

T. WHISTANCE-SMITH.
FOLDING BED.
APPLICATION FILED JAN. 11, 1919.

1,384,932.

Patented July 19, 1921.

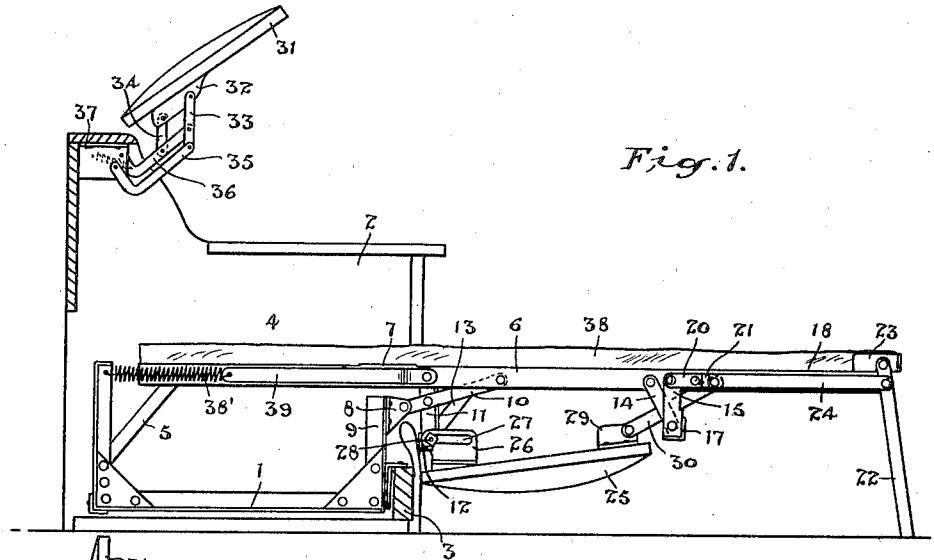


Fig. 1.

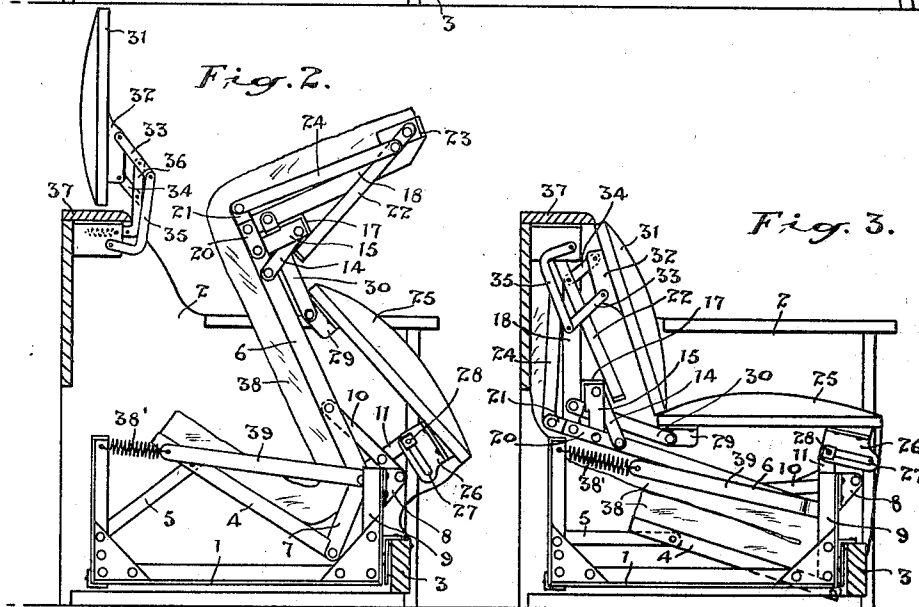


Fig. 2.

Fig. 3.

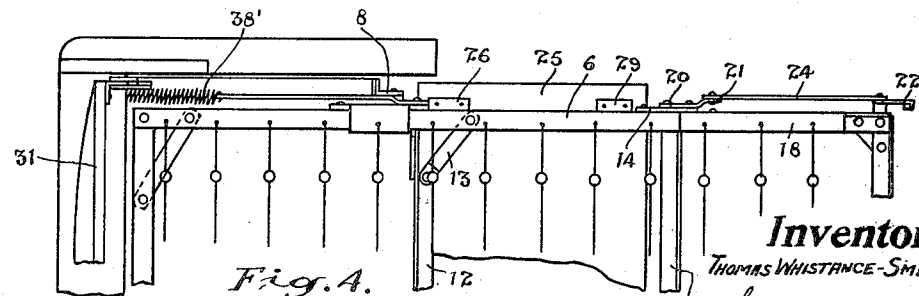


Fig. 4.

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FOLDING BED.

1,384,932.

Specification of Letters Patent.

Patented July 19, 1921.

Application filed January 11, 1919. Serial No. 270,726.

To all whom it may concern:

Be it known that I, THOMAS WHISTANCE-SMITH, a subject of the King of Great Britain, and resident of Mount Dennis, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Folding Beds, described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The principal objects of this invention are to provide an extremely strong and rigid frame for a folding bed, which upon being opened outwardly insures the proper extension of the supports for the outer end of the frame and the locking of same when extended.

A further object is to maintain the seat portion clear of the underside of the bed spring when the bed is in the extended position.

The principal feature of the invention consists in the novel construction and arrangement of parts whereby the legs supporting the outer part of the frame are automatically extended upon the opening of the frame and the seat member is definitely operated to clear the front portion of the seat frame and to be maintained clear of the underside of the springs and further to insure the rigidity of the frame structure when extended.

In the accompanying drawings, Figure 1 is a part sectional and elevational view of my improved device showing the bed frame in the extended position.

Fig. 2 is a part sectional elevational view showing the frame partly folded.

Fig. 3 is a part sectional elevational view showing the frame folded and the seat and back in their normal positions.

Fig. 4 is a plan view of one-half the frame shown extended.

Upon reference to the accompanying drawings it will be seen that the rigid frame 1 is supported within the outer seat structure 2, the front side being supported from the rigid cross bar 3 of the seat frame. The bed frame is formed in three main sections, the inward section 4 being pivotally supported at the back end by the pivotal struts 5 connected to the rear of the frame 1. The intermediate section 6 is connected to the rear section by the angle link members 7 which are flanged on the top to overlap the upper sides of the section.

Brackets 8 project forwardly from the up-

per ends of the uprights 9 of the frame 1 and these brackets are pivotally connected to the rigid arms 10 which extend forwardly and are rigidly connected to the sides of the intermediate frame.

11 are bars rigidly secured to the intermediate frame section at the pivotal point of connection between the said section 6 and the link 7. These bars extend downwardly crossing the rigid arms 10 and are rigidly connected with said arms, thereby with said arms forming a very rigid support for the inner end of the intermediate frame and the outer end of the back frame.

An angle bar 12 is secured to the lower ends of the bars 11 and extends across the frame. Struts 13 are arranged to support the frame at the corners.

14 are struts secured to the side bars of the intermediate section and extending angularly downward therefrom, have their lower ends connected to the angle bars 15 which are rigidly secured to the outer ends of the intermediate section 6 and extend downwardly therefrom at right angles.

An angle bar 17 is secured to the lower ends of the angle bars 15 and extends across the frame.

The inward ends of the outer section 18 of the frame are pivotally supported upon the forward ends of the side bars of the section 6 projecting beyond the point of connection of the angle bars 15 thereto.

Short bars 20 are rigidly secured to the outer ends of the pivot pins of the outer section 18 and to the point of connection of the angle bars 15 to the section 6, said bars 20 having the short extension ends 21 offset slightly in a lateral direction.

22 are legs supporting the outward end of the outer section 18, being pivotally connected at their upper ends to the outwardly projecting web of the angle iron brackets 23 secured on the upper side of the outer frame section 18.

Link members 24 connect the legs 22 with the offset extension 21 of the bars 20, the outer ends of said links being connected to the legs 22 below the pivotal point of support. This arrangement of the legs and links insures the links being properly extended as the bed is swung outwardly and therefore avoids the possibility of collapse through the leg being accidentally kicked.

The seat 25 is supported from the outward ends of the bars 11 by bracket members 26 which are secured to the underside

of the seat and are formed with longitudinal slots 27 through which the connecting bolts 28 secured in the members 11 extend. The other end of the seat is provided with angle brackets 29 on the underside and to these brackets are pivotally connected the link members 30 and each are pivotally connected at their opposite ends to the inner side of the side bars of the outer section 18.

A web of fabric extends between the seat 25 and the rigid cross bar 3 of the seat frame and is free to be folded or doubled in the operation of extending the frame.

The seat back 31 is provided with a pair of angle brackets 32 to each of which is secured a pair of links 33 and 34. The links 33 are connected at their free ends to the L-shaped links 35 and L-shaped links 36 are connected intermediate of their ends to the links 34 and at the extremities to the links 33. This arrangement of double parallel links allows the back to be swung upwardly and rearwardly to clear the top 37 of the frame 1.

In the handling of this bed the top is first swung upwardly in the manner indicated in Figs. 2 and 1 in the drawings. The bar 17 is then grasped and drawn forwardly as illustrated in Fig. 2, the section 6 swinging upon its pivot on the bracket 8 and the section 18 swinging upon the pivot lugs 19.

As the bed frame is extended outwardly to the position shown in Fig. 1, the links 24 connected to the extension ends 21 of the bars 20 swing the legs 22 outwardly and hold them securely in a positive relationship to the bed and when the bed is extended the legs cannot be moved except by raising the bed.

As the bed is extended the slotted brackets 26 are on the underside of the seat slide forwardly on the bolts 28 being drawn forward by the links 30 so that the seat member is moved forwardly to clear the cross bar 3 and to prevent the pinching or marring of the fabric connection between the seat front and the cross bar 3.

Links 30 also swing the seat downwardly clear and away from the underside of the springs.

The links 7 between the rear and intermediate sections allow for the accommodation of the mattress 38 arranged upon the top of the springs carried in the frame.

In closing the bed, the front end is lifted up and first pivots upon the brackets 8. By a slight downward pressure the point at the forward side of the section 6 is broken and the legs 22 are drawn inwardly as clearly shown in Fig. 2. The frame is folded in the manner illustrated, in the seat structure and the links 30 push the seat portion back to its normal position sliding upon the bolts 28.

The closing action is assisted by the coil springs 38' which are connected to the back portion of the rigid frame 1 and to bars 39 which extend forwardly and are connected to the frame at the point of pivotal connection of the section 6 and link 7. When the spring and seat have thus been folded in, the back 31 may be swung downwardly.

What I claim as my invention is:—

1. In a folding bed, a seat body, a rigid frame secured in said seat body having uprights at the forward side, a folding frame formed in three sections, the inner section being pivotally supported from the back portion of the rigid frame on a swinging pivotal support, the intermediate section having rigid bars pivotally connected to the front uprights of said rigid frame, link members pivotally connecting the adjacent ends of the inner and intermediate sections, said rigid bars extending downwardly from the intermediate section from the point of its pivotal connection with the link members, a seat having brackets at the inward side formed with longitudinal slots, said slots being engaged by the outward ends of the downwardly extending rigid bars from the intermediate section in sliding contact, an outer section pivotally secured to the intermediate section, legs supporting the outer end of said outer section, and link members pivotally connected to the inward ends of the outer section and extending beneath the intermediate section and pivotally connected to the seat and adapted upon the folding of the folding frame to slide the seat on its supports.

2. A folding bed, comprising, a seat body, a rigid structural frame secured within said seat body having uprights at the forward side, a folding spring frame formed in three sections, the intermediate section having rigid arms pivotally connected to the uprights of the rigid frame, a cross bar rigidly connected to the inward ends of the intermediate section, said cross bar being spaced from said section and below the same when in the extended position, link members connected to the inner ends of the intermediate section, an inner frame pivotally connected to the inner ends of said link members, link members pivotally connected to the inward ends of the inner section and to the back of the rigid frame, a seat slidably connected to the rigid cross bar connected to the intermediate section, an outer frame section pivotally connected to the outer ends of the intermediate section, legs supporting the outer end of the outer section, and link members pivotally connected to the underside of the seat adjacent to its free edge and to the outer frame section.

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