

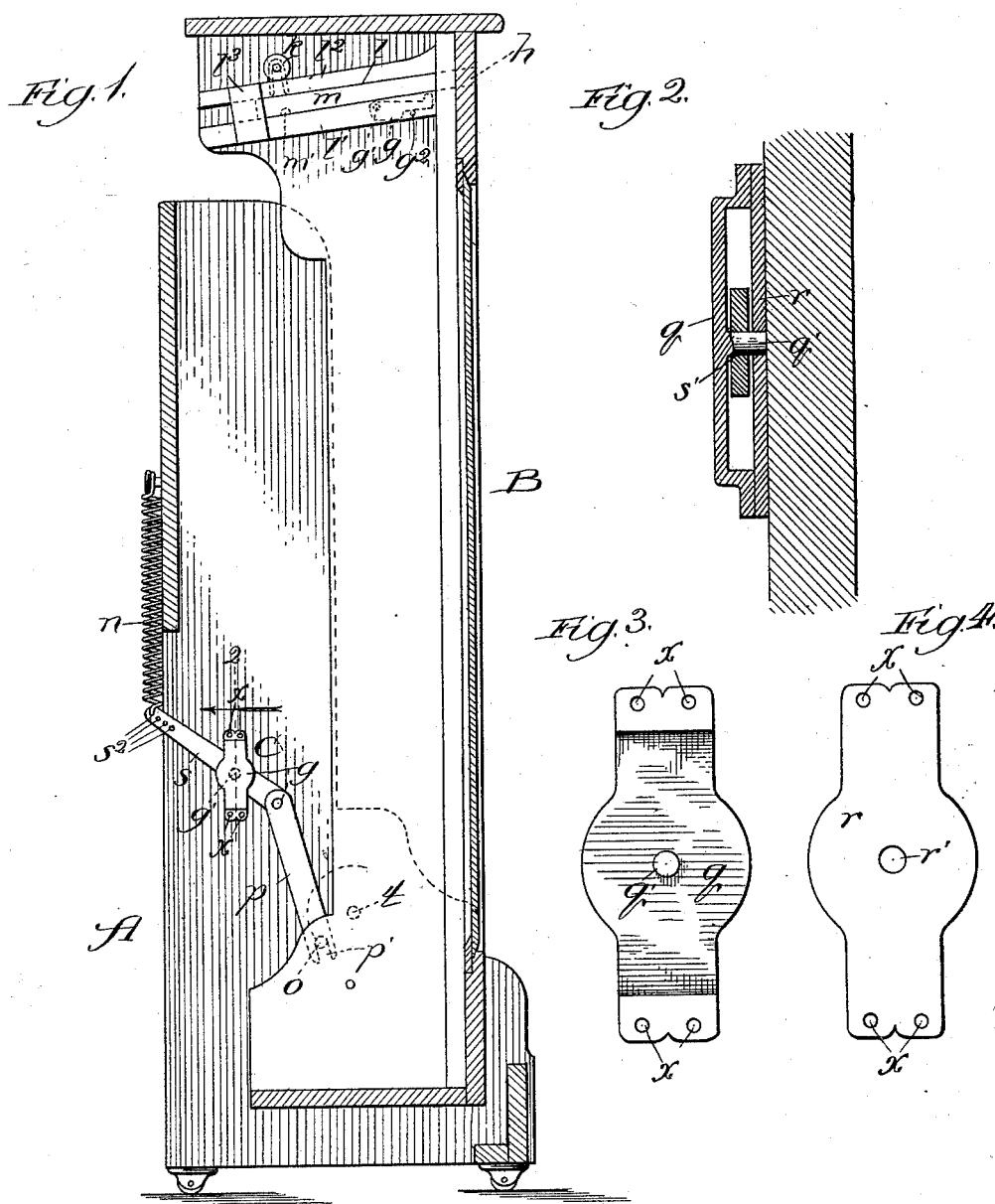
(No Model.)

2 Sheets—Sheet 1.

H. WADDELL.
WARDROBE BEDSTEAD.

No. 489,209.

Patented Jan. 3, 1893.



Witnesses:
 Carl Gaylord,
 Clifford V. White.

Inventor:
Harvey Maddell,
By Dyrenforth & Dyrenforth
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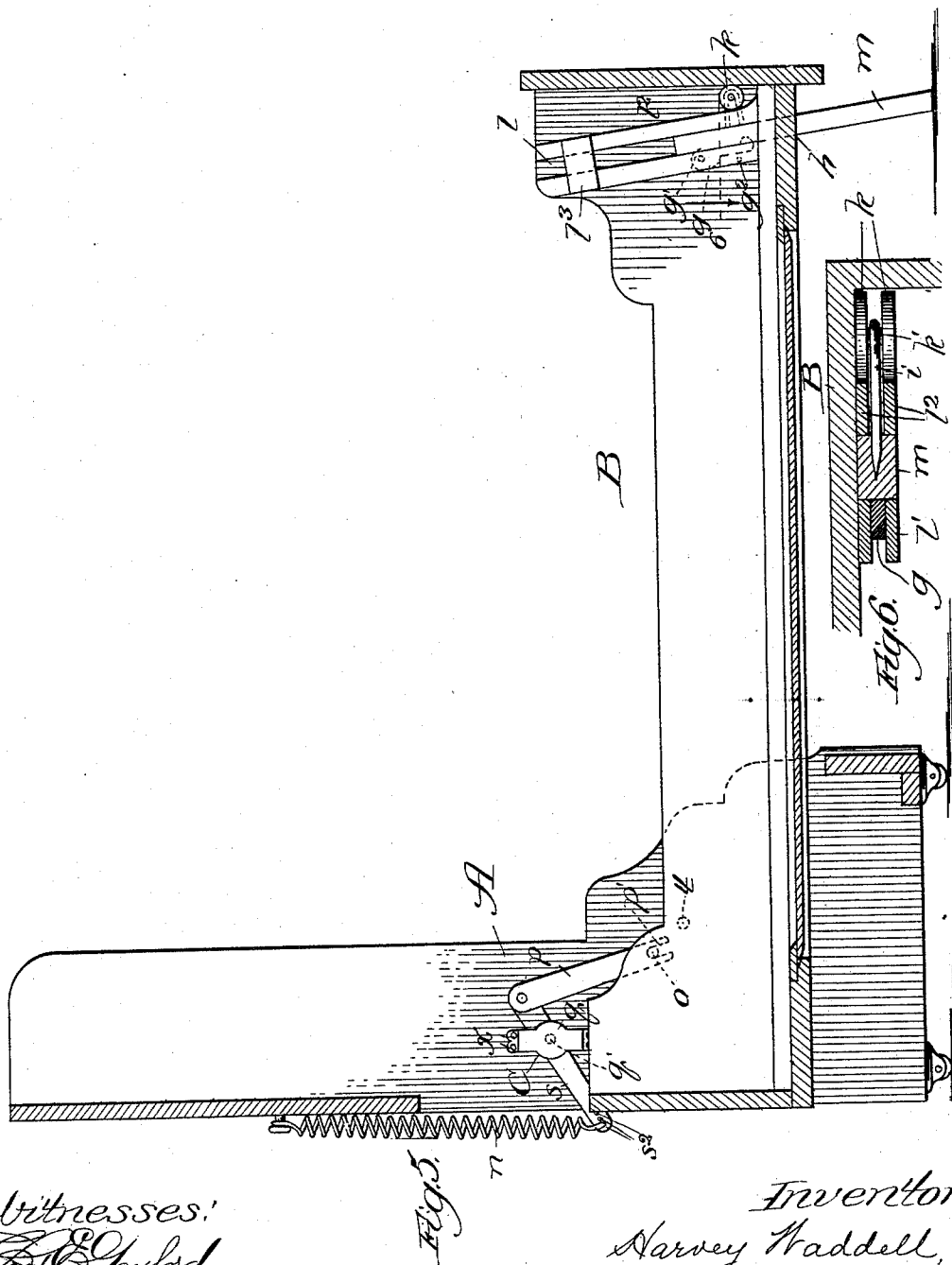
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Witnesses:

Edw. G. Lyford,
Clifford N. White.

Inventor:

Harvey Waddell,
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UNITED STATES PATENT OFFICE.

HARVEY WADDELL, OF CHICAGO, ILLINOIS.

WARDROBE-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 489,209, dated January 3, 1893.

Application filed September 25, 1891. Serial No. 406,798. (No model.)

To all whom it may concern:

Be it known that I, HARVEY WADDELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Folding Beds, of which the following is a specification.

My invention relates to improvements in folding beds of the class in which the couch portion is pivotally mounted at its head in a frame and swings between the vertical horizontal planes.

My object is to provide improved spring counter-balance mechanism to resist lowering and assist the rise of the bed; which, in the opening and closing of the bed shall be comparatively noiseless in its action, and tend, as the bed is being opened, to prevent the stationary frame portion of the bed from toppling forward.

In the drawings—Figure 1 is a vertical section of my improved folding bed folded, showing my improved counterbalance mechanism; Fig. 2, an enlarged section taken on line 2 of Fig. 1 and viewed in the direction of the arrow; Figs. 3 and 4 details in elevation of the counter-balance mechanism; Fig. 5, a longitudinal section of the bed unfolded; Fig. 6, an enlarged section taken on line 6 of Fig. 5 and viewed in the direction of the arrow.

A is the stationary supporting frame and head-portion of the bed to which the swinging bed-frame or couch-portion B is pivoted in bearings at *t*.

The counterbalance mechanism C comprises a lever, *s*, fulcrumed near one end upon the inner surface of the side of the frame A. The fulcrum or pivotal support of the lever *s* comprises a plate, *r*, having a central opening, *r'*, and a socket-plate, *q*, provided at the center of its concave face with a stud, *q'*. At opposite ends the parts *r* and *q* are provided with screw-holes, *x*, which, when the parts are fitted together, coincide, the stud *q'* fitting into the opening *r'*. In the lever *s* is an opening, *s'*, at which it fits loosely over the stud *q'*, and the parts are held together and to the side of the frame A by screws passing respectively through the coincident screw-holes *x* of the parts *q* and *r*. A link, *p*, is pivotally connected at one end to the end of the short arm of the lever

s; and at its free end the link *p* is provided with a socket, *p'*, which fits over a stud or pin, *o*, on the side of the swinging frame B. The short arm of the lever *s* extends forward of its fulcrum, at *q*, which is above the inner end-portion of the swinging frame B. The stud *o* is located a short distance back of the pivot *t*. A coiled spring, *n*, is fastened at one end to the frame A above the lever *s* and at its lower end is connected to the long arm of said lever.

The relative positions of the parts of the counterbalance mechanism and pin *o*, when the bed is closed and opened, are shown respectively in Figs. 1 and 5. In swinging the bed down from the vertical plane, as shown in Fig. 1, the link *p* is forced longitudinally upward and swings the lever *s* upon its fulcrum against the resistance of the spring *n*. The resistance of the spring *n* thus has a counterbalancing effect upon the swinging couch.

In practice two counterbalance mechanisms C are provided upon the bed, one at each side of the latter, and their effect is to resist the lowering and assist the rise of the bed and maintain it closed when raised.

In order that the mechanism may be adjusted to exert greater or less resistance, depending upon the weight of the swinging couch B, a series of holes, *s²*, are provided along the long arm of the lever *s*, at either of which the spring *n* may be secured. The link *p* is maintained in engagement at its socket with the pin *o* by the force of the spring *n*. By bearing down upon the lever *s* the link *p* may be readily disconnected from the pin *o*.

When it is desired to remove the mattress from the bed, in making up the latter, by disconnecting the counterbalancing mechanism, as described, on one side of the bed, the danger of the bed's closing when the bed-clothes are removed will be obviated.

In the preferred construction of the support for the foot portion of the swinging couch, a leg or bar, *m*, is loosely mounted to slide in an inclined guide, *l*, on the inner side of the side rail. The guide *l* when the couch is raised inclines downward and inward (or backward from the front of the bed). The guide is formed of a strip, *l'*, below the leg when the couch is raised, and a strip, *l²*, on the opposite

side of the leg. Near the inner end of the guide is a side-plate, l^3 , and the strip l^2 is bifurcated from the said side-plate to its opposite end, at the front of the bed. The upper side of the strip l^2 affords a double track for a sliding weight which I prefer to provide in the form of a double or divided roller, k , having a central axle, k' . A staple, i , straddling the axle k' of the roller and passing down between the tracks l^2 is driven into the inner end portion of the leg m .

Through the front of the bed in line with the guide l is an opening, h , through which the leg slides. The comparatively slight inward inclination of the guide l when the couch is raised is not sufficient to cause the leg to slide by gravity down the incline, owing to the friction of the leg against the guide. The roller k , however, when the bed is raised will run down the inclined track l^2 , which, as shown, is parallel with the guide, and the roller is sufficiently heavy to drag with it the leg to retract the latter. When the couch B is swung downward and the guide has passed the horizontal plane the weight of the roller and leg will cause the former to run down the track to the front of the bed and the leg to slide outward and become extended. Near the front of the couch the strip l' is bifurcated to receive a swinging dog, g , which is pivoted, between the forks of the strip l' , at g' . Near the inner end of the leg m in the side of the latter adjacent to the strip l' is a notch, m' . When in the lowering of the bed the leg, has slid outward to its fullest extent the notch m' is opposite the engaging end of the dog g , and the latter is so mounted on its pivot as to swing at its engaging end into the notch m' when the couch nears the horizontal plane. The engagement of the dog g with the notch m' operates as a stop to prevent the legs being forced in or retract by the weight imposed upon it. As the couch is raised the dog g swings out of engagement with the leg and rests against a stop, g^2 , which extends across its path in the position shown. In the construction described the leg when extended is

somewhat inclined, as shown in Fig. 5. The spring n of the counterbalance mechanism being secured to the back portion of the main-frame above the lever, and drawn upon in a downward direction, tends to resist forward tipping of the main frame when the couch is being lowered or raised.

What I claim as new and desire to secure by Letters Patent is—

1. In a folding-bed, the combination with the stationary frame and vertically swinging couch, pivoted to the stationary frame, of counterbalance-mechanism for the couch, comprising a lever fulcrumed between its ends on the stationary frame, a link pivotally connected at one end with one end of the lever and at its opposite end with the couch near its head-portion, a spring, n , connected with the lever and with the stationary frame above the lever, to draw in the downward direction upon the stationary frame and operating through the medium of the lever and link to resist lowering and assist raising of the couch, substantially as described.

2. In a folding-bed, the combination with the stationary frame and vertically swinging couch, pivoted to the stationary frame, of counterbalance-mechanism for the couch, comprising a spring, n , connected with the main frame, a lever, s , fulcrumed near one end-portion to the stationary frame below the spring, and adjustably connected near one end with the spring, a link, p , pivoted at one end to the short arm of the lever s , and provided at its opposite end with a socket p' at which it is pivotally and removably attached to the couch near the head-portion, thereof the spring operating to draw in the downward direction upon the stationary frame and through the medium of the lever and link to resist lowering and assist raising of the couch, substantially as described.

HARVEY WADDELL.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.