July 3, 1962 R. T. HOLTZCLAW 3,041,635

SOFA-BED

Filed June 20, 1960 2 Sheets-Sheet 1

FIG. 1

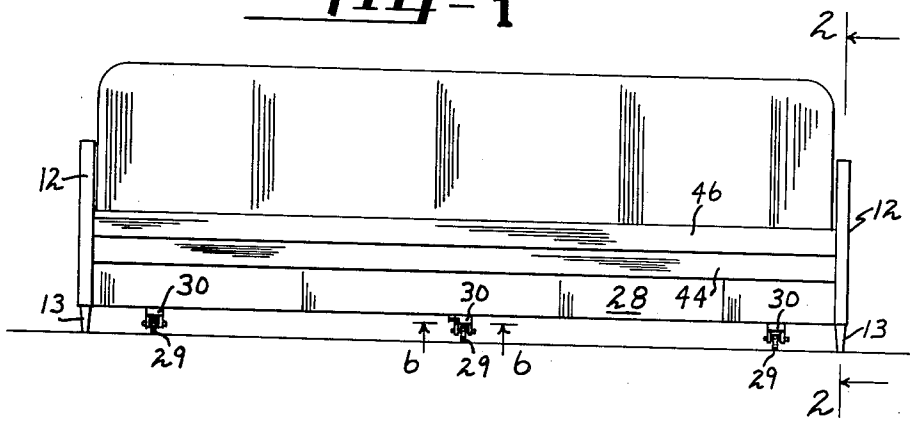


FIG. 3

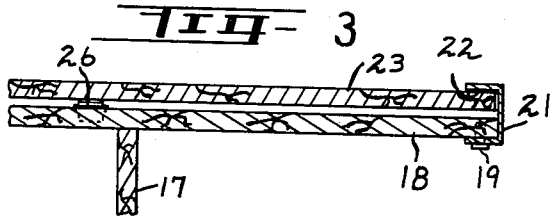


FIG. 2

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July 3, 1962 R. T. HOLTZCLAW 3,041,635

SOFA-BED

Filed June 20, 1960

2 Sheets-Sheet 2

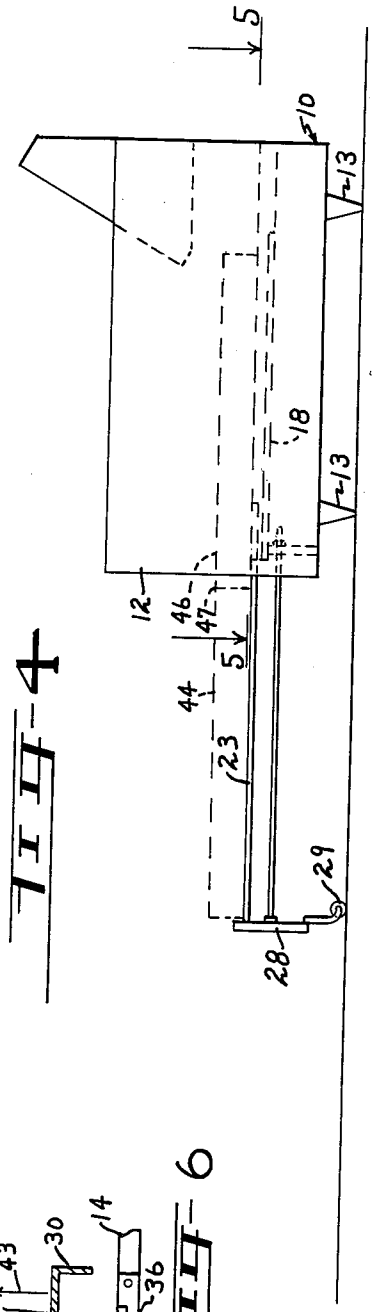


FIG. 4

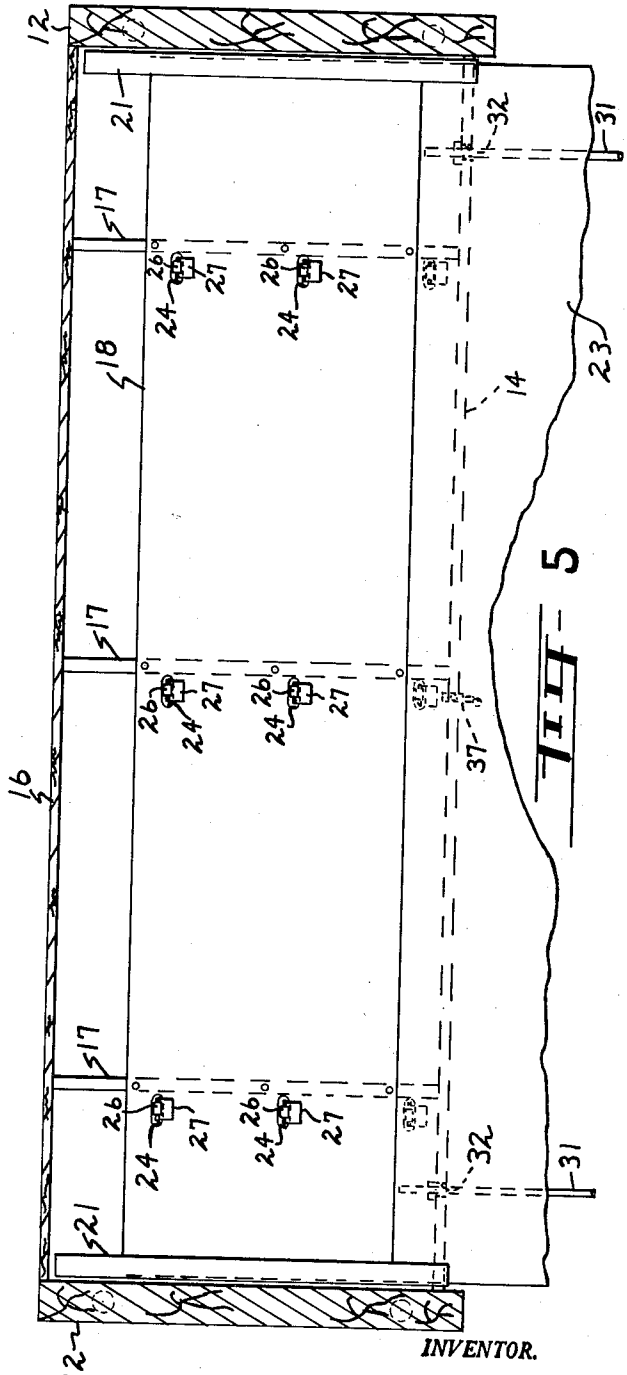


FIG. 5

FIG. 6

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3,041,635

SOFA-BED

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1 Claim. (Cl. 5—18)

This invention relates to a sofa-bed and has for an object the provision of such a sofa-bed which may be easily moved from a position to support seat cushions in the usual manner to an extended or lateral position whereby the cushions are all supported in the same plane to form a bed.

Another object of my invention is to provide a sofa-bed which shall include a relatively flat, stationary cushion supporting section carried by a supporting frame and a movable cushion supporting section mounted over the stationary cushion supporting section and adapted for movement outwardly and laterally of the stationary cushion supporting section whereby the movable cushion supporting section is adapted to support a cushion while positioned over the stationary cushion supporting section and both the stationary and movable cushion supporting sections are adapted to support cushions while the movable, cushion supporting section is moved outwardly and laterally of the stationary cushion supporting section.

Another object of my invention is to provide a sofa-bed of the character designated in which the movable cushion supporting section moves freely relatively to the stationary cushion supporting section and improved means is provided for guiding the movement of the movable cushion supporting section whereby it may be moved to selected positions with a minimum of effort and with a minimum of wear on the moving parts of the sofa-bed.

A further object of my invention is to provide improved means for limiting outward and lateral movement of the movable cushion supporting section relative to the stationary cushion supporting section whereby the cushion supporting sections are automatically positioned at the correct location for supporting cushions to make a bed.

A still further object of my invention is to provide improved means for restraining outward movement of the movable cushion supporting section while the device is being used as a sofa.

Heretofore in the art to which my invention relates, various forms of sofa-beds have been proposed. However, so far as I am aware, such beds have been extremely heavy, thus increasing handling and shipping cost, and have required complicated mechanism which not only increases the cost of production of the sofa bed, but provides a hazard in that the fingers of the operator are easily damaged when they are inserted in the moving parts of the sofa-bed as the bed is moved from the sofa position to the extended bed-forming position. To overcome the above and other difficulties, I provide a relatively light-weight sofa-bed which requires a minimum of moving parts, such as linkages and the like.

A sofa-bed embodying features of my inventon is illustrated in the accompanying drawings, forming a part of this application, in which:

FIG. 1 is a front elevational view showing the sofa-bed in the sofa-forming position;

FIG. 2 is an enlarged sectional view taken generally along the line 2—2 of FIG. 1 partly broken away and in section;

FIG. 3 is an enlarged, fragmental view taken generally along the line 3—3 of FIG. 2;

FIG. 4 is an end view of the sofa-bed drawn to a slightly larger scale than the sofa-bed shown in FIG. 1 and showing the movable cushion supporting section moved to extended position to form a bed;

FIG. 5 is a fragmental, sectional view taken generally along the line 5—5 of FIG. 4; and,

FIG. 6 is an enlarged detail view taken generally along the line 6—6 of FIG. 1 and showing the latch means for limiting outward movement of the movable cushion supporting section relative to the stationary cushion supporting section.

Referring now to the drawings for a better understanding of my invention, I show a supporting frame indicated generally at 10 which comprises a bottom section 11 connected to arm members 12. The supporting frame 10 is mounted on suitable leg members 13, as shown. An elongated member 14 is secured to the forward or outer portion of the supporting frame 10. Extending between the elongated member 14 and the back wall 16 of the supporting frame 10 are suitable brace members 17.

Secured to and supported by the brace members 17 and the elongated member 14 is a stationary cushion supporting section 18, which is preferably formed of a sheet material, such as plywood or the like. Secured to the end edges of the cushion supporting section 18, by any suitable means, such as by screws 19, are channel-shaped guideways 21. As shown in FIG. 3, the channel-shaped guideways 21 are substantially wider than the thickness of the cushion supporting section 18 whereby a recess 22 is provided between the upper flange of the channel-shaped member 21 and the upper surface of the cushion supporting section 18.

Mounted above the cushion supporting section 18 is a relatively flat cushion supporting section 23, which may also be formed of plywood or the like. The end edges of the cushion supporting section 23 extend inwardly of the recesses 22 whereby lateral movement of the cushion supporting section 23 is limited.

As shown in FIG. 5, a plurality of openings 24 are provided in the stationary cushion supporting section 18 for receiving rollers 26 carried by brackets 27. The brackets 27 are secured to the cushion supporting section 18 whereby the rollers 26 engage the under surface of the movable, cushion supporting section 23, thus permitting easy movement of the movable cushion supporting section relative to the stationary cushion supporting section.

Secured to the outer side of the cushion supporting section 23 is an elongated member 28 which extends generally parallel to the elongated support member 14, as shown in FIG. 2. Depending support members, such as channel members 30, support caster rollers 29. The channel members 30 are carried by the lower edges of the elongated member 28, as shown.

Secured to the back side of the elongated member 28 are rearwardly extending rod-like members 31. Suitable openings 32 are provided in the elongated member 14 for slidably receiving the rod-like members 31 whereby the elongated member 28 together with the movable cushion supporting section 23 may be moved outwardly and laterally of the supporting frame 10 and the stationary cushion supporting section 18.

Outward movement of the elongated member 28 and the movable cushion supporting section 23 is limited by suitable stop members, such as bolts 33, which are in threaded engagement with threaded sections 34 provided at the free ends of the rod-like members. That is, upon outward movement of the rod-like members 31, the nuts 33 engage the elongated member 14 and thereby limit outward movement of the rod-like members. By providing a threaded connection between the stop members 33 and the rod-like members 31, the distance that the movable cushion supporting section 23 moves outwardly and laterally of the cushion supporting section 18 may be adjusted. Preferably, the cushion supporting section 23 overlaps the cushion supporting section 18 when the movable cushion supporting section 23 is moved to fully ex-

tended position, as shown in FIGS. 4 and 5. In view of the fact that the rod-like members **31** extend parallel to the guideways **21**, they also serve as guide members.

Pivotally mounted on the elongated member **14** adjacent the center support **30**, by a suitable pin **36**, is a latch member **37**. A notch **38** is provided in the latch member **37** in position to engage the support member **30**, as shown in FIG. 6. A tension spring **39** connects the arm **37** to the member **14** whereby the arm **37** is urged toward the support member **30**. A suitable handle or knob **41** is mounted adjacent the free end of the latch member **37** whereby it may be moved out of engagement with the support member **30** when the movable cushion supporting section **23** is to be moved to extended position. That is, to release the latch **37**, it is moved in the direction of the arrow **42** whereby the support member **30** and the movable cushion supporting section **23** are free to move forward in the direction of the arrow **43**.

The cushions for my improved sofa-bed are preferably in the form of separate cushions **44** and **46** which are hingedly connected to each other as at **47** and are formed of a suitable resilient material such as foam rubber or the like. That is, the outer covering or fabric for the two cushion sections **44** and **46** are connected to each other to form a longitudinally extending hinge portion **47** whereby the cushion section **46** may be folded over the cushion section **44**, as shown in FIG. 2, to form a sofa. On the other hand, when the cushions **44** and **46** are unfolded, they assume the position shown in FIG. 4. While I have shown the cushions as being hingedly connected to each other, it will be apparent that the cushions may be employed separately. By employing the cushion section **44** beneath the cushion section **46** while the device is employed as a sofa, I eliminate entirely the necessity of providing springs for the sofa. That is, the lower cushion section **44** serves the same function as springs.

From the foregoing description, the operation of my improved sofa-bed will be readily understood. To use the sofa-bed as a sofa, the device assumes the position shown in FIGS. 1 and 2 wherein the movable cushion supporting section **23** is above the cushion supporting section **18** and supports both cushions **44** and **46**.

To move the movable cushion supporting section **23** to extended position to form a bed, the latch **37** is moved in the direction of the arrow **42** whereby the support member **30** and the movable cushion supporting section **23** are adapted for outward and lateral movement relative to the supporting frame and the stationary cushion supporting section **18**. As the movable cushion supporting section **23** is moved outwardly, the rollers **26** roll relative to the under surface of the cushion supporting section **23** and the end edges of the cushion supporting section **23** move freely within the guideways **21**. As the movable cushion supporting section **23** reaches its proper outward position, the nuts **33** engage the elongated member **14**, thereby limiting any further outward movement of the movable cushion supporting section. The cushion **46** is then unfolded whereby it lies on top of the stationary cushion supporting section **18**, as shown in FIGS. 4 and 5 to thus form a bed.

To return the movable cushion supporting section **23** to the sofa position, the cushion **46** is folded over the cushion **44**, as shown in FIG. 2, and the elongated member **28** together with the movable cushion supporting section **23** are moved inwardly to the position shown in FIG. 2 whereby the device forms a sofa.

From the foregoing, it will be seen that I have devised an improved sofa bed which is extremely simple of construction, economical of manufacture and one which may be easily manipulated with a minimum of effort and a minimum of instructions. By providing a movable cushion supporting section which has no complicated linkages and the like, I eliminate almost entirely the possibility of the user being injured as the sofa-bed is moved from the sofa position to the extended bed-forming position.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claim.

What I claim is:

A sofa-bed comprising a supporting frame, a first flat and continuous cushion supporting section carried by said supporting frame, channel-shaped members mounted at the sides of said first cushion supporting section with the lowermost flanges thereof extending inwardly beneath and secured to said first cushion supporting section and the uppermost flanges thereof extending inwardly and spaced above said first cushion supporting section to define guideways between the upper surface of said first cushion supporting section and said uppermost flanges, a second flat and continuous cushion supporting section mounted above said first cushion supporting section with the edges at the side thereof riding in said guideways and adapted for outward movement from a position over said first cushion supporting section to a lateral position relative thereto to position said second cushion supporting section for supporting a cushion while it is positioned over said first cushion supporting section and to position both cushion supporting sections for supporting cushions when said second cushion supporting section is moved to said lateral position, a plurality of spaced apart rollers carried by said first cushion supporting section and projection upwardly therefrom in position to engage the under surface of said second cushion supporting section whereby said second cushion supporting section is supported at spaced intervals and is adapted for free movement relative to said first cushion supporting section, and depending support members carried by the outer portion of said second cushion supporting section.

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