July 14, 1925.

1,545,883

R. COOPERSMITH

SOFA BED

Filed April 17, 1924

2 Sheets-Sheet 1

Fig. 1.

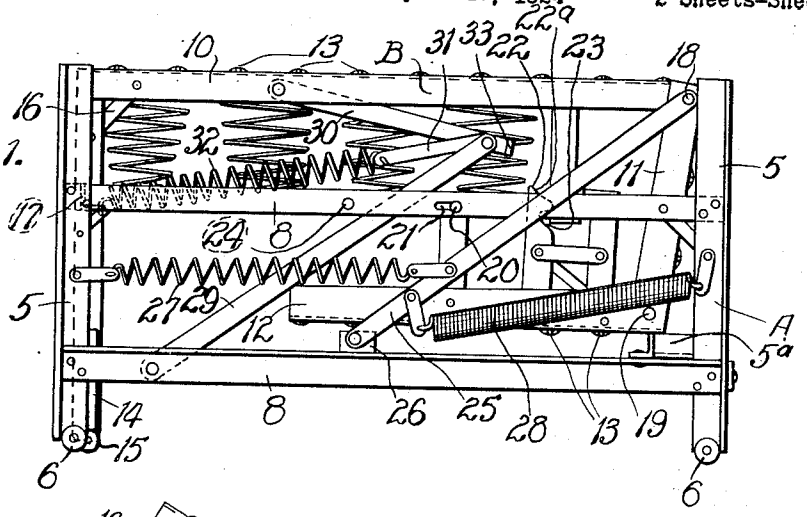
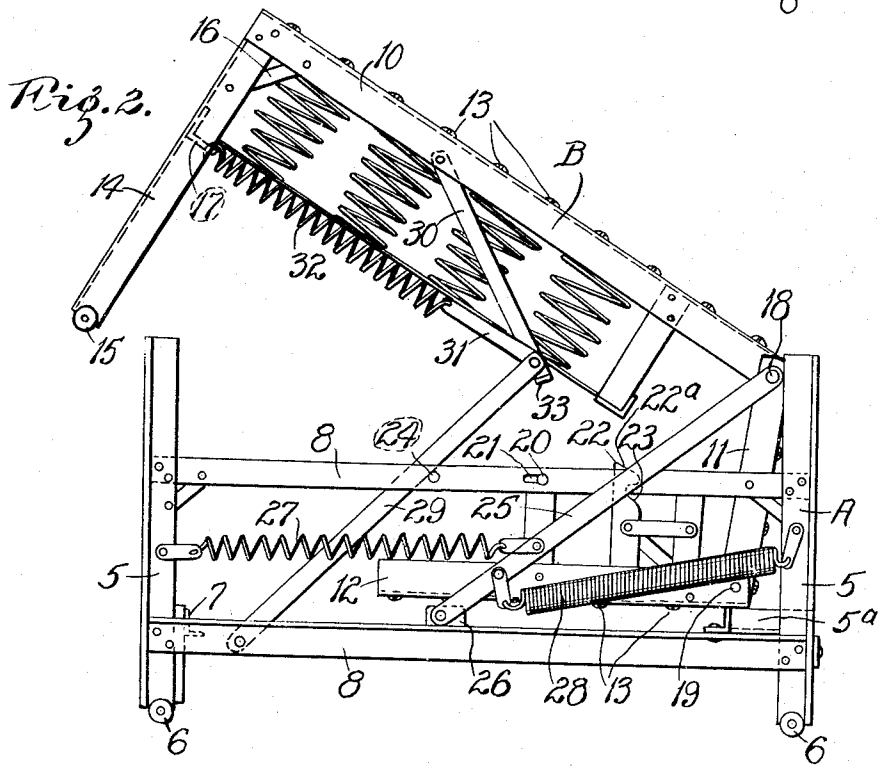



Fig. 2.




Inventor:
Rudolph Coopersmith,
by Carr & Carr,
his Attorneys.

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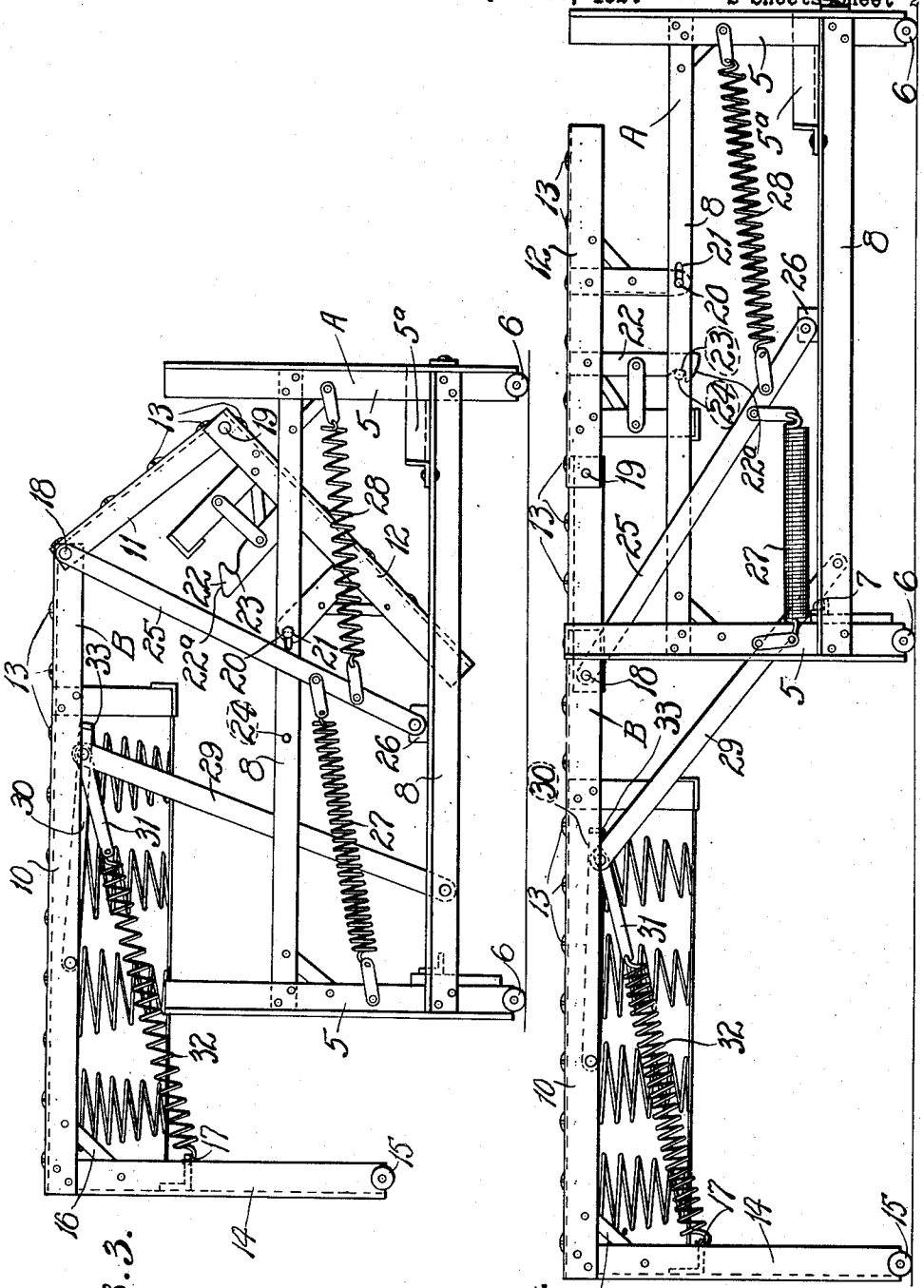


Fig. 3.



Fig. 4.

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Patented July 14, 1925. 1,545,883

# UNITED STATES PATENT OFFICE.

RUDOLPH COOPERSMITH, OF ST. LOUIS, MISSOURI.

## SOFA BED.

Application filed April 17, 1924. Serial No. 707,076.

*To all whom it may concern:*

Be it known that I, RUDOLPH COOPERSMITH, a citizen of the United States, and a resident of the city of St. Louis, in the State of Missouri, have invented a new and useful Improvement in Sofa Beds, of which the following is a specification.

This invention relates to sofa-beds of the couch type.

It has for its principal object to produce a strong and durable light-weight sofa-bed of simple and compact construction which is easily operated and will not accidentally close when opened as a bed. Another object is to provide ample and easily accessible stowage space for bed accessories, such as bed clothing and pillows.

The invention consists in the parts and in the combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is an end view of a sofa-bed embodying my invention,

Fig. 2 is an end view, showing the end section of the folding bed frame swung upward to permit bed clothing to be placed within or removed from the sofa-bed.

Fig. 3 is an end view showing the folding bed frame partly opened, and

Fig. 4 is an end view showing the device converted into a bed.

The sofa-bed shown in the accompanying drawing is of the couch type and comprises a rigid sofa-frame A and a folding sectional bed frame B, both frames being preferably constructed of angle irons. The sofa-frame A comprises four legs or corner posts 5 mounted on castors 6 and suitably connected by side rails 7 and end rails 8.

The folding bed frame B comprises three folding or hinged sections 10, 11 and 12. In the unfolded or opened position of the bed frame, as shown in Fig. 4, the folding sections 10, 11 and 12 thereof are disposed in substantially the same horizontal plane and cooperate to form the bed bottom. In the folded or closed position of the bed frame, as shown in Fig. 1, the outer or front section 10 forms the seat portion of the sofa-bed, the inner or rear section 12 is folded beneath said outer section and forms a supporting shelf for bed clothing and pillows, and the intermediate section 11 is disposed in a substantially upright position and serves as a back for the shelf and as a support for the rear portion of the outer section 10.

A continuous mattress 13 is tied or otherwise secured to a continuous woven wire fabric, not shown, which may be secured in any desired manner to the three sections of the folding bed frame. This arrangement permits the bed frame to be folded with the mattress thereon, the portion of the mattress carried by the outer section 10 serving as a cushion for the sofa-seat in the folded or closed position of the sofa-bed.

The outer section 10 is provided at its outer corners with legs 14, whose lower ends are provided with castors 15 which contact with the floor in the folded and unfolded positions of the folding bed frame. The legs and the end rails of the front section 10 are suitably connected by diagonal stays 16; and said legs are also connected together by a longitudinal side rail 17. In the folded or closed position of the bed frame, as shown in Fig. 1, the outer section 10 is disposed horizontally within the sofa-frame with its legs positioned between the legs of said sofa-frame and thus serves as a seat for the sofa-bed.

The outer ends of the end rails of the intermediate section 11 of the folding bed frame are pivotally connected, as at 18, to the rear end of the end rails of the front section 10; and the inner ends of the end rails of said intermediate section 11 are pivotally connected. as at 19 to the front ends of the end rails of the inner section 12. The end rails of the inner section 12 are provided with arms or extensions that project at right angles therefrom and are provided at their outer ends with pivot pins 20 which are slidably supported in horizontal slots 21 provided therefor in the uppermost end rails of the sofa-frame. The end rails of the inner section of the folding bed frame are also provided with latch arms 22 having notches 23 therein, which, in the extended position of the folding bed frame, are adapted to engage pins 24 on the uppermost end rails of the sofa-frame and thereby prevent accidental rearward overturning movement of the end section in the bed position of the folding frame. The latch arms 22 of the inner section 12 are provided with rounded or beveled outer

ends 22ª adapted to engage the pins 24 during the forward overturning movement of said inner section and thereby force said latch arms to ride over the pins which are then engaged by the notches 23 in the latch arms. In the closed position of the sofa-bed, the inner section of the folding bed frame is located beneath the outer section and is supported adjacent to its points of juncture with the intermediate section on horizontally disposed diagonal braces 5ª that are secured to the lowermost side and end rails of the sofa and serve to strengthen the rear corners thereof.

The outer and intermediate sections 10 and 11 of the folding bed frame have link connections 25 with the sofa-frame. The upper ends of the links 25 are pivotally connected to the end rails of the outer and intermediate sections by means of the pivots 18 that pivotally secure said sections together; and the lower ends of said links are pivotally secured to brackets 26 mounted on the lower end rails of the sofa-frame at points substantially midway of their length. The lower end portions of the links 25 are connected to the front and rear legs of the sofa-frame by means of coil springs 27 and 28, respectively. The springs 27 and 28 are employed to counterbalance the weight of the hinged sections of the folding bed frame, to assist in the opening and closing movements thereof, and to check or cushion such movement and thereby prevent jarring of the parts.

The outer sections of the folding bed frame is also connected to the sofa-frame by folding links 29 and 30. The lower links 29 are pivotally secured to the lower end rails of the sofa-frame adjacent to the front corners thereof, and the upper links 30 are pivotally secured to the end rails of the front section of the folding frame forward of the links 25. Links 31 have one end pivotally connected to the links 27 and 28 at their point of juncture; and the opposite ends of said links 31 are connected to the longitudinal side rails of the front section by means of coil springs 32. The lower end portions of the upper links 30 are extended beyond their point of connection with the lower links 29 and are provided with stop flanges 33 which abut against said lower links 29 in the raised position of the outer section of the bed frame and thus constitute stops for limiting the upward swinging movement of said front section relative to the intermediate section.

The device may be easily opened to bed position, as shown in Fig. 4, by grasping the outer bed section 10 and drawing the same forward out of the sofa-frame. The outer and intermediate sections 10 and 11, being hinged on the supporting links 25, are carried forward by said links; and the inner section being pivotally secured to said intermediate section, is caused to overturn forwardly through about 180 degrees, and becomes coplanar with the intermediate and outer sections.

During the unfolding movement of the bed frame, the pivotally supported inner section 12, by reason of its slot and pin connection with the top end rail of the sofa-frame, is drawn bodily forward a distance sufficient to permit the notches 23 in the latch arms 22 to straddle the pins 24, thereby preventing accidental overturning movement of said inner section. The inner section is unlocked by raising the outer section while exerting a rearward pressure thereon, whereby the movable pivot pins 24, which support the inner section 12, are caused to slide rearwardly in their supporting slots and thus cause the latch arms to become disengaged from the lock pins 24.

When it is desired to place bedding or other materials upon the shelf formed by the inner section of the folded bed frame, the front or seat section 10 thereof may be raised on the pivots 18 as a hinge to the position shown in Fig. 2, in which position said shelf is easily accessible.

It is noted that the stop flange 33 on the folding link connections 29 and 30 between the outer section 10 and the sofa-frame serve to limit the upward swinging movement of said section. It is also noted that the spring connections 32 between said folding links and said outer section serve to counterbalance the weight of said section and yieldably retain the same in its raised position.

Obviously, the hereinbefore described device admits of considerable modification without departing from the invention. Therefore, I do not wish to be limited to the specific construction and arrangement shown.

What I claim is:

1. In a sofa-bed, a sofa-frame and a folding bed frame comprising outer and inner sections and an intermediate section pivotally connecting said outer and inner sections, link connections between said outer and intermediate sections and said sofa-frame, a connection between said inner section and said sofa-frame permitting both sliding and pivotal movement of said inner section during the folding and unfolding movements of said bed-frame, latch arms on said inner section adapted in the bed position of the bed frame to engage portions of said sofa-frame and thereby prevent pivotal movement of said inner section, the sliding movement of said inner section permitting the latch arms thereof to be engaged with and disengaged from said sofa-frame during the unfolding and folding movements, respectively, of said bed-frame.

2. In a sofa-bed, a sofa-frame and a folding bed frame comprising outer and inner sections and an intermediate section pivotally connecting said outer and intermediate sections, said inner section being pivotally supported in said sofa-frame and said outer and intermediate sections having link connections with said sofa-frame at their points of juncture, whereby said sections are adapted to be folded with the inner section below the outer section and are adapted to be unfolded to form the bed, said outer section being adapted to be swung upwardly independently of the intermediate section in the folded position of the bed frame, and means for counterbalancing the weight of said outer section and for yieldably supporting said outer section in its raised position, said means comprising a pair of folding links connected with said outer section and said sofa-frame, and a coil spring connected with said links and said outer section.

3. In a sofa-bed, a sofa-frame and a folding bed frame comprising outer and inner sections and an intermediate section pivotally connecting said outer and intermediate sections, said inner section being pivotally supported in said sofa-frame and said outer and intermediate sections having link connections with said sofa-frame at their points of juncture, whereby said sections are adapted to be folded with the inner section below the outer section and are adapted to be unfolded to form the bed, said outer section being adapted to be swung upwardly independently of the intermediate section in the folded position of the bed frame, and means for counterbalancing the weight of said outer section and for yieldably supporting said outer section in its raised position, said means comprising a pair of folding links connected with said outer section and said sofa-frame, and a coil spring connected with said links and said outer section, one link of said pair being provided with a stop flange adapted to abut against the other link of said pair at a predetermined point of their folding movement and thereby limit the upward swinging movement of said outer section.

Signed at St. Louis, Missouri, this 15th day of April, 1924.

RUDOLPH COOPERSMITH.