

April 28, 1936.

M. FOX

2,038,832

CONVERTIBLE SOFA AND BED

Filed Jan. 7, 1935

2 Sheets-Sheet 1

Fig. 1.

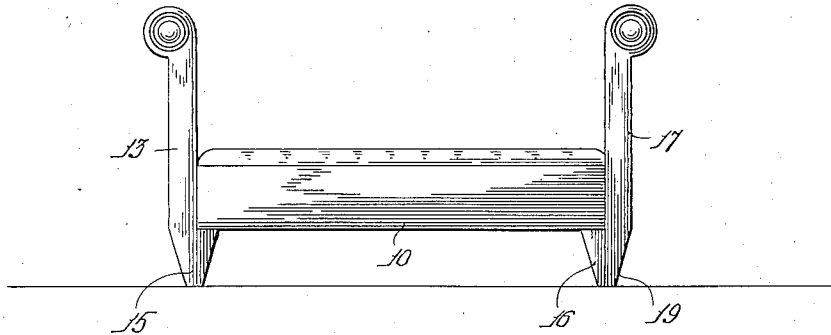


Fig. 2.

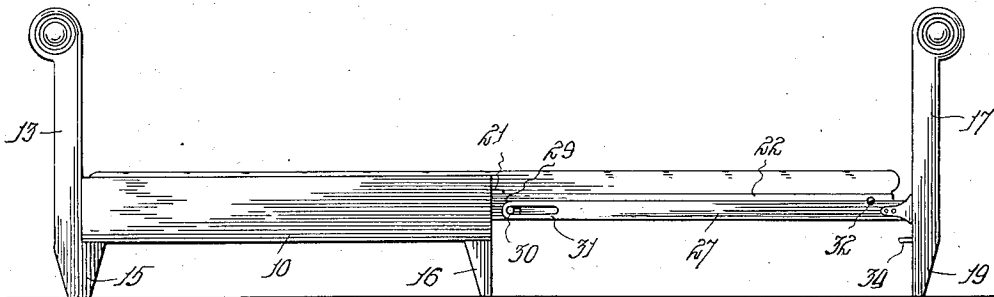
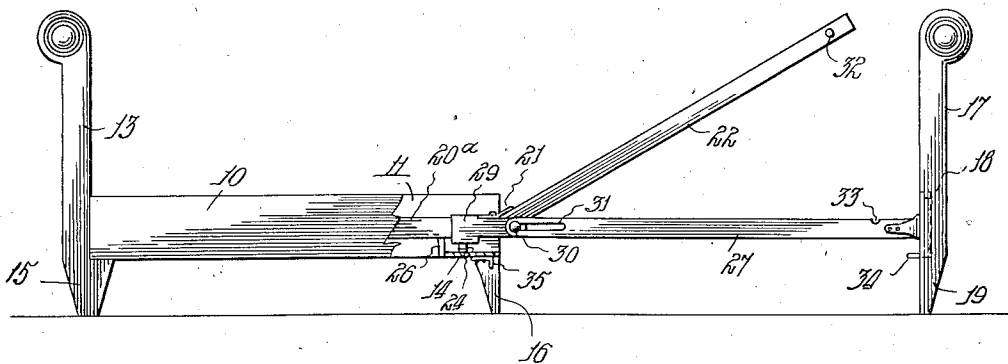


Fig. 3.



Inventor:

Martin Fox.

By *W. Conrad Peall*
Attorney.

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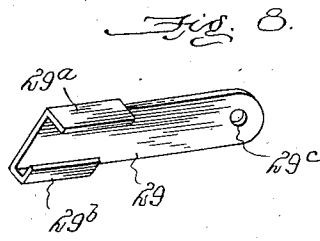
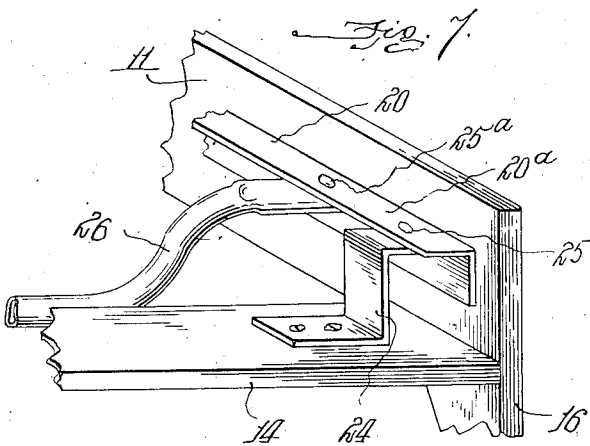
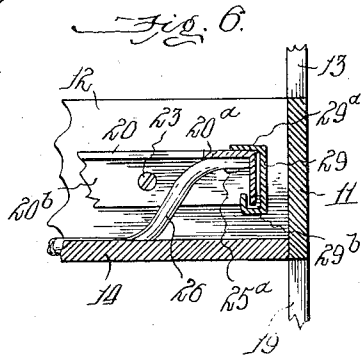
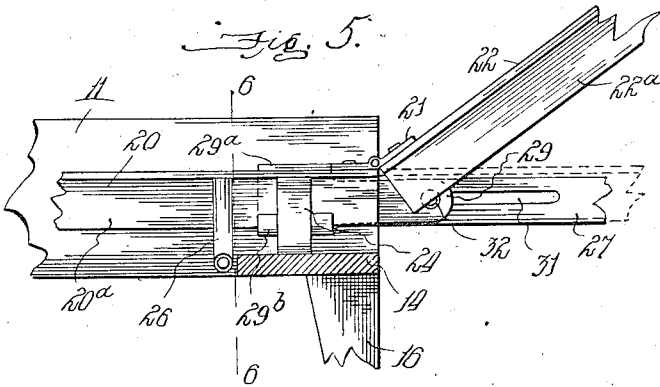
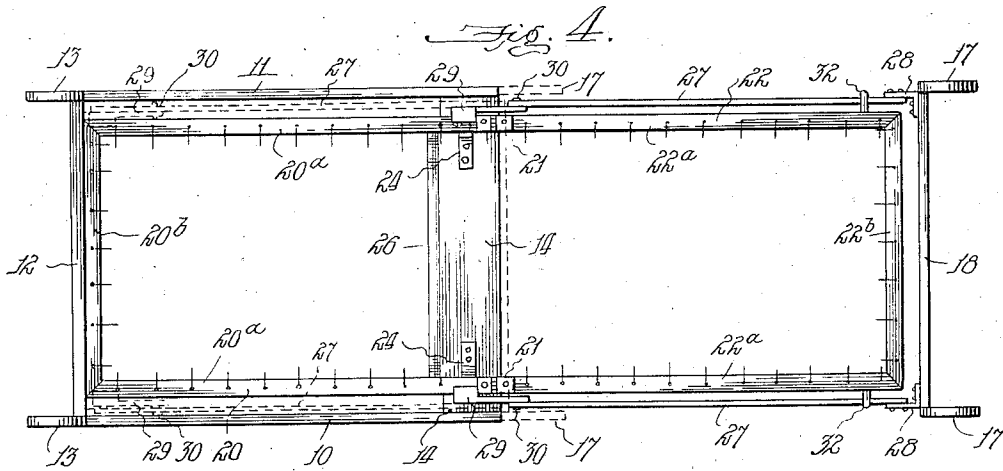
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2 Sheets-Sheet 2



Inventor

Martin Fox,
Grace & Pease
Attorneys

UNITED STATES PATENT OFFICE

2,038,832

CONVERTIBLE SOFA AND BED

Martin Fox, Chicago, Ill., assignor to The Seng
Company, Chicago, Ill.

Application January 7, 1935, Serial No. 749

7 Claims. (Cl. 5—17)

My invention is an improvement in sofas or settees of that special type which is convertible to a bed by extending a slidable section beyond one end thereof to increase the length of the sofa, the width of the extended article of furniture corresponding with that of a single bed.

In the present instance my invention contemplates the provision of a small sofa or settee, commonly known as a love-seat, in which a slidable section forming a part of the bed frame is normally housed within the main supporting frame and forms a part of the seat bottom thereof, to support a sectional pad or folded mattress providing the upholstered part of the seat when the article of furniture is being used as a sofa and to also provide the mattress when the structure is extended to bed form.

A further object of my invention is to provide a convertible sofa and bed in which the slidable section, forming a part of the bed frame, is connected to the seat structure in such a manner that said slidable section can be extended its full length beyond one end of the seat frame, whereby a comparatively short sofa or love-seat is provided convertible to a bed of a standard length.

My invention further contemplates an economical arrangement for a convertible sofa and bed which includes a dual seat-bottom frame or a folding bed bottom frame constructed of angle irons, with the two parts thereof hinged together and employed in connection with the seat supporting frame and associated slidable bed frame section, the dual seat and bed bottom frame when folded forming a reinforced seat bottom for the article of furniture in its use as a sofa or love-seat and a bed bottom when the structure is converted to bed form.

With these principal objects in view my invention consists in the construction of the dual element forming the seat and bed bottoms, and in the combination therewith of a slidable bed frame section including means for connecting the latter to the stationary part of the seat and bed bottom, as hereinafter described and particularly set forth in the claims.

In the drawings:

Figure 1 is a front elevation illustrating the structure arranged in the form of a sofa or love-seat.

Fig. 2 is a similar view with the parts arranged in bed form.

Fig. 3 is a view like Fig. 2 with the upholstered seat or mattress removed and part of the seat

frame broken away to show the hinge and slidable connections between the movable parts.

Fig. 4 is a plan view of the article of furniture in bed form without the mattress.

Fig. 5 is an enlarged detail sectional view showing the means for connecting the movable parts, including the slidable section of the bed frame and swinging section of the bed bottom.

Fig. 6 is a sectional view on the line 6—6 of Fig. 5.

Fig. 7 is a perspective view of a corner of the main frame, the slidable and swinging sections being removed, and

Fig. 8 is a detail perspective view of the slide connecting the slidable section of the bed frame to the stationary part of the seat and bed bottom.

In carrying out my invention I employ any conventional construction or type of main frame which will present a sofa or love seat of attractive appearance, it being essential however that one end thereof be detachable and movable with the extension section to form one of the end pieces of the bed as well as an end piece of the sofa. As illustrated in the drawings the main frame is in the form of a box-like seat frame with front and rear sides 10, 11, permanently connected at one end by a crosspiece 12 with corner posts 13, 13, and at the other end by a narrow bottom board 14, the corner posts being extended to form feet 15 at one end of the frame while the other end is supported by feet 16, 16. The structure is completed as a sofa frame by a movable end piece comprising corner posts 17, 17 connected by a crosspiece 18, and this movable end piece is a part of the extensible bed frame section, hereinafter described, with the lower ends of the corner posts shaped to form feet 19 cooperating with the feet 16 of the main frame so as to match the feet 15 at the other end of the sofa.

Within the main frame there is secured a rectangular frame 20, forming one part of the combined seat and bed bottom, said frame being preferably constructed of angle bars with side rails 20a, 20a and a cross rail 20b at one end, while the other ends of said side rails are connected by hinges 21, 21 to the contiguous ends of a similar seat and bed bottom frame 22, consisting of opposite side rails 22a, 22a and cross rail 22b. The frame 20 upon which the frame 22 is folded is permanently attached at one end to the crosspiece 12 of the main frame by screws 23 (Fig. 6) and at its other end is supported on and attached to angle brackets 24, 24 mounted on the crosspiece 14, it being noted by reference

to Fig. 7 that the ends of the side rails or angle bars of this frame are securely attached to the angle brackets by rivets 25, 25, so that the depending member of each side bar or rail will be spaced from the angle bracket and a short distance from the adjoining side of the sofa frame for the operation of the slidable element (hereinafter described) connecting the extensible section of the bed frame to the stationary section. This arrangement provides the supporting means for a dual seat and bed bottom frame adapted to be unfolded for the purpose of forming the bed bottom, and as it is intended to use any conventional construction or type of wire fabric for the seat and bed bottom, with the usual helical springs (not shown), there is considerable tension on the bed frame laterally and consequently I provide a tubular brace 26 extending between the side rails of the stationary section of this frame at the inner side of the brackets 24, said tubular cross brace being rigidly secured to the opposite side rails of the stationary section of the bed frame by rivets 25a.

The extensible sliding section of the bed frame, which is adapted to support the folding part of the combined seat and bed bottom, comprises opposite side rails 27 connected at their outer ends to brackets 28, 28 fastened to the corner posts 17, 17 of the movable end piece of the sofa and at their inner ends by slides 29, 29 to the angle bars 20a, 20a of the stationary section of the dual seat and bed bottom, the aforementioned slides and side rails of the extensible section of the bed frame being disposed at the outer sides of the dual seat and bed bottom frames to travel in the space between the side rails of the stationary section of said frames and side pieces of the sofa.

The slides are of a particular construction to travel on the angle bars 20a, for which purpose each slide is provided with a straight flange 29a at its upper edge, overlying the upper member of said angle bar, and with an outwardly and upwardly turned flange 29b at its lower edge to receive the depending member of said angle bar thereby insuring positive sliding engagement. The side rails 27 of the extensible section of the bed frame are connected to the outer ends of these slides by pins 30, and in order to provide for the desired extraordinary extension of this section the pin connecting each slide engages a hole 29c in the slide and a horizontal slot 31 in the side rail 27; that is to say, by this arrangement the side rails of the bed frame section may be of substantially the same length as the side pieces of the seat frame, and in the closing operation of this bed frame section the inner ends of the side rails thereof move on the slides or connecting pins 30 the full length of the slots so as to extend approximately to the crosspiece 12 of the main frame (see dotted lines, Fig. 4). Conversely when this bed frame section is extended to its fullest extent it is entirely beyond the end of the seat frame (see Fig. 4) with its inner end firmly supported by the projecting ends of the slides, thus providing a bed frame of a standard length and a comparatively short sofa or love-seat. When the slidable bed frame section is extended it receives the folding section of the hinged bed bottom, and for supporting the outer or free end of this folding section on the bed frame within the slidable section thereof it is provided with projecting pins 32 seating in corresponding recesses 33 in the side rails 27.

The particular construction of the extensible bed frame section and its slidable connection with the stationary seat bottom frame, including the folding part of the bed bottom, provides metal parts for a convertible sofa and bed of simple and economical construction, durable in use, and which may be easily manipulated in converting the sofa or love-seat to bed form, and vice versa. As will be seen the parts are locked in extended position or bed form by the engagement of the pins 32 in the recesses 33, and in order to lock the extensible bed frame section in place when the article of furniture is being used as a sofa or love-seat any suitable form of catch device may be employed, one member, as 34, of which is secured to the posts 17 of the movable end piece and the other member, 35, attached to the under side of the bottom board 14 of the seat frame. As no claim is made to this catch or locking device, per se, it is not shown in detail, it being understood however that one of the members, 34 or 35, may be in the form of spring jaws engaging the other member, or one of the conventional forms of friction catches for holding the slidable section closed and requiring a little force to open and close it.

From the foregoing description in connection with the drawings it will be readily seen that the construction provides a comparatively short sofa in the form of a love-seat, as illustrated in Fig. 1, adapted for day use, and that by extending the bed frame section it will serve to support the folding section of the bed bottom so that the pad or upholstered portion of the seat, which is removed in the operation of converting the article of furniture from a seat to a bed, is unfolded and serves as the mattress for the bed, illustrated in Fig. 2. When the article of furniture is used as a sofa or love-seat it is placed near a wall, and as the seat is a little wider than usual for a sofa, pillows may be used to form a back for the sofa or love-seat.

I claim:—

1. A convertible sofa and bed comprising a main seat frame, a foldable seat and bed bottom frame the sections of which are hinged together and include a lower rectangular section made up of longitudinal and transverse angle bars fixedly mounted within the main frame, the longitudinal angle bars being spaced from said main frame, together with a slidable bed frame section for supporting the folding section of the seat and bed bottom frame, said bed frame section including side rails, slides connected to the side rails and in slidable engagement with the outer sides of the longitudinal angle bars of the aforementioned lower fixed section of the seat and bed bottom frame to position the foldable section thereof within said side rails, and means for supporting the foldable section of the seat and bed bottom frame within the side rails of the slidable bed frame section in the extended position of the parts.

2. A convertible sofa and bed comprising a main seat frame, a foldable seat and bed bottom frame the sections of which are hinged together and include a lower rectangular section made up of longitudinal and transverse angle bars fixedly mounted within the main frame, the longitudinal angle bars being spaced from said main frame, together with a slidable bed frame section for supporting the folding section of the seat and bed bottom frame, said bed frame section including side rails, slides connected to the side rails and in slidable engagement with the

outer sides of the longitudinal angle bars of the
 5 aforementioned lower fixed section of the seat
 and bed bottom frame to position the foldable
 section thereof within said side rails, project-
 ing pins on the foldable section of the seat and
 bed bottom frame engaging the side rails of the
 10 slidable bed frame section in the extended posi-
 tion of the parts, and means for locking the slid-
 able bed bottom section to the main seat frame
 in closed position.

3. A convertible sofa and bed comprising a
 main seat frame including side pieces and a
 crosspiece at one end thereof, supporting means
 at the other end of said frame, and a folding
 15 seat and bed bottom frame in two sections hinged
 together and made up of angle bars, one of the
 sections being secured at one end to the cross-
 piece of the main frame and at the other end to
 the aforesaid supporting means; together with a
 20 slidable bed frame extension adapted to support
 the folding section of the seat and bed bottom
 frame, and slides connecting the bed frame ex-
 tension to that section of the seat and bed bot-
 tom frame which is secured within the main
 25 frame.

4. A convertible sofa and bed comprising a
 main seat frame including side pieces and a
 crosspiece at one end thereof, supporting means
 at the other end of said frame, a folding seat
 and bed bottom frame in two sections hinged to-
 30 gether, each section consisting of angle bars
 forming the side rails and an angle bar connect-
 ing said side rails at their outer ends, one of the
 sections being secured at one end to the cross-
 piece of the main frame and at the other end to
 35 the aforementioned supporting means, a slidable
 bed frame section for supporting the foldable
 section of the seat and bed bottom frame in ex-
 tended position, said bed frame section having
 40 side rails with longitudinal slots at the inner ends
 thereof, and slides in engagement with the side
 rails of the stationary seat and bottom section
 and connected in the slots in the side rails of
 the bed frame section for further extension of
 45 the latter with relation to the seat bottom sec-
 tion to which it is connected for sliding move-
 ment.

5. A convertible sofa and bed comprising a
 main seat frame including side pieces and cross-
 50 pieces at opposite ends thereof, a folding seat
 and bed bottom frame in two sections hinged
 together, each section consisting of angle bars
 forming the side rails and an angle bar con-

necting said side rails at their outer ends, one
 of the sections being secured at one end to one
 of the crosspieces of the main frame and at the
 other end to supporting means on the other
 5 crosspiece of said main frame, with the depend-
 ing vertical member of each angle bar of said
 section spaced from the supporting means and
 adjacent side of the main frame, a brace con-
 10 necting the side rails of the stationary seat sec-
 tion at the outer ends thereof, a slidable bed
 frame section for supporting the foldable sec-
 tion of the seat and bed bottom frame in ex-
 tended position, said slidable section having side
 rails with longitudinal slots at the inner ends
 15 thereof, and slides in sliding engagement with
 the side rails of the stationary bed frame sec-
 tion and connected in the slots in the side rails
 of the bed frame section for further extension
 of the latter with relation to the seat bottom sec-
 20 tion to which it is connected.

6. Metal parts for a convertible sofa and bed
 comprising a folding seat and bed bottom frame
 of two sections each made up of angle bars at
 the sides and ends of said frame, the angle bars
 at the sides of the folding sections being hinged
 25 together at their inner ends and one of the sec-
 tions braced at the hinge joint, slides engaging
 the angle bars at the sides of one of the sec-
 tions for sliding movement thereon, and side
 rails connected to the slides to provide a slid-
 30 able bed bottom section in association with the
 folding seat and bed bottom frame, said side
 rails having slots at their inner ends through
 which the connections with the slides pass for
 movement of the rails on the slides.

7. Metal parts for a convertible sofa and bed
 comprising a folding seat and bed bottom frame
 of two sections each made up of angle bars at
 the sides and ends of said frame, the angle bars
 at the sides of the folding sections being hinged
 40 together at their inner ends and one of the sec-
 tions braced at the hinge joint, slides engaging
 the angle bars at the sides of one of the sec-
 tions for sliding movement thereon, said slides each
 having a lateral flange at its upper end to travel
 45 on the horizontal member of the companion an-
 gle bar and an upturned flange at its lower end
 to receive the lower edge of the depending mem-
 ber of said angle bar, and side rails connected
 to the slides to provide a slidable bed bottom
 50 section in association with the folding seat and
 bed bottom frame.

MARTIN FOX.