No. 862,182. PATENTED AUG. 6, 1907.

I. I. MULLER.

EXTENSION SOFA BED.

APPLICATION FILED JULY 7, 1903.

2 SHEETS—SHEET 1.

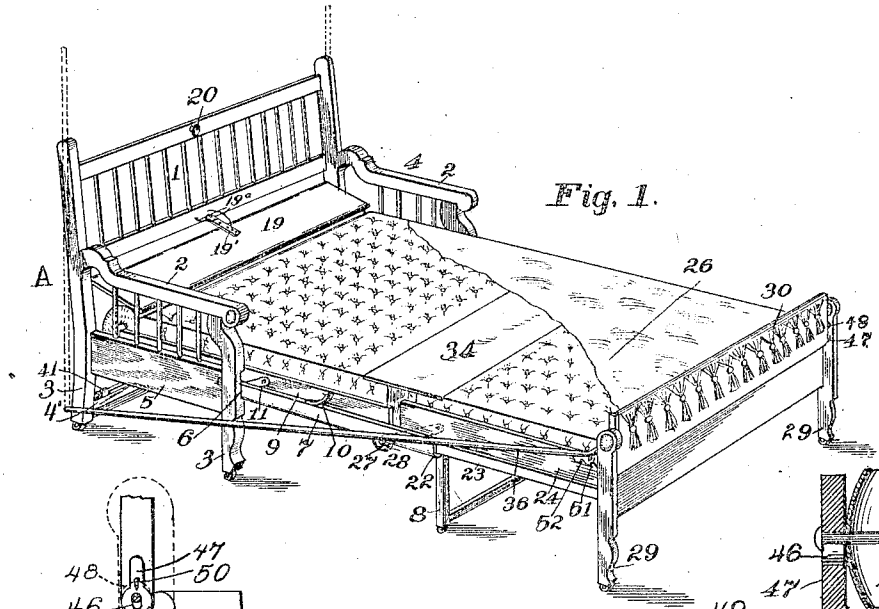


Fig. 1.

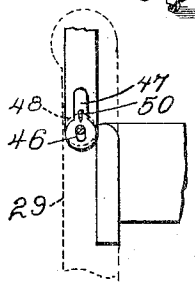


Fig. 8.

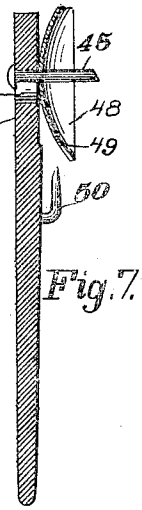


Fig. 7.

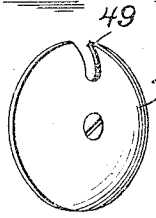


Fig. 6.

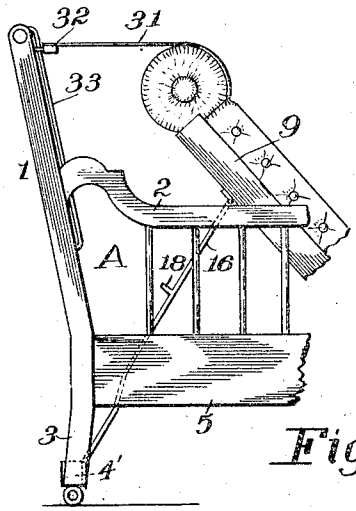


Fig. 5.

Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

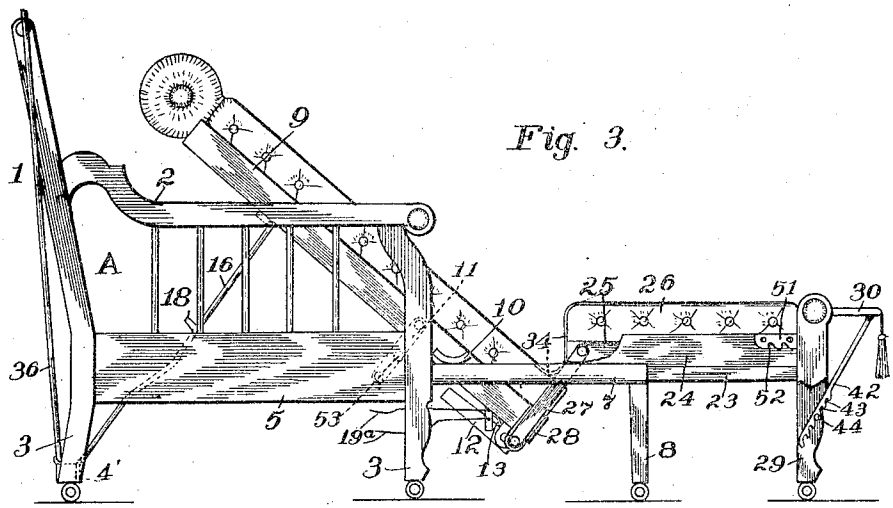
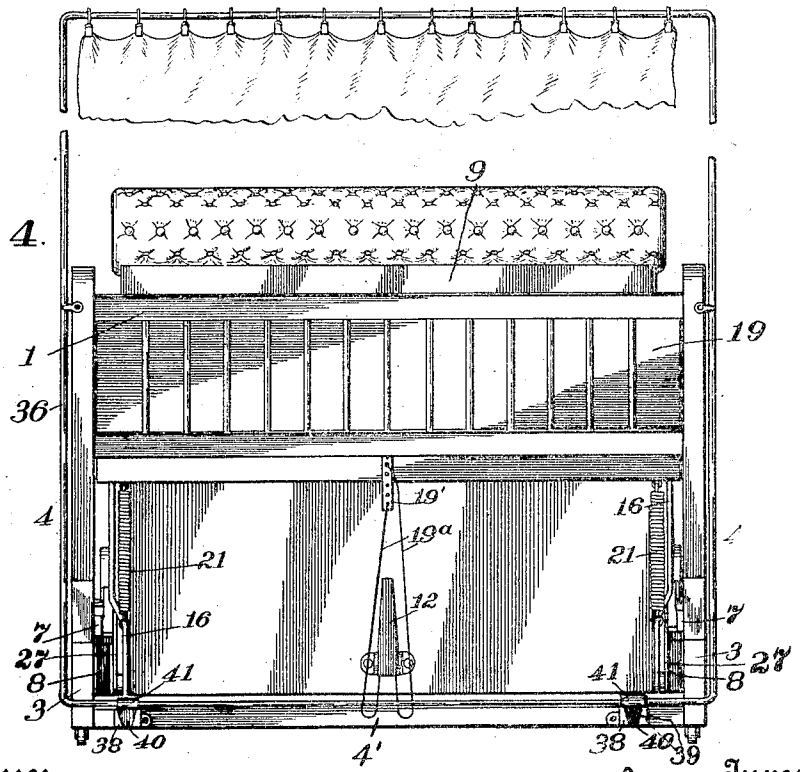


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

IDA I. MULLER, OF BATTLE CREEK, MICHIGAN.

EXTENSION SOFA-BED.

No. 862,182. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed July 7, 1903. Serial No. 164,592.

To all whom it may concern:

Be it known that I, IDA I. MULLER, a citizen of the United States, and a resident of Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and useful Improvement in Extension Sofa-Beds, of which the following is a specification.

My invention relates to an improvement in extension sofa beds and has for its objects the provision of a simple, neat and durable device of this nature which will be strong, easily operated and one which will present a good appearance when in its normal position as well as providing a bed having every convenience when extended.

Other objects are to provide a construction which when folded together will present an attractive appearing chair, sofa, divan or davenport having an improved seat and back, such an article of furniture capable of being partially extended to form a reclining seat having an inclined back for invalids permitting them to be moved without difficulty, or it can be formed into a child's crib or bed, from which there is no danger of the child falling, and when fully extended, the device constitutes a comfortable bed, the extension and other attachments being easily and quickly operated. I also provide a means coöperating with and attached to my improved extension bed for supporting the bed clothing and enabling such to be aired. The upholstered portions which serve as back and seat and also as a mattress are made removable from the frame for sanitary purposes and withal my invention is not bulky or incommodious and occupies but little wall space when closed.

My invention further consists in certain other features of construction and combinations of parts such as will be more fully described hereinafter and will be particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the sofa bed when fully extended, Fig. 2 is a view in side elevation showing the article when closed to form a sofa, chair, or davenport, Fig. 3 is a view in side elevation showing the position of the parts when the device is formed into a reclining chair, Fig. 4 is a view in rear elevation of the clothes supporting means in raised position, Fig. 5 is a detail view showing a modified form of head rest, and Figs. 6 and 7 are detailed views of the footboard supporting means, and Fig. 8 is a detailed view showing the means for retaining the foot board in upright position.

A, indicates the main frame of the invention, which frame remains stationary relative to the members which it supports. This frame comprises the usual back 1, arms 2, 2, legs 3, 3, sides 4, 4, rear bar 4′, and braces 5, 5. The sides 4, 4, are cut away, grooved or rabbeted as at 6, 6 to form ways for the movable side rails 7, 7, which are received thereon, the outer ends of the side rails being provided with legs 8, 8 sufficing for their support, the side rails 7, 7 and legs 8, 8 constituting a sliding frame inclosing the seat.

Removably supported upon the frame is the back section 9, itself comprising a frame carrying an upholstered member removably secured thereto.

A pair of curved metallic members 10, 10 secured, one on each side of the frame of the back section, bear upon the upper edges of the movable side rails 7, 7 which may be of metal if desired, upon which side rails, the members 10, 10 slide when the back section is lowered to a horizontal position or raised to a vertical position. Links 11, 11 pivotally secured to the side rails 7, 7, have their opposite ends secured to the frame of the back section 9 whereby connecting the section to the seat frame and also permitting the section to have a limited movement therefrom. The curved members 10, 10, though not centrally located with relation to the back section, form the axis of movement of the back section, the lower end of which moves in the arc of a circle upward and forward, thereby causing the upper end to move in the arc of a circle rearwardly and downwardly until the back section has assumed a horizontal position.

To the rear face of the back section is hinged a supplemental leg 12, behind which is seated a spring 13, the outer end of which bears against the leg to aid in automatically extending the same to form a support for the back section when the latter has assumed a horizontal position and prevent it from tilting downward.

When the back section 9 has assumed the horizontal position there is formed a space between the head end thereof and the back 1 of the main frame and to close this space, I provide a pillow section 19 consisting of a light frame extending approximately the entire width of the back section 9, which pillow section is hinged to the back 1 of the main frame, it being retained in folded position by means of a turn-button 20. This pillow section swings on its hinges and has its free side resting upon the head end of the back section when the latter is in horizontal position.

Secured to the rear face of the pillow section 19, is a vertically disposed bracket 19′, offset from the surface of the pillow section and having wires or other flexible means 19ª, 19ª, secured to each end thereof, these wires passing down and attached to the leg 12.

When the sofa has been extended into a bed, the pillow section 19 is allowed to fall by turning the button 20, thereby tautening one of the wires 19ª, and causing the supplemental leg to be extended to support the back section, the spring retaining it in such position. In closing up the bed to form a sofa for instance, the pillow section is first raised, which results in tautening the other of said wires to fold the leg up against the action of the spring.

To further support the rear or back section 9, I pro-

vide a pair of supporting rods 16, 16, their rear ends being pivotally and removably secured to the rear bar 4', of the main frame A, the forward ends of which rods are pivotally connected to the rear or head end of the back section. These supporting rods are bent as shown to conform to the back 1 of the main frame A and are provided with pins 18, 18 which, when the back section 9 is in horizontal position, contact therewith to prevent the head end thereof from tilting downward. It will be understood that the pins 18 with the bottom face of the head or normally upper end of the back section to prevent the latter from tilting downward. They serve as stops to prevent the further movement of the head end of the back section downwardly.

Strong springs 21, 21 are secured to the supporting rods 16, 16 and to the back 1 of the main frame A. These springs are placed under tension when the back section 9 is lowered to horizontal position and assist to prevent the downward tilting of the head end of the back section as well as aiding to close the bed into its normal or folded position to serve as a chair, sofa or other article of furniture.

The side rails 7, 7 are provided with grooves 22 which are adapted to receive and contain the ribs 23, 23 of the sliding bars 24, 24 which bars together with the end piece constitute the seat section. This seat section supports a removable frame 25 which in turn carries the upholstered seat 26 removably held therein and to the frame 25 are pivotally secured the links 27, 27, the opposite ends of which links are pivotally connected with depending arms 28, 28 secured to the side rails 7, 7. This construction causes the links to occupy an inclined position when the device is extended to form a bed and such inclined position causes the seat section to move eccentrically to the axis of the back section in the closing operation whereby to cause the back section to tilt upwardly and return to its normal position.

The seat section is provided with legs 29, 29 which extend above the frame 25 and pivotally secured between the legs is the folding foot board 30 which can be raised and locked in place to form a foot board or the side of a child's bed as shown in the drawings. This foot board when raised forms a convenient handle for extending the device when desired.

The manner of pivotally attaching the foot board to the legs is as follows: Pins 45, 45 project inwardly from each leg 29, 29, which pins are received in slots 46, 46 formed in base plates 47, 47 secured to the ends of the foot board 30, the base plates each provided with a hook 50. A dished boss 48 provided with an aperture 49 is secured to each inner face of the legs 29, 29 to receive the hooks 50, 50 of the base plates when the foot board is in its raised position. The foot board 30 may also be retained in a horizontal position by means of the supports 42, 42, the upper ends of which are hinge secured to the foot board and these supports are provided with notches 43, 43 which are received upon the pins 44, 44 located on the legs 29, 29. When the foot board is in its lowered position these supports lie beneath the frame 25.

To prevent the accidental extension or partial extension of the seat section as when the sofa is pushed from place to place over the floor or during transportation, I secure plates 51, 51 to the outer faces of the legs 29, 29 of the seat section, which plates are provided with shallow recesses 52, 52 in which are received studs 53, 53 projecting from the inner faces of the legs 3, 3 of the main frame. The retaining tendency of this construction is easily overcome by pulling outward on the seat section.

In place of the swinging pillow section 19, I may provide a web 31 of some material, one end of which is secured to the head end of the back section, the opposite end of which is provided with gromets 32 which are received and slide upon rods 33, 33 secured to the back 1 of the main frame.

The upholstered portions of the seat and back constitutes the mattress proper, but superposed thereupon is a flexible mattress 34 which connects the back and seat portions when the device is extended into a bed thus forming a bridge between the two. The object of this is to permit the back and seat members to easily coöperate in folding together, to permit them to approach each other more closely and to render the mattress more durable, the superposed flexible mattress being adapted to fold as at 35 when the seat and back are closed in normal position to permit the back section to assume its horizontal position without crowding the mattress proper which would cause it to quickly get out of shape. The fold 35 extends across the space formed between the seat and back sections when the device is formed to afford a bed of suitable length, by means of the long links 27, 27. It will also be noted that the back section does not rotate to cause the rear face to become the upper face when in horizontal position, but merely subsides, its lower end sliding forward and tilting upward, thus avoiding the necessity of upholstering the rear face as well as the front of the back section. The seat and back cushion are provided with springs in the usual manner, and provide a deeper, softer and better bed.

When converting the sofa into a child's bed all that is necessary is to raise the movable foot board 30 and when the sofa is extended into a bed to be occupied by an extremely tall person the foot board may be left in lowered position.

An approximately U-shaped clothing support 36 is removably hinged to a rear brace 4' in the following manner: A pair of tapering sockets 38, 38 are secured to the rear brace, these sockets provided with flanged apertures 39, 39 which are adapted to receive the wedge-shaped or tapering holders 40, 40, the upper ends of the holders being formed into sleeves 41, 41 the bores of which are adapted to receive the inturned ends of the resilient frame or support 36, the resiliency tending to yieldably retain the ends of the frame in the sleeves. The frame may be held in its upright position by means of turn buttons located on the back 1, and to the upper connecting piece of this frame are secured the ends of the bed clothing in any suitable manner as by means of spring clamps, as shown. Normally, this support rests against the back 1 of the main frame A, and the clothes may be hidden from view by means of a curtain. When it is desired to use the clothes in connection with the bed, the frame is simply swung down, the connecting piece lying adjacent the foot board 30 and preventing the bed clothing from being pulled up from the foot of the bed, the clothing lying spreading out over the bed in the usual manner. When the clothes frame is thrown back into upright position,

the clothes are aired and kept in much better condition than if they were packed in a drawer beneath the sofa besides being always ready for use on the instant.

It is evident that many changes might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention, and hence I do not desire to limit myself to the exact construction herein set forth, but consider myself entitled to all such variations as come within the spirit and scope of my invention, such as changing the size and style of the frames.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In an article of furniture, the combination with a frame, of back and seat sections, the back section movably fulcrumed to the frame and a link pivotally connecting the back and seat sections, that end of the link secured to the back section adapted to project beneath the fulcrum of the back section.

2. As an article of manufacture, the combination with a frame, of sliding rails telescoping thereinto, a back section, a fulcrum on the back section engaging the rails for the support of the back section, a seat section connected to the back section, the back section resting upon the sliding rails when in extended position.

3. The combination in a sofa bed with a frame having a tilting back section, of a web of flexible material, one end of which is secured to the head end of the back section, the opposite end of the flexible material being movably secured to the frame.

4. An article of manufacture comprising a main frame, telescopic members carried thereby, back and seat sections mounted on the members, a supporting rod pivotally secured to the back section and to the frame respectively, and a pin carried by the supporting rod intermediate the ends of the rod.

5. An article of furniture comprising a main frame, telescoping members received therein, back and seat sections carried by the telescoping members, and springs connecting the back section and the main frame.

6. An article of furniture comprising a main frame, telescoping members received therein, back and seat sections carried by the telescoping members, an auxiliary leg hinged to the back section and means for extending and folding the leg.

7. An article of furniture comprising a main frame, a plurality of sliding members telescoping thereinto, a back section carried by one of the members, a seat section carried by the other of said frames, and curved stationary runners carried by the back section and bearing upon the sliding member and a link connecting the back section and sliding member.

8. An article of furniture, comprising a main frame, a plurality of sliding frames telescoping thereinto, a back section carried by one of the sliding frames, links connecting the back section and its sliding frame, the back section sliding on its frame, a depending arm carried by the back section, a seat section supported on the remaining sliding frame, and a link connecting the back and seat sections.

9. An article of manufacture, comprising a main frame, a plurality of sliding frames telescoping thereinto, back and seat sections carried by the sliding frames, a flexible web secured at one end to the head end of the back section, rods secured to the main frame the opposite end of the flexible web movably secured to the rods.

10. An article of manufacture comprising a main frame, a plurality of sliding frames telescoping thereinto, back and seat sections supported on the sliding frames, the frames when extended causing a space between the head end of the back section and the back of the main frame and flexible folding means for bridging this space.

11. An extensible sofa bed comprising a main frame provided with legs, and studs on the legs, telescoping members received within the main frame, a member provided with means removably engaging the studs when the sections are telescoped together to prevent the accidental extension of the sofa to a bed.

12. An extensible sofa bed comprising a main frame provided with legs, a stud on a leg, a plurality of members telescoping within the main frame, a member provided with a plate having a recess formed therein, the recess adapted to releasably receive the stud to retain the telescoping members against accidental extension.

13. An extensible sofa bed comprising a main frame, a plurality of members telescopically received therein, back and seat sections carried by the members, a supplemental leg pivotally secured to one of the sections, means for retaining the leg in extended position, a suitably secured apertured plate and flexible means extending between the plate and leg to fold or extend the leg.

14. As an article of manufacture, a sofa bed comprising a main frame and back and seat sections, telescopically receivable in the main frame a rod movably secured to the back section intermediate its ends, the opposite end of the rod being pivotally secured to the main frame, and resilient means connected to and extending between the rod and the main frame to yieldingly retain the back section in upright position.

15. An extensible sofa bed comprising a main frame, a plurality of telescopic members each member supported and sliding upon the member preceding, a back section supported upon the innermost sliding member, a seat section supported upon the sliding member next adjacent, a plurality of pivotally supported means connecting the head section with the main frame and the telescopic member upon which it is supported for retaining the head section in reclining position.

16. A sofa bed provided with a main frame, telescopic members connected therewith, legs carried by one of the telescopic members, a foot board located between the legs, an apertured dished disk secured to one of the legs, a slotted hanger carried by the foot board, and pivotally connected with the leg and a hook on the hanger receivable in the apertured disk.

17. An article of the character described provided with movably supporting legs, a foot board, a recessed member stationarily secured to a leg, a slotted hanger pivotally supported relative to the recessed member and stationarily secured to the foot board, the hanger having a loose connection relative to the recessed member and a holding means carried by the foot board and adapted to engage the recessed member.

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

IDA I. MULLER.

Witnesses:
W. LEWIS SIMONS,
NELLIE L. SIMONS.