

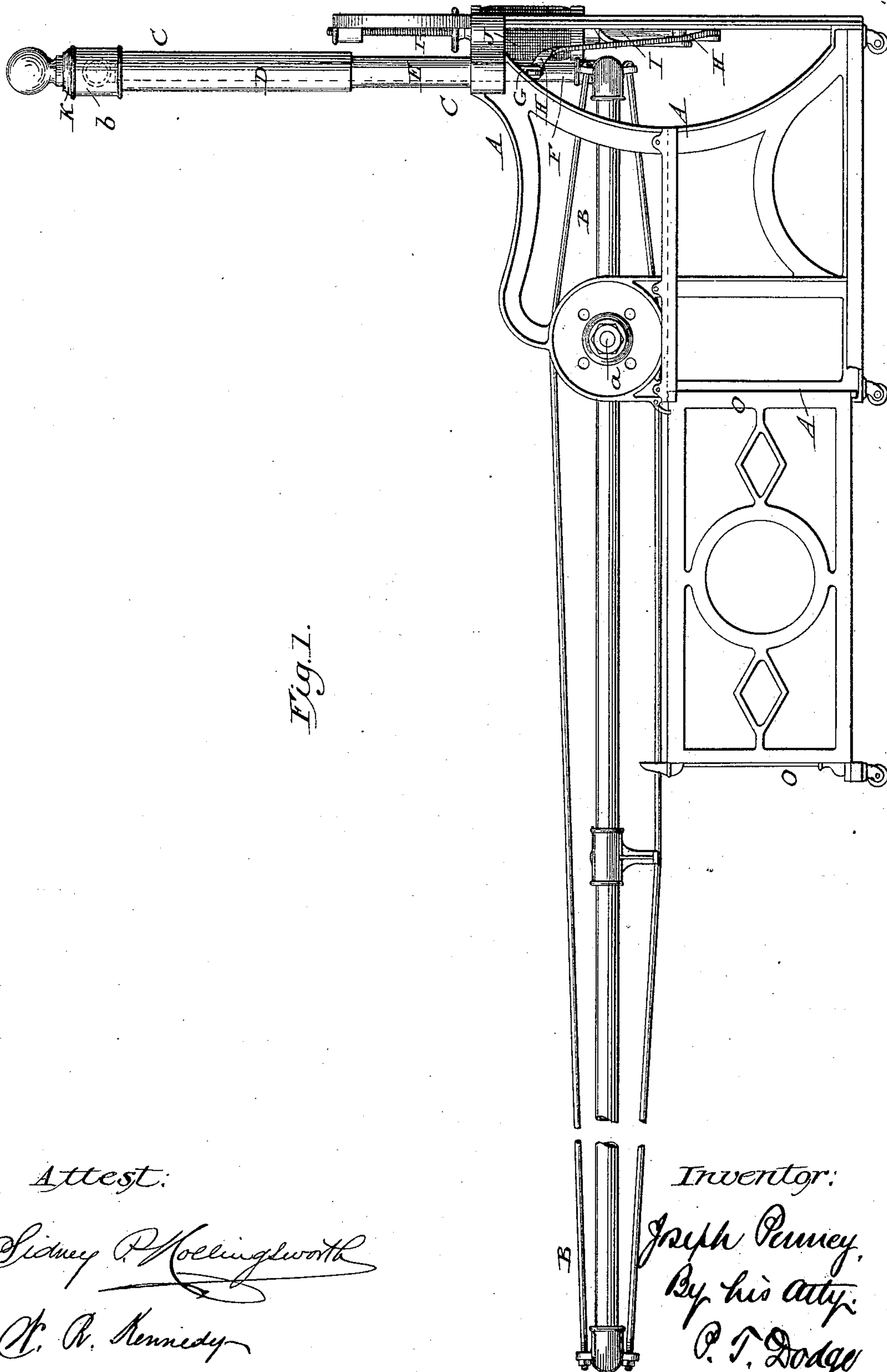
(No Model.)

2 Sheets—Sheet 1.

J. PENNEY.
FOLDING BED.

No. 397,308.

Patented Feb. 5, 1889.



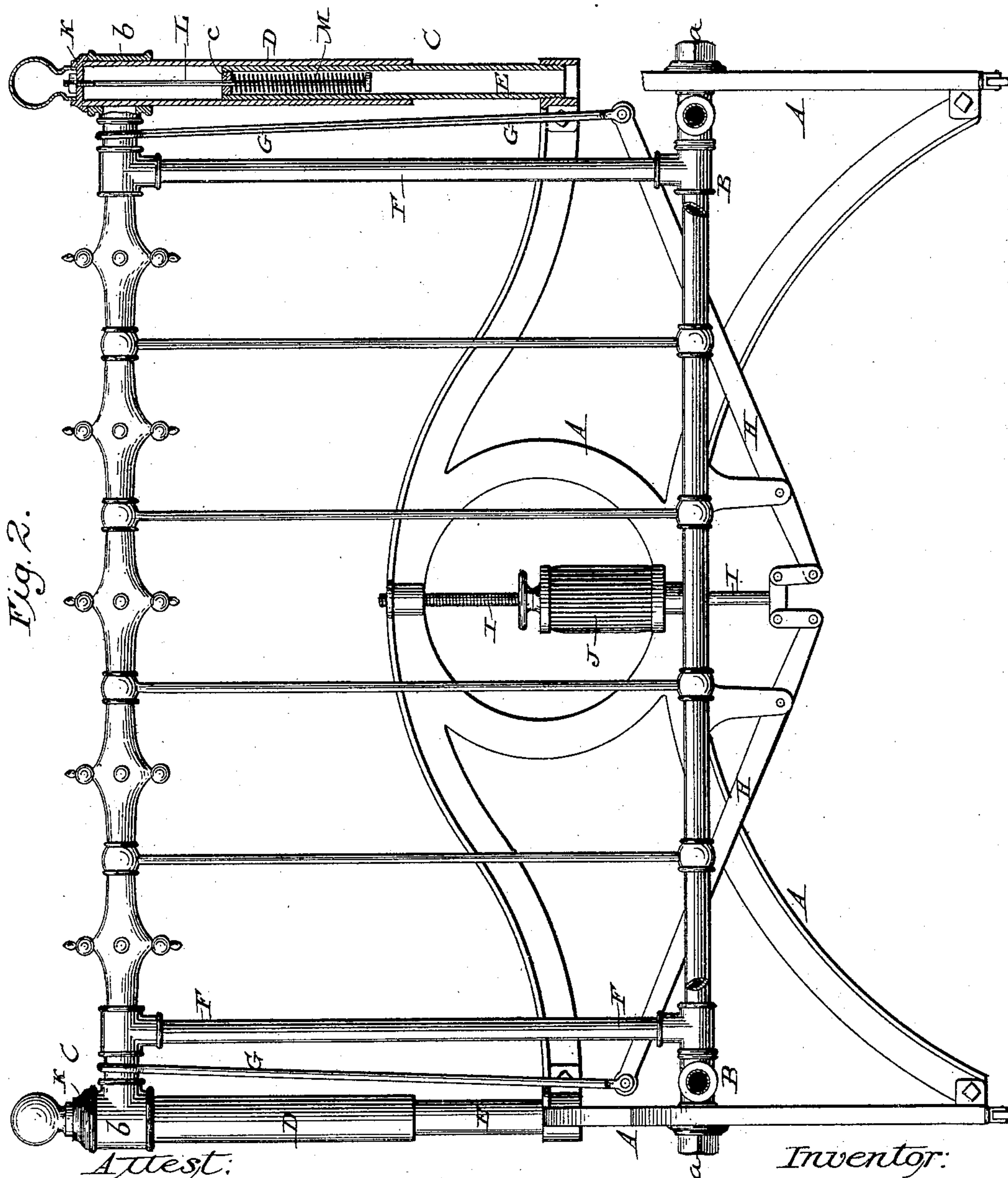
(No Model.)

2 Sheets—Sheet 2.

J. PENNEY.
FOLDING BED.

No. 397,308.

Patented Feb. 5, 1889.



Attest:
Sidney P. Hollingsworth
Chas. R. Kennedy

Inventor:
Joseph Penney
By his atty.
P. T. Dodge

UNITED STATES PATENT OFFICE.

JOSEPH PENNEY, OF GRAND RAPIDS, MICHIGAN.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 397,308, dated February 5, 1889.

Application filed November 5, 1887. Serial No. 254,417. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH PENNEY, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain Improvements in Folding Beds, of which the following is a specification.

My invention relates to that class of folding beds in which the rigid bed-bottom is hinged at one end to a base-frame to turn upward and downward, and combined with counterbalancing springs or weights. It is intended more particularly as an improvement on the construction represented in my application for Letters Patent on the 11th day of June, 1887, Serial No. 241,057, and has in view the application of a varying resistance as the bed-bottom is turned up and down, so that a substantial equilibrium is maintained during the entire rising or falling movement of the bottom.

In the drawings I have represented my present improvement in connection with a bed in other respects identical with that set forth in my prior application, above referred to.

Figure 1 represents a side elevation of the bed; Fig. 2, an end elevation of the same, portions of the frame being shown in section.

A represents a rigid base-frame of any appropriate form, and B the bed-bottom, having a rigid frame connected near one end to the base-frame by horizontal journals *a*, so that it may be turned at will to a vertical or a horizontal position. The head-board or head-frame C has at its ends sleeves *b*, which are mounted upon sleeves or tubes D, which slide in turn upon vertical tubular posts E, erected rigidly on the outer corners of the base-frame. From the head-board pitmen F are extended to the end of the folding bottom, so that as the bottom is turned downward and upward the head-board will rise and fall. Pitmen G are extended from the two ends of the head-board to the outer ends of the two levers H, which are pivoted near their inner ends to the base-frame and connected by links or otherwise to the lower end of a vertical rod, *I*. This rod passes through guides on the frame and through a lifting-spring, J, and is provided with a collar or nut bearing on said spring, as shown. Through these intermediate connections the spring J tends to depress the head-board, which in turn acts through the

pitman in a downward direction on the end of the bed frame or bottom, enabling the attendant to turn it upward and downward with comparative ease.

As the bed-bottom approaches its horizontal position, it exerts an increasing strain or leverage upon the resisting or counterbalancing devices, and I therefore provide means for applying and increasing resistance as the bottom swings downward, as follows: Each of the sleeves D is provided with a cap, K, attached to the upper end of a rod, L, extended downward within the post E and through a spiral compression-spring, M. This spring bears at its lower end against a head on the rod and at its upper end against a fixed bar or guide, *c*, within the post E, so that it tends through the rods and cap to move the sleeve downward upon the post. When the bottom is in an upright or approximately-upright position, the head-frame is lowered so that its sleeves *b* are below and out of contact with the cap K, so that the springs M remain inactive. As the bottom swings downward, the head-board rises until its sleeves *b* encounter and lift the caps, thus bringing into play the springs M, so that their resistance supplements or re-enforces that of the spring J in easing the descent of the bed-bottom.

The essence of my invention resides in arranging the secondary or supplemental counterbalancing devices to come into play as the changing position of the bottom renders necessary, and it is manifest that the details may be variously modified without changing essentially the mode of action.

In order to assist in sustaining the bed-frame when extended, I propose to mount on the sides of the base-frame two horizontally-sliding legs or panels, O, which may be moved forward at will beneath the bed-frame.

I do not claim herein the combination of the tubular posts, the sliding head connected to the folding bed-frame, and the spring J and its connections, as they form the subject-matter of my prior application, Serial No. 241,057, above referred to.

Having thus described my invention, what I claim is—

The bed-frame A, having tubular corner-posts E E, and the bed-bottom frame B, pivoting on journals of the base-frame, in com-

bination with the head frame or board having
tubes D D, whereby it is adapted to slide ver-
tically along the posts of the base-frame, pit-
men F, connecting the head-board with the
5 inner end of the bed-bottom frame, the spring
J, levers H, connected therewith, the pitmen
G, connecting the levers with the head-board,
the momentum-opposing springs M M, and
the capped rods connecting the sliding head-

frame therewith, substantially as shown and 10
described.

In testimony whereof I hereunto set my
hand, this 21st day of June, 1887, in the pres-
ence of two attesting witnesses.

JOSEPH PENNEY.

Witnesses:

CHAS. F. PIKE,

CHAS. L. GRINNELL.