is required.

I have embodied my invention in drawings accompanying this specification, in which—

Figure 1 is a side elevation of the bed in normal position, broken away in parts to show the mechanism more clearly. Fig. 2 is a similar view, but showing a section of the bed lowered, forming an opening, and the car which carries the pan or vessel beneath such opening. Fig. 3 is a plan view.

A represents a bedstead, here shown as of the common iron kind frequently used in hospitals and provided with the wire bottom B and mattress C. A hole is made at the proper place in the wire bottom, which is bound by a frame or strips 1, and a coinciding hole is formed in the mattress by removing a section of an ordinary mattress or by making it originally with such an opening. The operating apparatus is supported by a frame D, suspended from the side bars A' of the bedstead and extending downwardly toward the floor. The frame is attached removably and held rigidly by the clamps a, which are shaped to the side rod and are held by bolts 2 and nuts 3. It is my intention to make all the parts

of my apparatus attachable to and removable from an ordinary hospital-bed without requiring any change or reconstruction of the latter. From the frame D a pair of rails E extend to the foot of the bed, where they are attached to a cross-piece 4 of the bedstead. The other ends of the rails are turned at right angles and enter holes 5 in the frame D, there being two or more of these holes provided, so that the rails can be set horizontally or at a slight angle, if preferred. Upon these rails is set a car F, having its end open toward the foot of the bed and adapted to receive a bed-pan G or any other form of vessel. To the end of this car are secured two cords H and I. The cord H passes through guides 6 on one of the rails, a guide 7 on the frame D, and under a pulley 8, journaled in a block 9, hung from the head of the bed. Thence it extends over a guide-pulley 10 at the top of the head of the bed and hangs down within reach of the occupant of the bed. The cord I extends around a pulley 11 at the foot of the bed, and is thence guided in the same manner as the cord H in through a block 12 and over a pulley 14 on the head of the bed, from which it hangs within reach of the occupant. The car travels on wheels and is moved in one direction by pulling upon the cord H and in the other by pulling the cord I. The bedstead being open at the foot the bed-pan is easily removed from the car by an attendant. A tube J rises from the frame D, which forms a guide for a vertically-movable rod K, carrying a cross-head K'. To one edge of this cross-head is hinged a plate 15, on which are secured the bow-springs 16. Upon the free ends of these springs is mounted a platform 17, which supports the mattress-section L, the latter being adapted to enter the hole in the main mattress and complete the bed, as shown in Fig. 1, the bow-springs giving the requisite yielding effect to the mattress-section to insure the comfort of the invalid. The hinged plate 15 is normally prevented from giving downwardly by a movable stop-arm 18, which is hinged to the arm M of the counterbalance-weight N and slides in a guide 19 beneath the cross-head K'. The end of this stop is preferably provided with a rubber or soft-faced roller 20 to bear upon the plate 15.

The counterbalance-arm M is hinged to the cross-head K' at its opposite edge and has hinged to it one end of the link 21, the other end of which is hinged to the frame D. It will thus be seen that the arm M and link 21 form together a toggle-joint and that the weight N exerts a tendency to straighten this joint and bring the parts into the position shown in Fig. 1, with the rod K and cross-head K' in an elevated position. The peculiar connections just described enable the weight N to act always as a counterbalance to the mattress-section, whether in the position of Fig. 1 or that of Fig. 2. In the position of Fig. 1 the weight of the mattress-section is overcome by a dead-line of resistance through the arm M and link 21, which prevents cross-head K' from being lowered until by a slight pull on the counterbalance toward the head of the bed the line of resistance is broken; Fig. 2, and the weight of the cross-head, mattress-section, rod K, &c., added to the slight initial pull, will overcome the counterbalance, making it an easy matter to cause the parts to assume the position of Fig. 2. The initial pull is given by the patient to a cord O, which extends from the weight. It is guided by a pulley in the block 9 and another on the head of the bed within reach of the patient. Conversely, a cord P, extending from the weight and guided by pulleys 24 and 26, may also be pulled to restore the parts to position, such pull, added to the tendency of the weight to lift the cross-head and its supported parts, requiring a very slight exertion. As soon as the weight N moves outward, breaking the dead-line, it will be observed that the rod K and cross-head will begin to lower, thus lowering the mattress-section vertically at first; but as in the continued downward movement the arm M swings outward the stop-arm 18 is withdrawn, permitting the mattress-section to have a downward-swinging motion in addition to its vertical movement derived from the vertical movement of the rod and cross-head.

In operating the apparatus the patient first pulls the cord O, when the mattress-section descends, leaving an opening in the bed. He then pulls the cord H, causing the car, with its pan, to run easily along the tracks and stop under the opening. A pull on the cord I restores the car to its former position at the foot of the bed, and finally a pull on the cord P restores the mattress-section to its normal position. The control of the apparatus can thus be placed entirely in the hands of the patient if his condition is such as to warrant it, and this in many cases relieves the nurse and attend-

ants of disagreeable duties which they are frequently called upon to perform. At the same time the comfort of the patient is promoted, since he need not change his position or be lifted or moved, as is now generally necessary.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a bed having an opening, of a pair of rails, a car traveling thereon and adapted to support a bed-pan, means for moving said car upon the rails beneath and away from said opening, a counterbalanced mattress-section arranged to lower between said rails, and means for lowering the same and raising it again into place.

2. In combination with a bed a vertically-movable rod, a mattress-section pivotally supported thereby, and a counterbalance also pivotally supported upon said rod and arranged to balance the mattress-section.

3. The combination with a bed, of a frame secured thereto, a vertically-movable rod guided in said frame, and carrying a cross-head, a counterbalance pivoted to one side of the cross-head, a mattress-section pivoted to the opposite side of the cross-head and cords for moving said cross-head in both directions.

4. The combination with a bed, of a frame secured thereto, a vertically-movable rod guided in said frame, and carrying a cross-head, an arm pivoted to the cross-head and carrying a weight, a link connecting the arm to the said frame, a mattress-section hinged oppositely to said cross-head, and cords for moving the said arm and weight in opposite directions.

5. In an invalid-bed and in combination, the vertically-movable rod and cross-head, the counterbalance-arm pivoted thereto and having a stop-rod and the hinged mattress-section normally supported by said stop-rod.

6. In combination with a bed, a vertically-movable rod, a mattress-section supported thereby, a counterbalance hinged thereto and balancing the mattress-section, rails extending longitudinally beneath the bed, a car traveling upon said rails, separate cords for moving the car in opposite directions, and separate cords for moving the counterbalance in opposite directions.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 13th day of April, 1898.

LOUIS ZUCKER.

Witnesses:

L. W. SEELY,
H. J. LANG.