

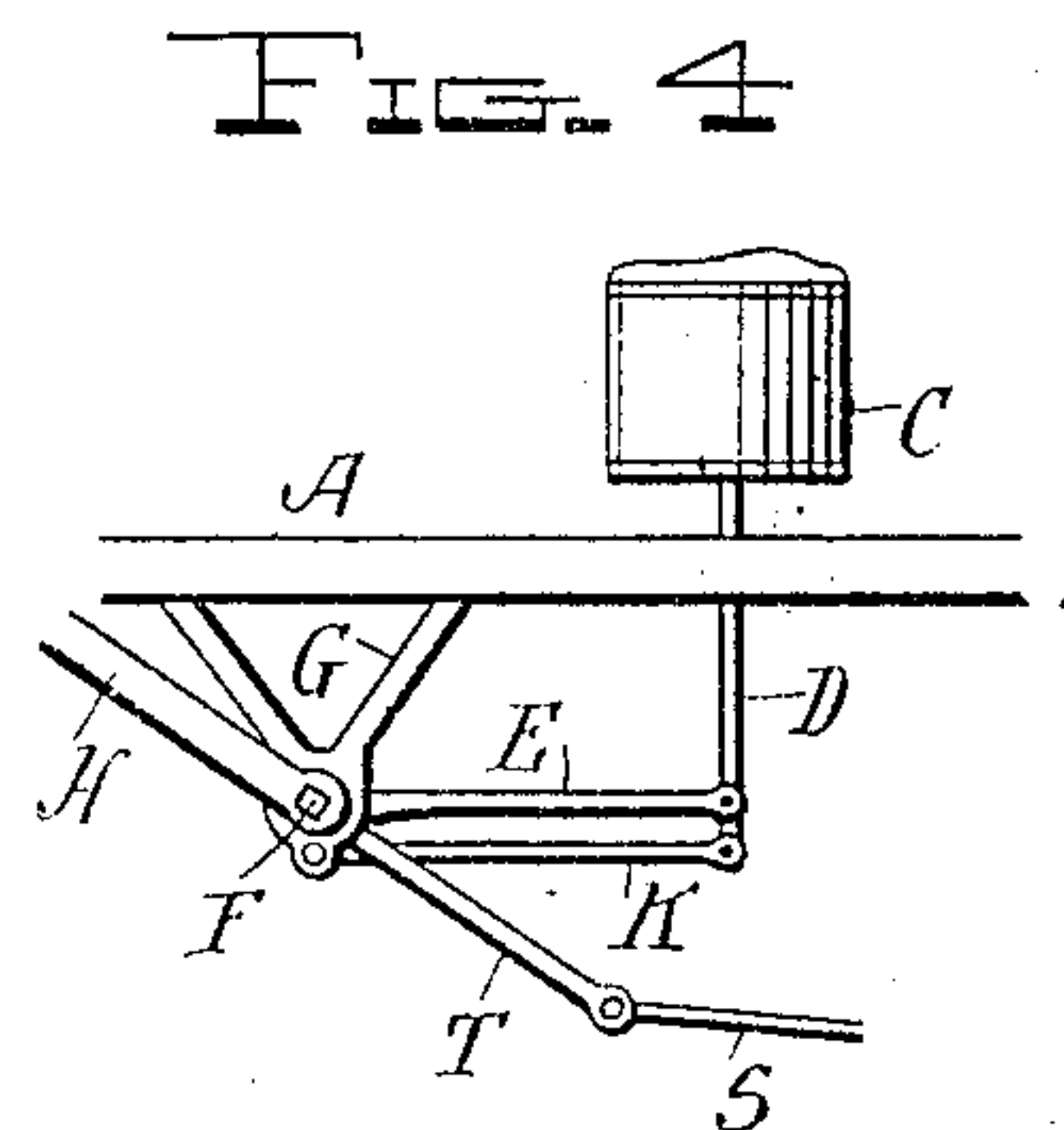
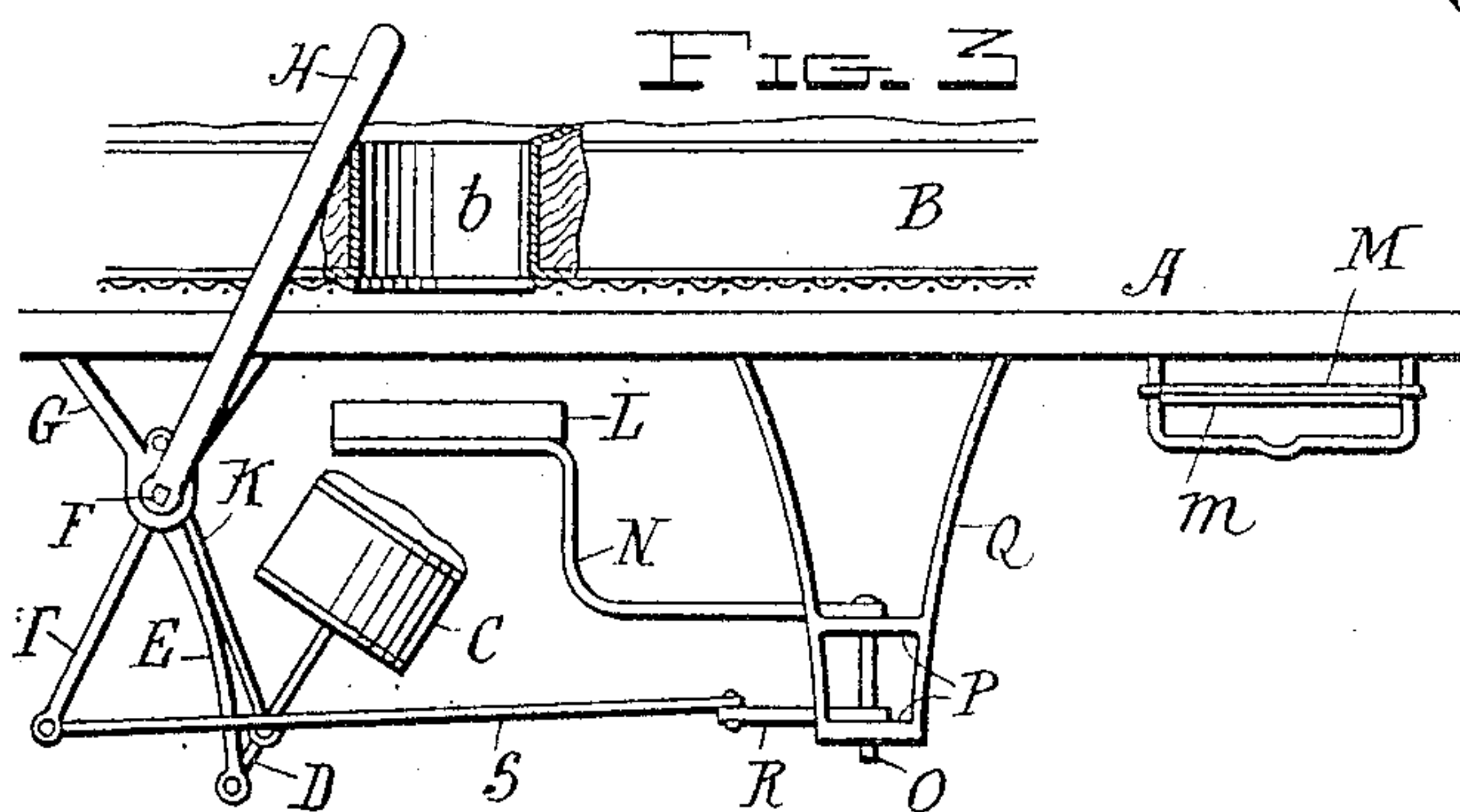
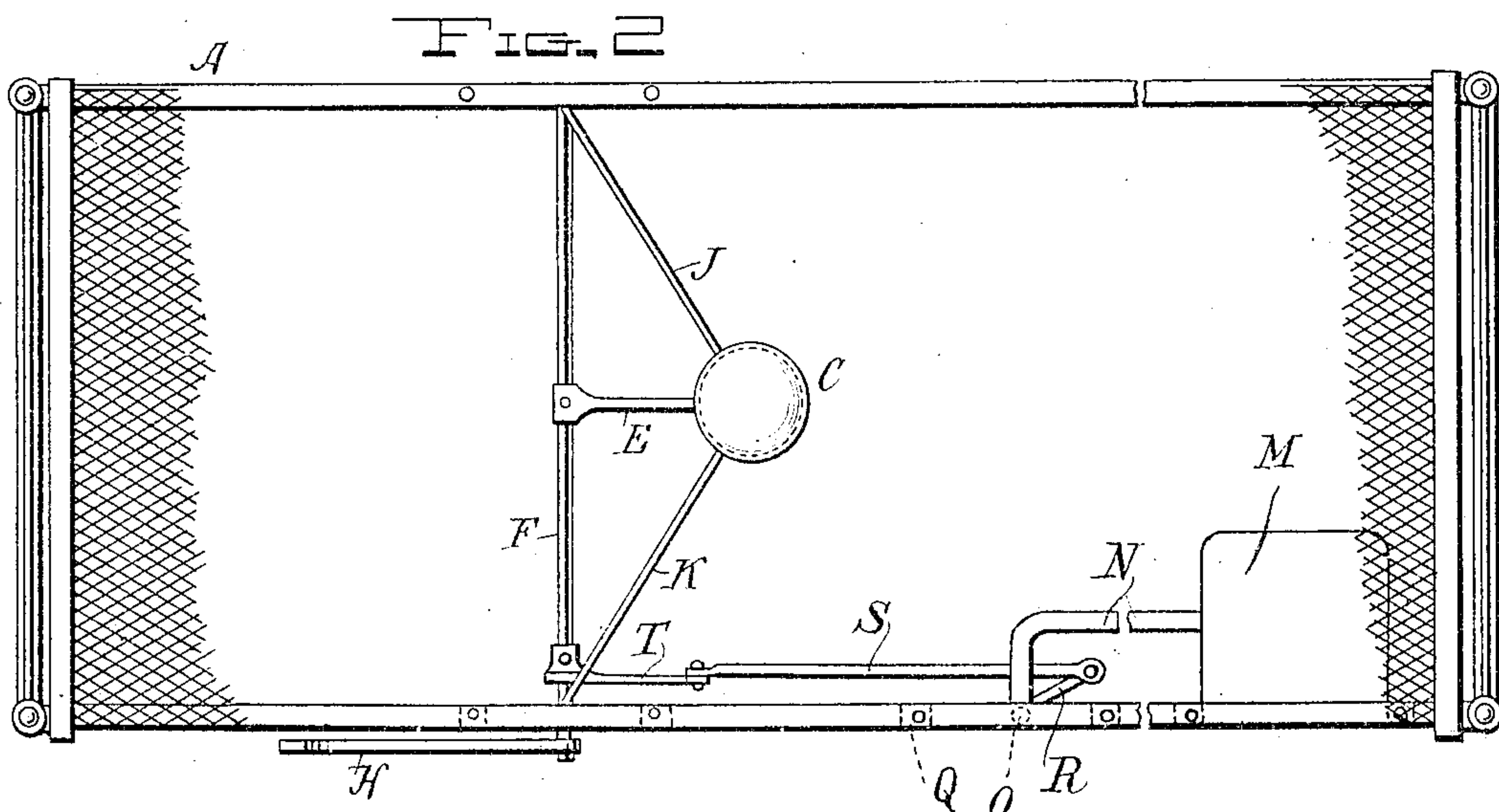
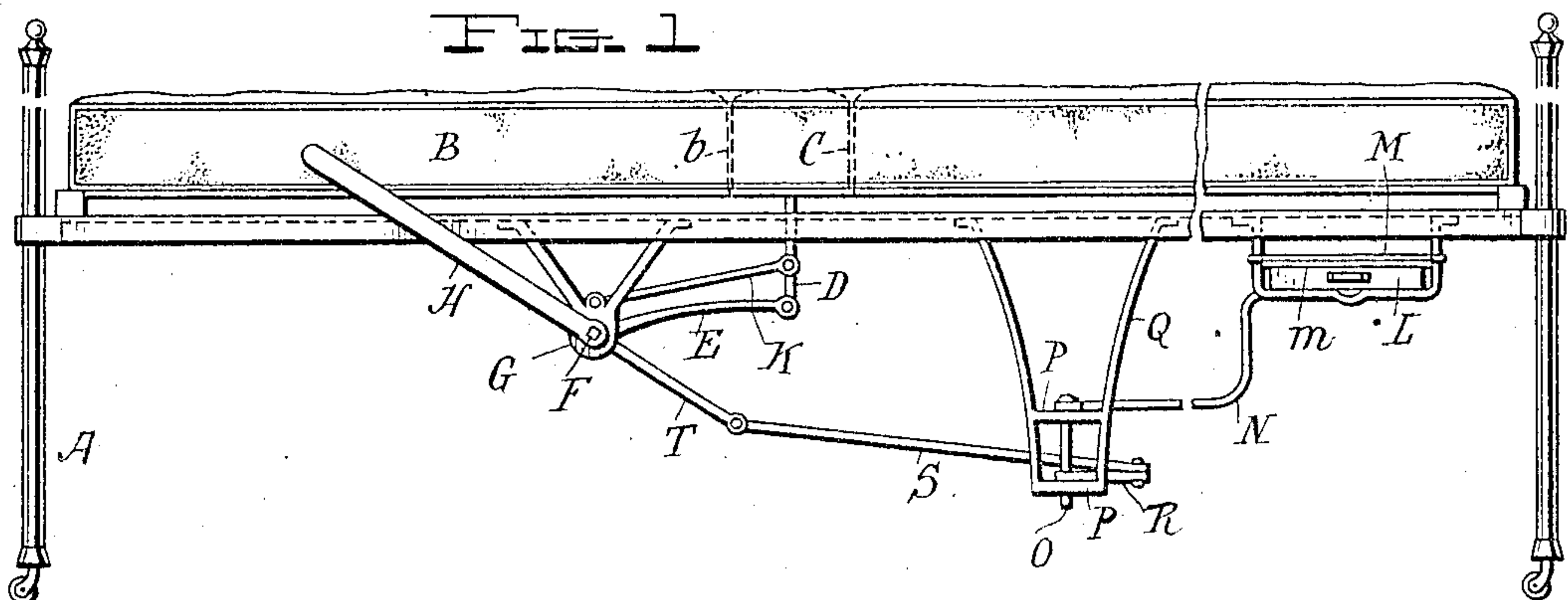
No. 869,344.

PATENTED OCT. 29, 1907.

J. D. BIRMINGHAM.

INVALID BED.

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INVALID-BED.

No. 869,344.

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To all whom it may concern:

Be it known that I, JOHN D. BIRMINGHAM, a citizen of the United States, residing at Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have
5 invented certain new and useful Improvements in Invalid-Beds, of which the following is a specification.

My invention relates to invalid beds, and belongs to that type wherein the mattress and such of the bed clothing as is arranged beneath the sick person are
10 formed with apertures normally occupied by a removable pad or plug, in order that a suitable bed pan may be placed beneath the aperture.

In certain of such invalid beds with which I am acquainted, various mechanisms have been introduced
15 for removing the bed pad, and for placing the bed pan beneath the aperture, and for restoring both the pad and pan to their original positions. With beds of that special character my invention may be immediately classified.

The object of my invention is the production of mechanical parts and devices having particular construction and arrangement by which it is believed the succession of operations of removing the pad, placing the pan, and finally restoring both to their first positions
20 as stated may be most easily effected, and the construction of the bed rendered less costly by reason of the simplicity of the mechanism.

The particular construction and arrangement of parts constituting my invention is set out in the accompanying drawings, of which
30

Figure 1 represents a side view of my invention with the pad and pan in their regular positions. Fig. 2 is a top plan view with the mattress removed to disclose the mechanism beneath arranged as in Fig. 1. Fig. 3 is a
35 side view with the pad lowered and the pan arranged under the aperture, and Fig. 4 is a side view of a modified form in which the guide rod is below instead of above the pad-supporting arm.

In the drawings and description, like letters refer
40 to the same parts.

The drawings disclose a bed A, having a mattress B provided with a suitable aperture *b*. Occupying the aperture is a bed pad C, provided beneath with a vertical stem D, pivotally secured to the swinging end of a
45 spring arm E. The remaining end of the arm E is rigidly secured to the main or operating shaft F, transversely disposed with respect to the bed, and adapted to be rocked in brackets G constructed with bearings for the shaft. The shaft is rocked by any convenient
50 lever H, and when so rocked it is thought to be now apparent that the pad will be drawn downwardly from its position in the aperture *b*. By reason of the pivotal connection of the stem D of the pad, and the arm E, the pad would now fall, were it not for the guide rods
55 J and K. The guide rods are each pivotally connected at one end with the brackets G, and the outer ends of

the rods are secured pivotally to the stem D of the bed pad. It is not material whether the guide rods are secured above the spring arm E as in Fig. 1, or below it as in Fig. 4, the action being precisely the same in both
60 arrangements. The office of the guide rods is to guide the pad, particularly, in the restoring movement into the aperture *b*. Extending as the rods do from the side and meeting at the stem D, it is thought to be shown that no movement sidewise or lengthwise with respect
65 to the bed is permitted the stem and pad. The pad is guided always positively and accurately into the aperture.

In addition to the pad, I construct a bed pan L. Normally, the pan is situated at the side of the bed,
70 and is closed by a lid or cover M attached to the bed and provided on its under side with a layer of felt *m*, that may be readily and cheaply renewed, and which is in contact with the rim of the pan and effectively closes it against the escape of odors.
75

Bed pan L is directly supported by the laterally swinging arm N, which is secured to the upper end of a short, vertical shaft O, held movably in bearings P, forming part of the dependent bracket or hanger Q, attached to the bed frame. The shaft O has a crank arm
80 R, pivotally connected with the rod S. The other end of the rod S is pivotally connected with the crank arm T that is rigidly secured to the main transverse or operating shaft F.

The operation of my invention is effected by means
85 of the lever H on the main shaft, by moving which, as may be readily discerned from the drawings, the pad is lowered thus withdrawing it from the aperture *b*, and, the pan is at the same time carried from the side of the bed into a position directly beneath the aperture. The
90 parts are so constructed that no interference takes place, and they are restored to first positions by a contrary movement of the lever. The pan slides under the cover M in contact with the yielding felt *m* and is thereby tightly closed.
95

Arm E, hereinabove, has been termed a spring arm. While the necessary quality of elasticity may be gained by making the arm of spring material, other constructions might be substituted, when it is considered that one office of the spring arm is to hold the pad in the
100 aperture yieldingly beneath the patient.

Having now described my invention, and explained the mode of its operation, what I claim is—

1. In an invalid bed, the combination with a main shaft, of a bed pad having a downwardly projecting stem,
105 an arm rigidly secured to the said shaft and pivotally secured to the said stem, guide rods each having one end pivotally secured to the bed, the said guide rods being convergently arranged towards the said stem of the bed pad and pivotally connected with the said stem at a point separated from the point of connection of the said arm and stem whereby the said bed pad is guided in an up and down movement, substantially as described.

2. In an invalid bed, the combination with a main

shaft, of a bed pad having a downwardly projecting stem,
an elastic arm rigidly secured to the said shaft and
pivotally secured to the said stem, guide rods each
having one end pivotally secured to the bed, the said guide
5 rods being convergently arranged towards the said stem
of the bed pad and pivotally connected with the said
stem at a point separated from the point of connection
of the said arm and stem whereby the said bed pad is
guided in an up and down movement, substantially as
10 described.

3. In an invalid bed, the combination with a main
shaft, of an arm secured to the shaft, a bed pad pivotally
connected with the said arm, guiding means connected
with the bed and with the said pad and swinging cor-
15 respondingly with said arm whereby the said pad is guided
in an up and down movement, a bed pan, and means
actuated by the operation of said main shaft whereby the
said bed pan is moved into a predetermined position be-
neath the bed and restored to its original position, sub-
20 stantially as described.

4. In an invalid bed, the combination with a main
shaft, of a bed pad having a downwardly projecting stem,
an arm rigidly secured to the said shaft and pivotally
secured to the said stem, guide rods each having one end
pivotally secured to the bed, the said guide rods being 25
convergently arranged towards the said stem of the bed
pad and pivotally connected with the said stem at a
point separated from the point of connection of the said
arm and stem, a bed pan, and means actuated by the
operation of the main shaft and constructed and arranged 30
to move the said bed pan into a predetermined position
beneath the bed and to restore the said pan to its original
position, substantially as described.

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

JOHN D. BIRMINGHAM.

Witnesses:

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H. F. GEDDES.