No. 698,368. Patented Apr. 22, 1902.

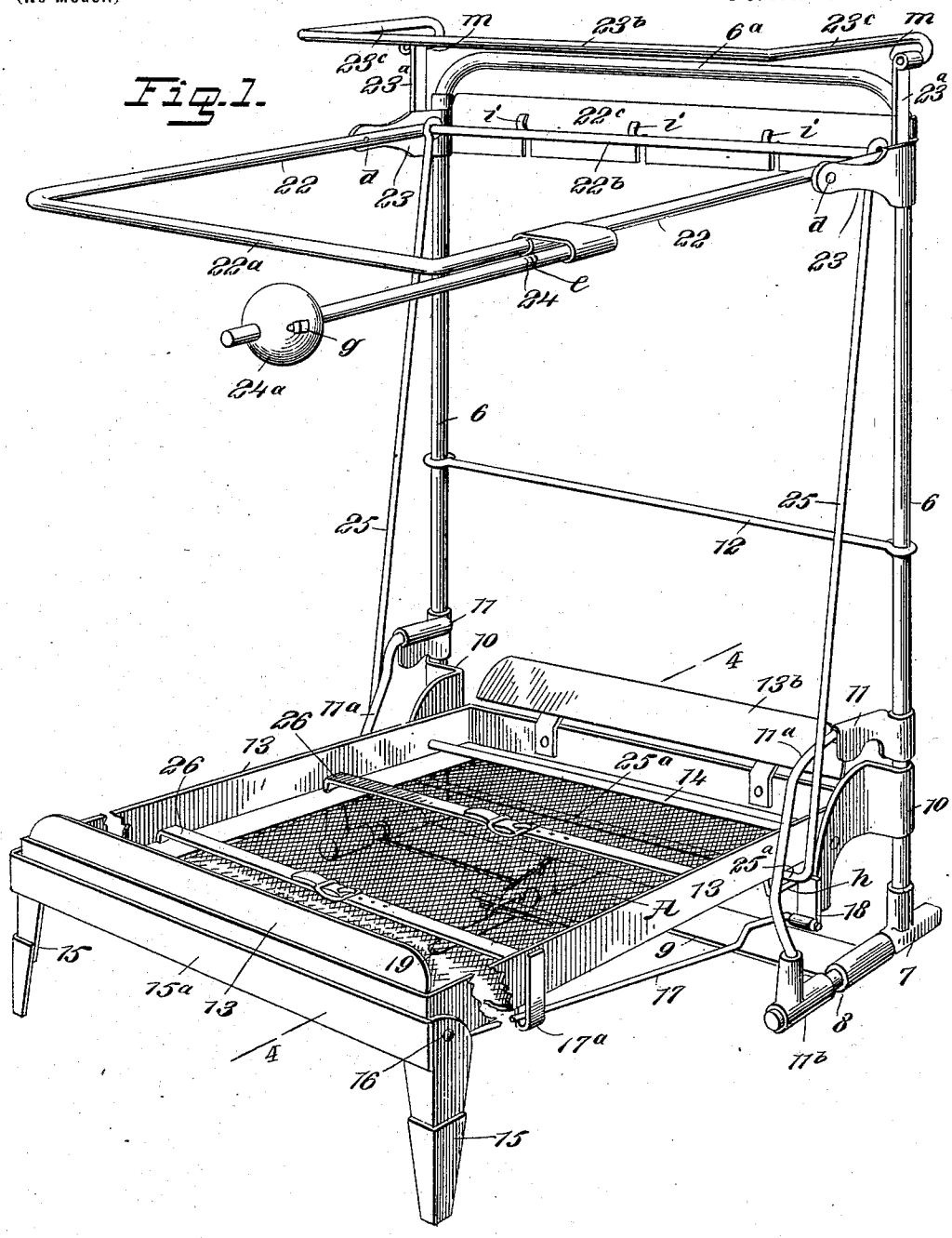
C. P. BROWN.

FOLDING BED.

(Application filed May 4, 1901.

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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Fig. 2.

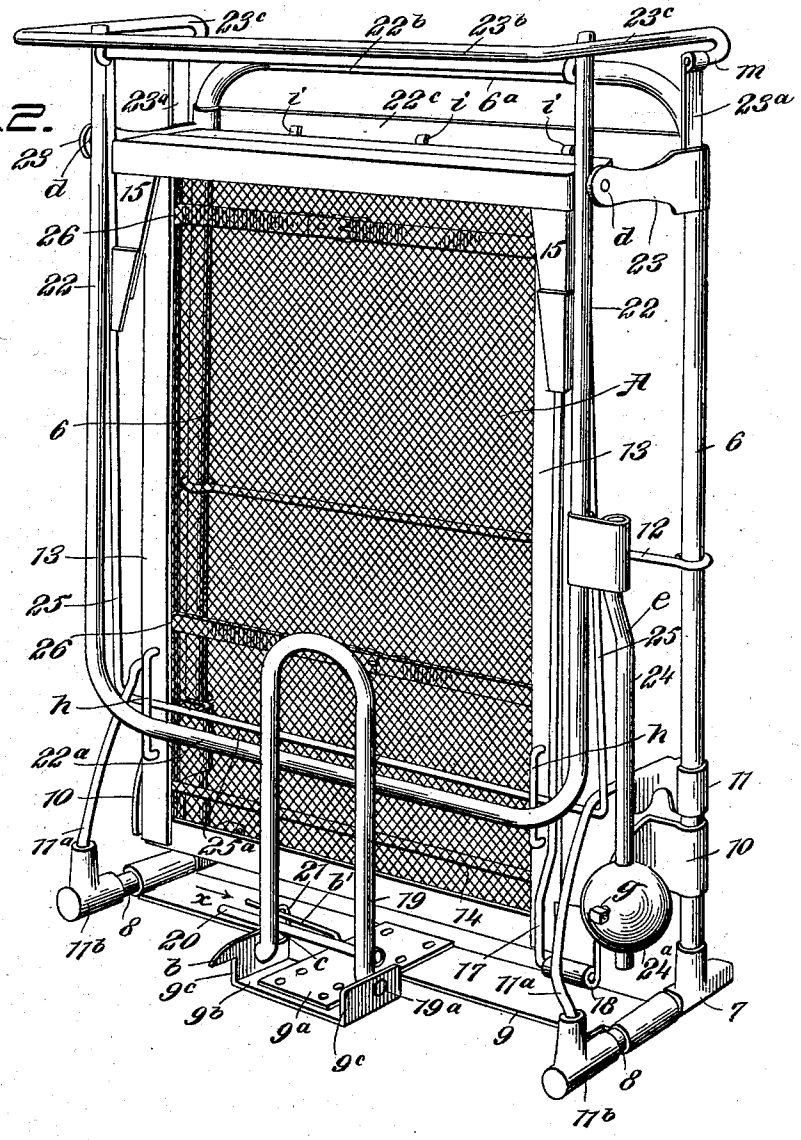
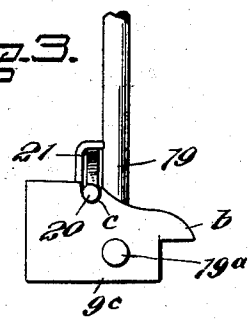


Fig. 3.



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Fig. 4.

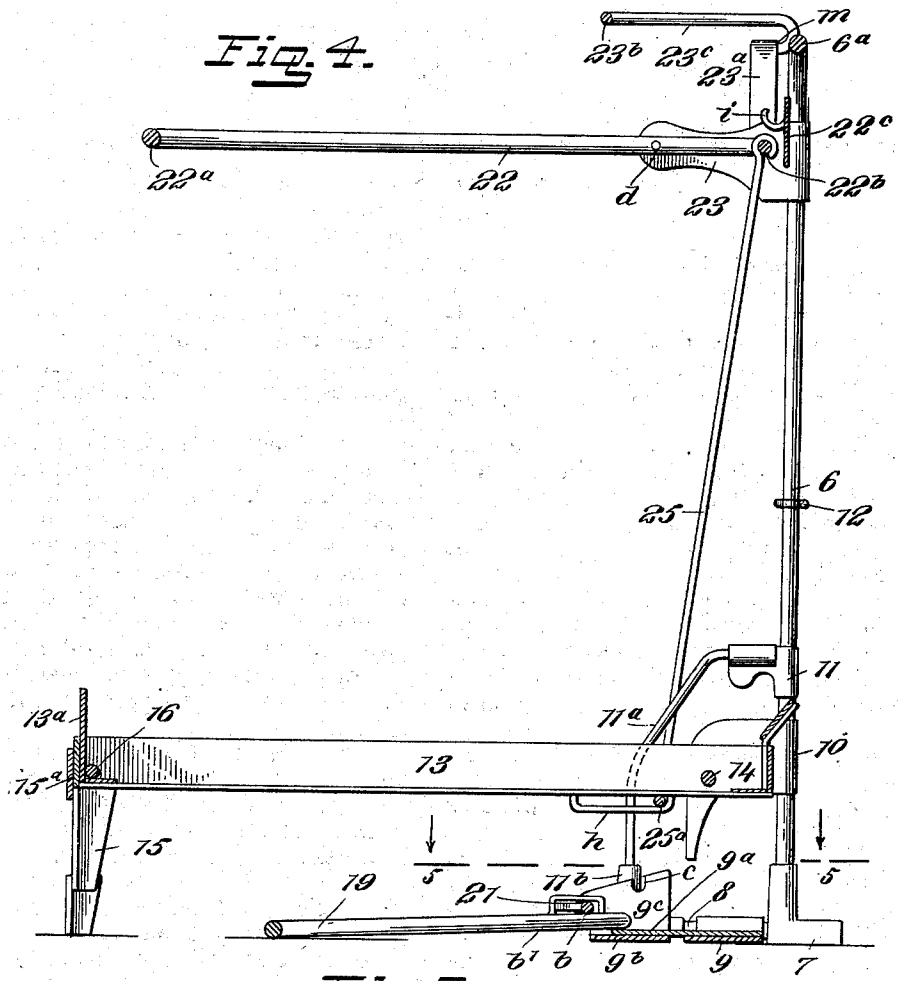
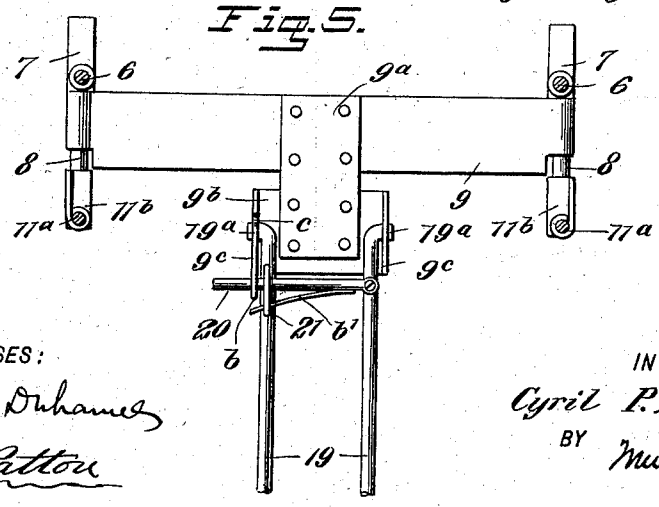


Fig. 5.



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UNITED STATES PATENT OFFICE.

CYRIL P. BROWN, OF SPRINGLAKE, MICHIGAN.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 698,368, dated April 22, 1902.

Application filed May 4, 1901. Serial No. 58,724. (No model.)

To all whom it may concern:

Be it known that I, CYRIL P. BROWN, a citizen of the United States, and a resident of Springlake, in the county of Ottawa and State of Michigan, have invented new and useful Improvements in Folding Beds, of which the following is a full, clear, and exact description.

The object of this invention is to provide a bedstead of the folding type formed principally of cylindric rods of metal and having novel details of construction which adapt it for convenient manipulation to open or close it and render it safe in use by provision of means to lock the folding section in opened condition; and a further object of the invention is to provide a self-adjusting canopy-frame for the bed, which frame extends over the couch when the latter is in a horizontal position.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved folding bed in opened adjustment. Fig. 2 is a perspective view of the bed in folded condition. Fig. 3 is an enlarged side view of a novel detail seen in the direction of the arrow *x* in Fig. 2. Fig. 4 is a partly-sectional side view substantially on the line 4 4 in Fig. 1; and Fig. 5 is a partly-sectional plan view of novel features, substantially on the line 5 5 in Fig. 4.

Two main posts 6, joined together at their upper ends by a cross-bar 6^a, are erected upon feet 7 in block form, from which extend bars 8 rearward and horizontally and in parallel planes, as best shown in Fig. 5, said foot-bars being connected by a transverse base-plate 9, whereby the posts are held parallel and at a proper distance apart. On each post 6, at a suitable distance above the foot-blocks 7, a bracket-arm 10 is secured, which arms are opposite and project rearward parallel with each other.

Above the bracket-arms 10 on each post 6 a brace 11 is affixed, from which extends rearward and downward a brace-bar 11^a, of which the brace 11 is a member and serves to attach the brace-bar upon the post, and the lower end of each brace-bar 11^a is firmly affixed upon a T coupling-piece 11^b, that in turn is mounted upon and secured to a respective rear end of a complementary foot-bar 8.

At a proper distance above the braces 11 a transverse spacing-rod 12 is secured at its ends upon the posts 6, and it will be seen that by the described construction of parts the posts 6 are stably supported in vertical positions and afforded a light, strong, and shapely base of such breadth and length rearwardly considered that weight imposed upon the posts will be so counteracted as to be prevented from tipping the head-frame of the bed structure constituted by the above-described details.

A rectangular couch-frame 13, preferably formed of plate metal, bent so as to afford an inwardly-extending horizontal flange thereon, which is continuous around the frame, is pivoted near its forward end upon the bracket-arms 10 by a fulcrum-rod 14, the ends of which loosely engage perforations in the sides of the couch-frame, but are secured firmly in opposite perforations in the bracket-arms 10.

Preferably a footpiece 13^a and a headpiece 13^b are respectively secured to project upward from the couch-frame at the respective ends of the same, and the headpiece may incline, as shown, so as to give a neat appearance and aid to support the bed-furniture when the couch-frame is in an upright position, which is effected as hereinafter described.

The rear end of the couch-frame 13 is supported when in use by a two-legged device, comprising the similar legs 15, held spaced apart by the angle-plate 15^a, so as to depend therefrom, the length of the angle-plate adapting the legs, that are triangular in cross-section, to fit closely upon the rear corners of the couch-frame when said frame is seated upon the horizontal members of the couch-frame 13.

A fulcrum-rod 16 (indicated in Figs. 1 and 4) extends through the side members of the legs 15 near their upper ends, said rod having rockable engagement in the angular cor-

ner of the bent foot piece 13^a, as clearly shown in Fig. 4. From one leg 15 near one side member of the couch-frame 13 a pusher-bar 17 extends forward, the rear end thereof having loose engagement with the bench-leg, and the forward end, that is formed with a lateral journal-pin, in a like manner engages a box 18, that is formed or secured upon an end of one of the bracket-arms 10.

It will be seen that if the rear portion of the couch-frame 13 is elevated so as to rock it on the fulcrum-rod 14 into an upright position such a movement will by service of the pusher-bar 17 correspondingly rock the two-legged bench, forming the support of the rear end of the couch-frame, and fold the legs 15 forwardly against the lower outer corners of the side members of said couch-frame, as is represented in Fig. 2.

Preferably the pusher-bar 17 is guided in its longitudinal movement by the guide-loop 17^a, which extends down from an adjacent side of the couch-frame 13.

An auxiliary footpiece is provided for the assured support of the head-frame of the bed and consists of the following details: Upon the base-plate 9 at its center, a flat arm 9^a is formed or secured, which extends of a suitable length rearward, and upon the extended portion thereof a bracket-plate 9^b is affixed parallel with the base-plate 9.

The bracket-plate 9^b is turned up at each side to provide two standing flanges 9^c, which are oppositely perforated for the reception of the journals, which project laterally from the ends of a U-shaped footpiece 19, the limbs of which are so spaced apart as to adapt the journals thereon to project out through the perforations in the flanges 9^c, while the footpiece is held to rock between them. Upon one limb of the U-shaped base-piece 19 an end of the latch-bar 20 is pivoted, as shown best in Fig. 5, and this bar, extending transversely on the base-piece 19 near its journals 19^a, passes loosely through a looped guard 21, carried by the other limb of the footpiece.

On the rear end of the upright flange 9^c, toward which the latch-bar 20 projects, a hook-nose b is formed, as clearly shown in Figs. 2 and 3, and when the footpiece 19 is rocked so as to project it rearwardly and has its looped end in contact with the floor whereon the bed stands the free end portion of the latch-bar 20 should be introduced below the said hook-nose, which will lock the footpiece 19 in a nearly horizontal position and adapt it to serve as an extension-base for the head-frame of the bedstead, which will prevent it from tipping toward the rear when the bed is being opened. The upper rear corner on the said flange 9^c is rounded, which facilitates the sliding movement of the latch-bar 20 upon the upper edge of the flange, as hereinafter more fully explained.

When the auxiliary base-piece 19 is adjusted for service, as described, the latch-bar 20 is held in place beneath the hook-nose b by a finger-spring b', secured at one end on the rear face of the latch-bar, and projects through the guard 21, against which said spring presses, so as to prevent an accidental displacement of the latch-bar 20.

In the upper edge of the flange 9^c having the hook-nose b a notch c is formed at a suitable point for the reception of the body of the latch-bar 20 when the couch-frame 13 is elevated sufficiently to close the bed, and when the latch-bar enters said notch c it will be held from accidental removal by the finger-spring b', that contacts with the end of the guide-loop 21, as shown in Figs. 2 and 3.

The device which may be employed for supporting a canopy or mosquito-netting pendent over the couch-frame and bed supported on it consists of the following details: A U-shaped counterbalance-frame, that is preferably a single bar of metal bent into form so as to provide two parallel side members 22, connected by a cross-bar 22^a, is pivoted, as at d, near the ends of said members 22 upon two like bracket-arms 23, which are oppositely secured upon the posts 6 near the cross-bar 6^a, which joins the upper ends of said posts, this disposal of the hanger-frame permitting it to hang pendent or be elevated so as to extend in a horizontal position above and over the couch-frame if the latter is in lowered condition.

Upon one of the side members 22 one end of an arm 24 is secured, the arm extending at the side of said member toward and beyond the cross-bar 22^a and having an offset e in its body to afford clearance from the frame member 22, which will permit the longitudinal adjustment of a counterbalance weight-block 24^a upon the counterbalance-arm 24, whereon said block is mounted loosely, but may be secured by a set-bolt g at any point it is placed. The ends of the side members 22 are connected together by a cross-bar 22^b, which completes the counterbalance-frame, rendering it substantially rectangular in form.

A rocker-frame consisting of two side levers 25, spaced apart at their lower ends by a transverse bar 25^a, is located near the posts 6, and at their upper ends the levers 25 are loosely connected with the cross-bar 22^b of the hanger-frame. The transverse bar 25^a of the rocker-frame passes beneath the sides of the couch-frame 13 and is held to slide a limited distance thereon by like keeper-loops h, which respectively depend from the lower surface of the couch-frame near the bracket-arms 10.

The location and means for connecting the rocker-frame with the couch-frame and stationary head-frame of the bedstead adapts the counterbalance-frame to rock downward when the couch-frame is rocked upward. For proper conjunctive operation the cross-bar 25^a of the rocker-frame is permitted to slide in the keeper-loops h at the start of the upward movement given to the couch-frame 13. This sliding movement is arrested by con-

tact of the cross-bar 25^a with the bent brace-bars 11^a, and it will be seen that as the bed-frame 13 is rocked from a horizontal position the cross-bar 25^a will be guided and controlled by the brace-bars 11^a, which quickens the movement of the couch-frame and rocker-frame until the cross-bar 25^a impinges upon the rear ends of the bracket-arms 11. The rocker-frame having been correspondingly elevated along with the couch-frame, it will be seen that its travel simultaneously lowers the counterbalance-frame, upon which it is jointed at the upper ends of the members 25 of said rocker-frame. As the couch-frame by its connection with the rocker-frame and counterbalance-frame is adapted to fold upwardly somewhat quicker at the start than the counterbalance-frame descends, it will be seen that this difference in speed of movement at the commencement of the same will insure the proper ascent of the couch-frame, so that the counterbalance-frame will be folded down upon the couch-frame when the latter is fully elevated.

It will be noticed that when the cross-bar 25^a of the rocker-frame engages the ends of the bracket-arms 11 said cross-bar will be located in short bends of the braces 11^a, and as said bends, together with the shoulders afforded at the ends of the bracket-arms, will provide locking-recesses, which serve to retain the cross-bar as adjusted until the rocker-frame is raised, this will prevent the couch-frame from falling down accidentally when it is fully elevated.

As the upper corner of the hook-nose *b* is removed and the edge rendered convex, as before mentioned, it will be seen that upon the release of the latch-bar 20 from beneath the hook-nose said bar will slide freely upon the upper edge of the flange 9^c, upon which the hook-nose is formed, and as the auxiliary base-piece 19 is elevated into a vertical position the latch-bar will be pressed into the notch *c* and be therein locked by the finger-spring *b'*, as before explained.

The combined weight of the hanger-frame, block 24^a, and arm 24 should be sufficient to about counterbalance the weight of the couch-frame and any bedding placed thereon, so that the upward folding movement of the couch-frame and bed thereon may be readily effected with but slight exertion, and as the weight-block 24^a is movable it will be seen that the counterbalancing of parts may be effected therewith if the bedclothing is changed to lighten or increase the weight of the same. It will be apparent that when the described parts of the bed are adjusted to close the same and the extension base-piece 19 is erected and locked in an upright position by the latch-bar 20, it will be thus held against the cross-bar 22^a of the counterbalance-frame, which will prevent an outward movement of said counterbalance-frame and lowering of the couch-frame until the base-piece 19 is first released and lowered into a horizontal position for support of the bed while the operation of opening it is being conducted.

It will be seen in Figs. 1 and 2 that a woven-wire bottom A or any other style of bed-bottom may with advantage be stretched taut at the lower side of the couch-frame 13 and thereon secured by any preferred means which will form a support for the bed proper, and in order to hold the bedding in place, so that it will not become disarranged when the couch-frame is rocked upward, straps 26, that are each furnished with buckles or equivalent means for adjustment, are attached at their ends upon the sides of the couch-frame, so as to be adjusted over and upon the bedclothing in an obvious manner.

A hook-plate 22^c is secured by its ends upon the upper portions of the posts 6, so as to extend transversely and near to the cross-bar 6^a, said plate having hooks *i* formed or secured thereon, which project toward the cross-bar 22^b and directly behind it, as shown in Figs. 1 and 4, and it is evident that the hooks *i* may with advantage be employed to hold in place a mosquito-netting that is sustained by the counterbalance-frame, but becomes pendent when the counterbalance-frame and netting thereon are rocked down so as to render the hanger-frame upright.

Upon the bracket-arms 23, adjacent to the cross-bar 6^a, two standards 23^a are erected, which afford support for a curtain-frame, comprising a transverse member 23^b and two integral side members 23^c, bent at right angles to the transverse member, hooks *m*, bent upon the ends of the side members 23^c, having engagement in tubulations formed on the upper ends of the standards.

It will be seen that the curtain-frame extends a suitable degree over the counterbalance-frame and couch-frame when the bed is in folded condition, and is well adapted to carry drapery in the form of a suitable curtain, which may hang in front of the folded bed-sections, so as to conceal the same.

I have described my improved folding bed as constructed of metal. I do not, however, wish to be confined to such material for its manufacture, as it is apparent by slight alterations in shape and proportion of parts some details of the device may be formed of any suitable wood and afford an equally serviceable bed.

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

1. In a folding bed, the combination with a head-frame having feet, a transverse base-plate on said feet, and a bracket-plate extended from the base-plate near its center, of an auxiliary base-piece which is pivoted by one end on the bracket-plate to receive vertical or horizontal adjustment, and a spring-controlled latching device adapted to hold the auxiliary base-piece in upright or lowered position.

2. In a folding bed, the combination with an upright head-frame, of a base, a double-flanged bracket-plate projected from the base proper, an auxiliary base-piece jointed upon the flanges of the bracket-plate, and a latching device adapted to hold the auxiliary base-piece upright or in lowered adjustment.

3. In a folding bed, the combination with an upright head-frame, of a base, a bracket-plate having two spaced upright flanges, one of said flanges having a hook-nose on one end and a notch in the upper edge spaced from the hook-nose, an auxiliary base-piece pivoted at one end between the upright flanges, and a spring-pressed latch-bar pivoted on the auxiliary base-piece and adapted to engage beneath the hook-nose when the base-piece is lowered, and enter the notch when said auxiliary base-piece is elevated.

4. In a folding bed, the combination with a head-frame, a fixed base therefor, and an auxiliary base-piece, comprising a U-shaped bar, a bracket-plate projected from the fixed base between sides of the head-frame and whereon journal ends of the U-shaped bar are pivoted, and means to hold said U-shaped bar upright or lowered, of a couch-frame, rockably engaged near one end with portions of the head-frame, and a support for the other end of the couch-frame.

5. In a folding bed, the combination with an upright head-frame having two side posts, a bracket-arm extended from each of the side posts, a fixed base for the head-frame, an auxiliary base-piece projecting from the fixed base between the side posts of the head-frame, and means for releasably holding the auxiliary base-piece upright or lowered, of a couch-frame pivoted near one end thereof between and upon the bracket-arms, a support at the rear end of the couch-frame having two legs adapted to automatically rock down at a right angle to the couch-frame for its support, when it is lowered, or be folded up against the lower side thereof when said couch-frame is given an upright position.

6. In a folding bed, the combination with an upright head-frame having feet, two side posts, two bent brace-bars on the side posts, arms on the post engaged by upper ends of the brace-bars which are affixed at lower ends to the feet, a couch-frame pivoted near one end thereof upon the arms of the head-frame, and means for supporting the other end of the couch-frame when it is lowered, of a rectangular counterbalance-frame held to rock on the upper end of the head-frame, and a rocker-frame loosely engaging the members of the counterbalance-frame, and having a cross-bar extended beneath the couch-frame, so as to contact with the bent frame and be guided thereby, and the rocking movement of the couch-frame transmitted to the counterbalance-frame whereby said frames are adapted to fold toward each other or the reverse.

7. In a folding bed, the combination with an upright head-frame, a couch-frame pivoted near one end on the members of the head-frame, and means to support the other end of the couch-frame when it is lowered, of a rectangular counterbalance-frame held to rock on the upper part of the head-frame, a counterbalance-arm on one side of the counterbalance-frame, an adjustable weight-block thereon, and a rocker-frame loosely engaging members of the counterbalance-frame and couch-frame for their simultaneous movement toward or from each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CYRIL P. BROWN.

Witnesses:
JOHN B. PRUIM,
ENNO J. PRUIM.