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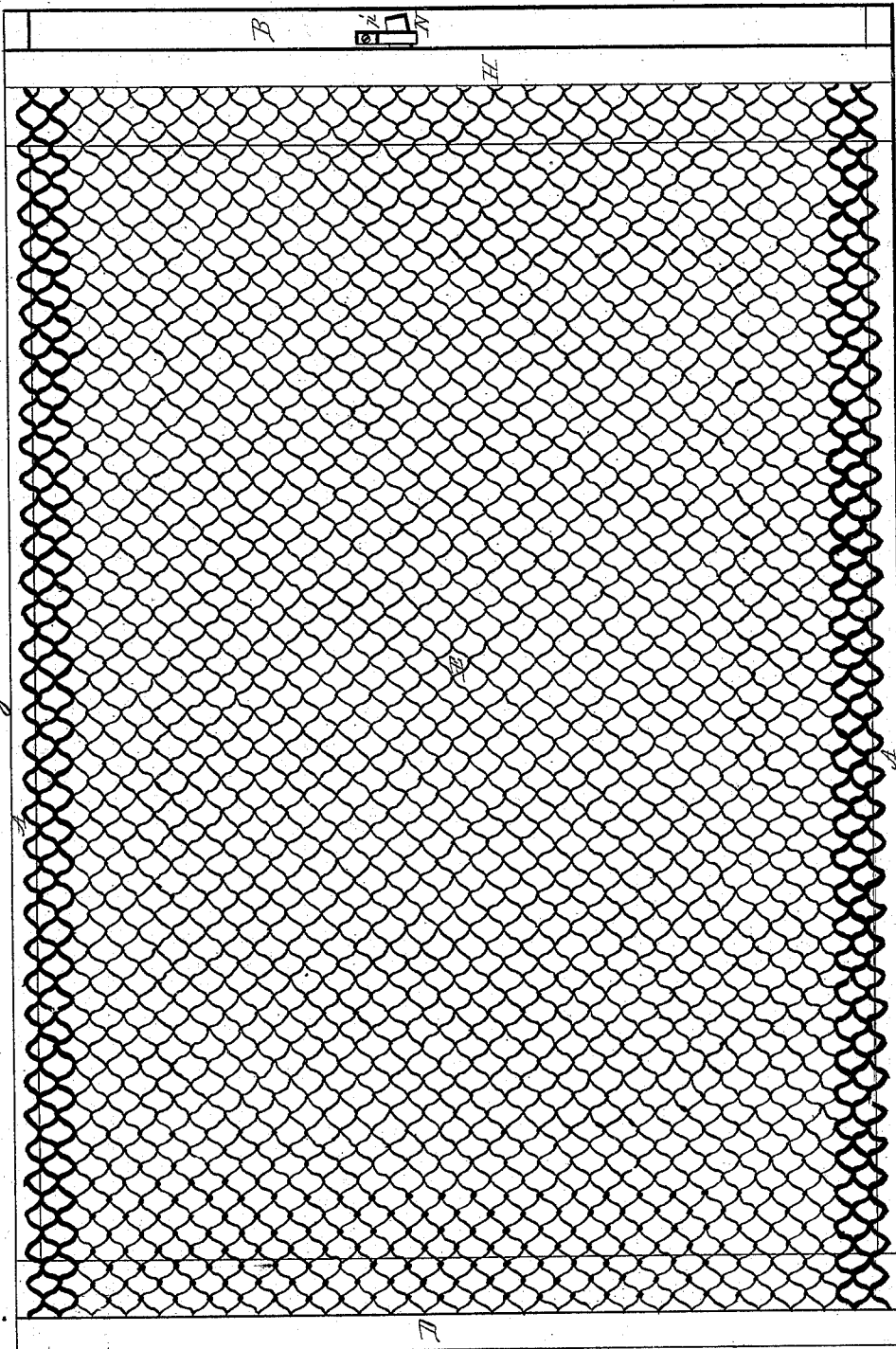
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H. B. HOWARD.
SPRING BED BOTTOM.

No. 274,331.

Patented Mar. 20, 1883.

Fig. 1.



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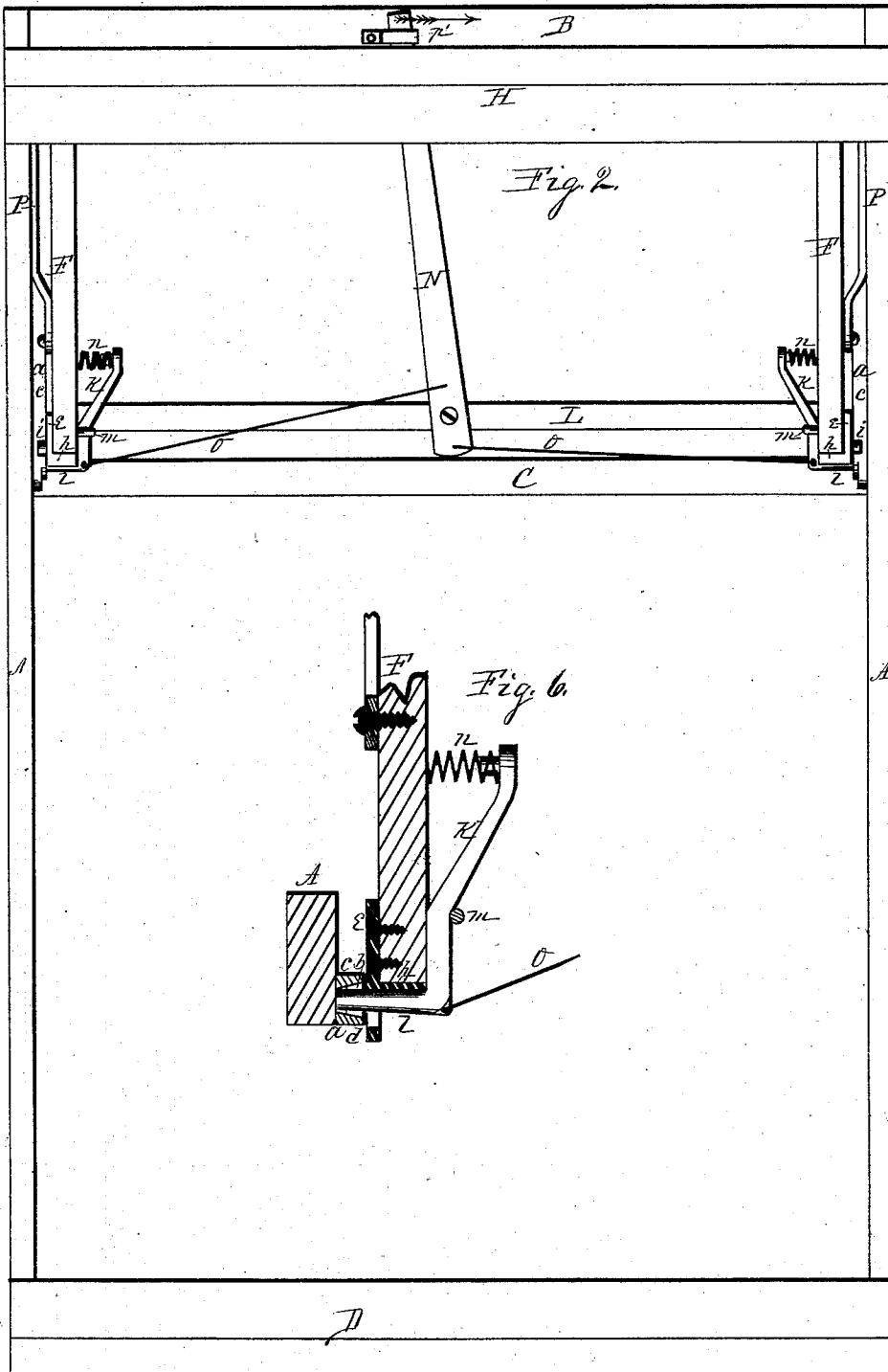
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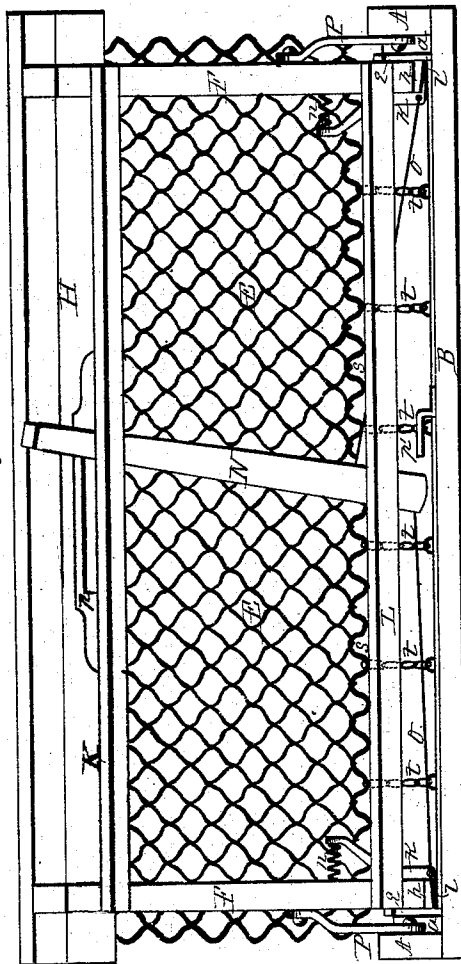
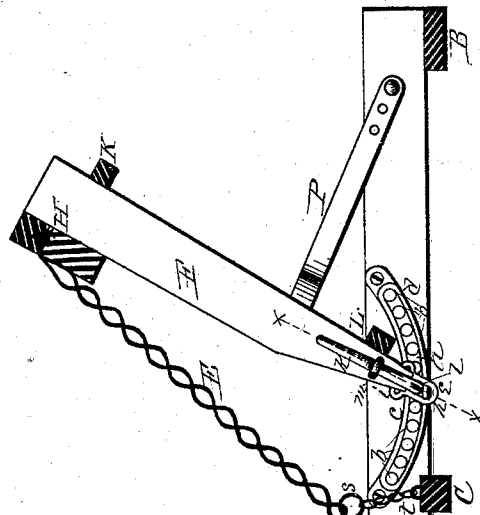
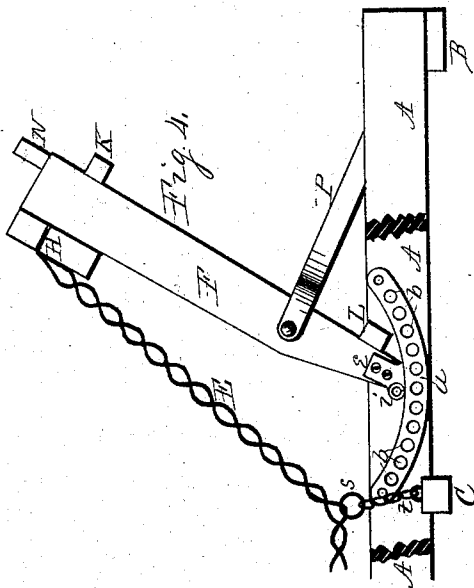


Fig. 6.

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UNITED STATES PATENT OFFICE.

HORACE B. HOWARD, OF BELVIDERE, ILLINOIS.

SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 274,331, dated March 20, 1883.

Application filed January 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, HORACE B. HOWARD, a citizen of the United States, residing in the city of Belvidere, in the county of Boone and State of Illinois, have invented new and useful Improvements in Spring Bed-Bottoms, of which the following is a specification.

My invention relates to that class of bed-bottoms known as "invalid-beds," in which the head portion is made vertically adjustable.

The object of this invention is to produce a bed having a head portion capable of an upward-inclined adjustment to any probable required angle without materially changing the length of the mattress-bearing surface; and my invention is especially adapted to that class of bed-bottoms known as the "woven-wire mattress," in connection with which I have represented my improvements in the accompanying drawings, in which—

Figure 1 is a plan view of a woven-wire-mattress bed-bottom. Fig. 2 is a plan view of a frame of my improved bed-bottom fitted to receive the woven-wire mattress. Fig. 3 is a lengthwise vertical section. Fig. 4 is a side elevation of the head portion, in which a portion of the side rail is broken out to reveal the outer face of the raised head. Fig. 5 is an end elevation with the head portion raised. Fig. 6 is a section of one side cut on dotted line *x*.

In the figures, A represents side bars or beams of a bed-bottom, rectangular in section and of proper length, suitably separated and fixed in their relative position at their head ends and central position by means of transverse bars B and C, securely fixed to their under edges, and at their foot ends by means of a two-part end bar, D, securely fixed to their upper edges. This two-part end bar, D, receives the foot-end portion of the woven-wire mattress E between its contiguous edges, where it is securely fixed by firmly joining the two parts of the end bar to each other by nails, screws, or otherwise.

At *a* are represented curved ratchet-bars provided with a series of holes, *b*, throughout their length, formed in a recess between the flanges *c* and *d*, which project inward from the perforated plate. These curved ratchet-bars are fixed to the inner surface of the side rails at a proper point on the head-end side of the center transverse bar, C.

At F are represented the side beams of the hinged head-end portion of the frame.

At H is represented a two-part end bar, between the contiguous edges of which is fixed the head-end portion of the woven-wire mattress E, in the same manner and for the same purpose that the foot end of the woven-wire mattress is fixed between the contiguous edges of the two-part end bar, D. This two-part end bar, with the woven-wire mattress in place, is securely fixed to the upper surface of the head-end portions of the side bars, F, of the hinged head-end portion of the frame. To the end portions of the side bars, F, on their under edges, are fixed transverse bars K and L, which, in connection with the sides and end bar above described, produce the adjustable head-end frame of the bed.

At *e* are represented foot-plates provided with grooved socket end arm, *h*, adapted to receive and support a suitable detent to engage the holes in the curved ratchet-bars. These plates are fixed to the outsides of the lower ends of the side bars, F, and are provided with a roller, *i*, adapted to engage the inner flange, *c*, of the curved ratchet-bars. The rollers *i* rest and roll upon the ratchet-bars, by which means the head-frame is supported by the curved plates or ratchet-bars, and are braced and allowed to assume various angles with the bed-bottom.

At *k* are represented lever-detents of the peculiar form shown, having a hook-end detent, *i*, adapted to freely enter and move endwise in the grooved socket of the end arm, *h*, and are of sufficient length to extend through the socket and enter the holes *b* in the curved ratchet-bars. These lever-detents are fixed in position on the inner face of the side bars, F, by means of a staple or staple-formed hasp, *m*, which spans the arm of the lever at its fulcrum-angle in such a manner as to hold it in position and permit it to vibrate on its fulcrum-support. The free ends of these detent-levers are provided with a spring, *n*, employed to hold the detent engaged with the ratched bar.

At N is represented a lever having a pivotal connection with the transverse bar L and rod-connections *o*, with its inner end, and with the lever-detents in such a manner that a movement of its free end will operate to disengage the detents from the holes in the curved ratchet-bars.

et-bars. This lever N is supported on the upper side of the transverse bars K and L of the adjustable head-frame, and is supported to move laterally in a guide-loop, *p*, on bar K, and its free end extends over the head-end bar B of the main frame, which is provided with a hook-catch, *p'*, to receive the free end of the lever, and serves to hold the adjustable head-frame in a horizontal position when desired, and is a convenient means of fixing it in position for shipment.

At P are represented braces having one end thereof pivot-jointed to the outside of the side bars, and the other ends thereof having a pivot-connection with the inner side of the head-end portion of the side beams of the main frame. The end portions of these braces P, which are connected with the side beams of the main frame, are provided with a series of holes, by means of which the braces may be shortened, which will carry the adjustable head-frame farther toward the head end of the main frame and will increase the tension on the woven-wire mattress.

At *s* is represented a spirally-coiled wire looped into the coils of the woven-wire mattress, on its under side, extending crosswise thereon in position to receive the chain-links *t*, or other suitable links, at proper intervals to connect the woven-wire mattress to the center transverse bar, C, of the main frame.

From the foregoing it will be seen that a movement of the free end of the lever N in the direction indicated by the arrow will operate to disengage its free end from the hook-catch, and by means of its rod-connections with the lever-detents will disengage the hook-detent ends from their connection with the ratchet-bars, when the head-frame will be free and can be raised to any angle within the limits of the devices, and when the head-frame is raised to the angle or position desired, by liberating the free end of the lever N the springs *n* will cause the hook-detent ends *l* of the detent-levers to engage or enter the holes in the ratchet-bars and hold the head-frame in its elevated position. In this construction and arrangement the curvature of the ratchet-bar and the proportionment of the parts are such as to hold the tension of the woven-wire mattress substantially the same at any angle or point of elevation within the limits of the devices to which the head-frame may be adjusted.

In the foregoing I have represented my im-

provements in connection with a woven-wire mattress, to which it is especially adapted; but my improved adjustable head-frame is capable of use in connection with other forms of spring or flexible bed-bottom.

I claim as my invention—

1. The combination, with the main supporting-frame provided with curved ratchet-bars, of a head-supporting frame made vertically adjustable, said head-supporting frame having a pivotal and linked connection with the main frame by means of side braces, and its lower end having a detent-connection with the curved ratchet-bars, below its pivotal connection with the side braces, substantially as and for the purpose set forth.

2. The combination, with the adjustable head-frame, the side braces or links to which the head-frame is pivoted, and the curved ratchet-bars fixed to the main frame, of a supporting-roller mounted upon the adjustable head-frame, below its pivotal connection to the side braces, to engage the stationary curved ratchet-bars, for the purpose set forth.

3. The combination of the main frame, the adjustable head-frame, the pivoted side-brace links, the stationary ratchet-bars, the rollers secured to the lower end of the head-frame, to rest upon the ratchet-bars, and the detent to engage the ratchets, substantially as set forth.

4. The combination, with the main frame, and with a vertically-adjustable head-frame, of a flexible or an elastic mattress, said mattress having a suitable end connection with the main frame and with the adjustable head-frame, and a central transverse connection with the main frame at a point independent of the connection of the main and head frames, substantially as and for the purpose set forth.

5. The combination, with the spring-actuated detents employed to engage the ratchet-bars, of a lever to simultaneously disengage the spring-actuated detents, arranged upon opposite sides of the frame, substantially as and for the purpose set forth.

6. The combination, with the detent-operating lever and main frame, of a catch-hook to receive the free end of the lever to fix the adjustable head-frame in a horizontal position, for the purpose set forth.

HORACE B. HOWARD.

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