

H. J. JACOBS.

SOFA BED.

APPLICATION FILED JAN. 26, 1912.

Patented June 25, 1912.

3 SHEETS—SHEET 1.

1,030,730.

Fig. 1.

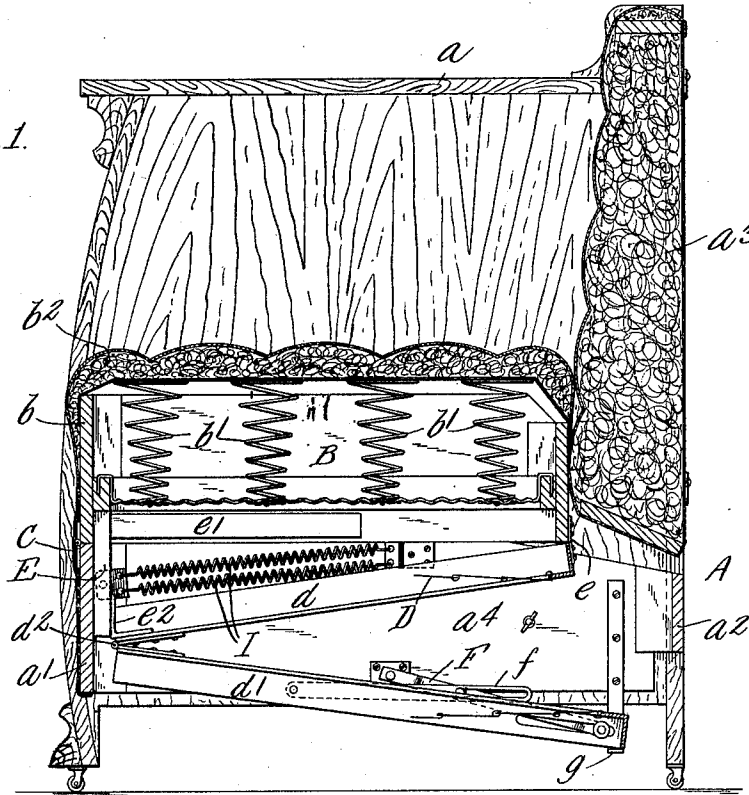


Fig. 2.

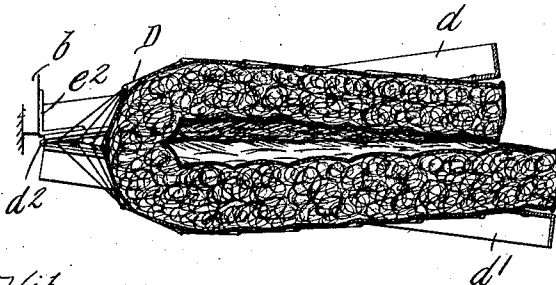
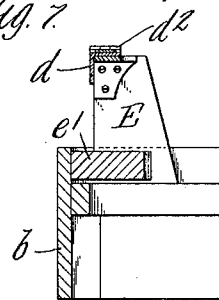


Fig. 7.



Witnesses.

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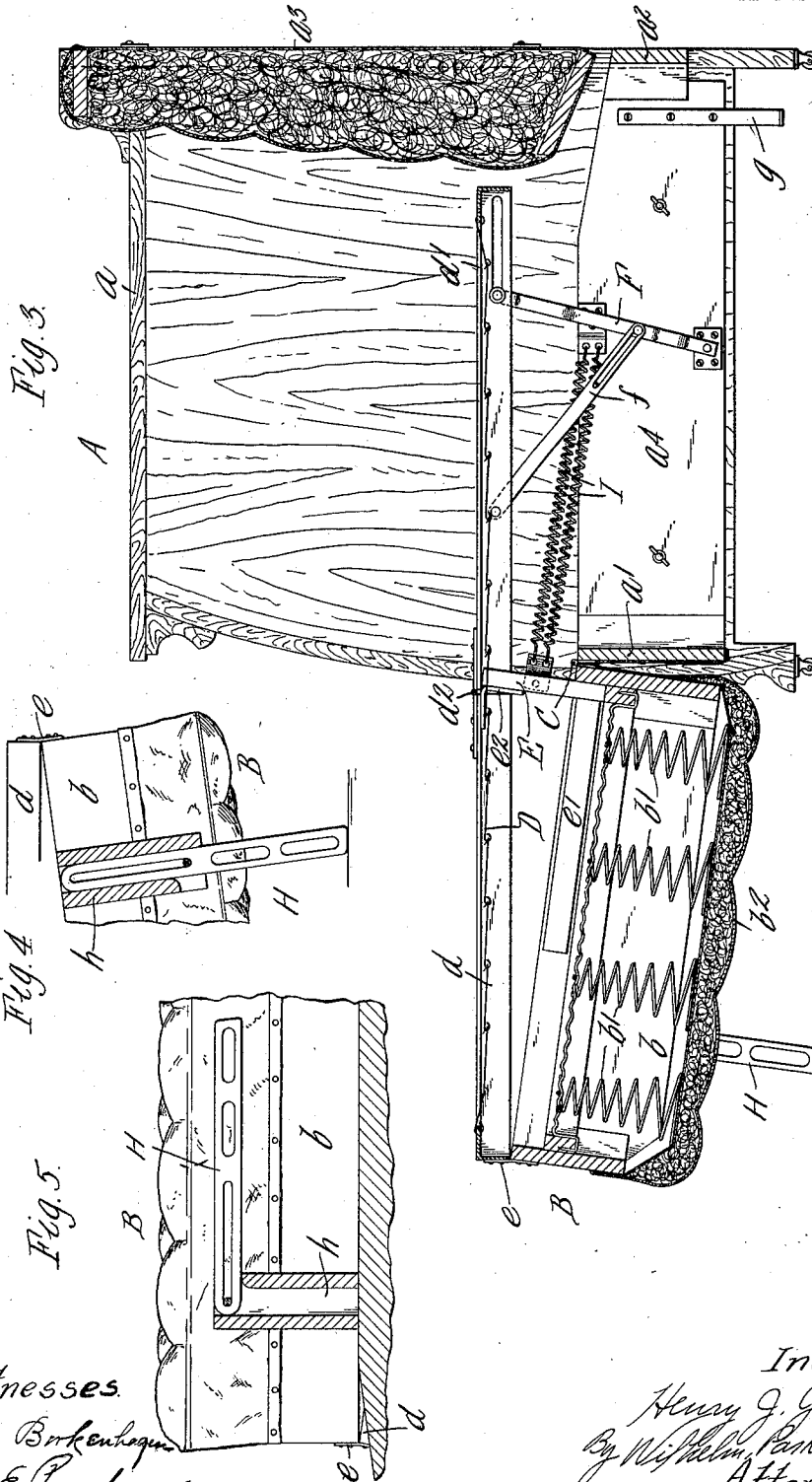
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3 SHEETS—SHEET 2.

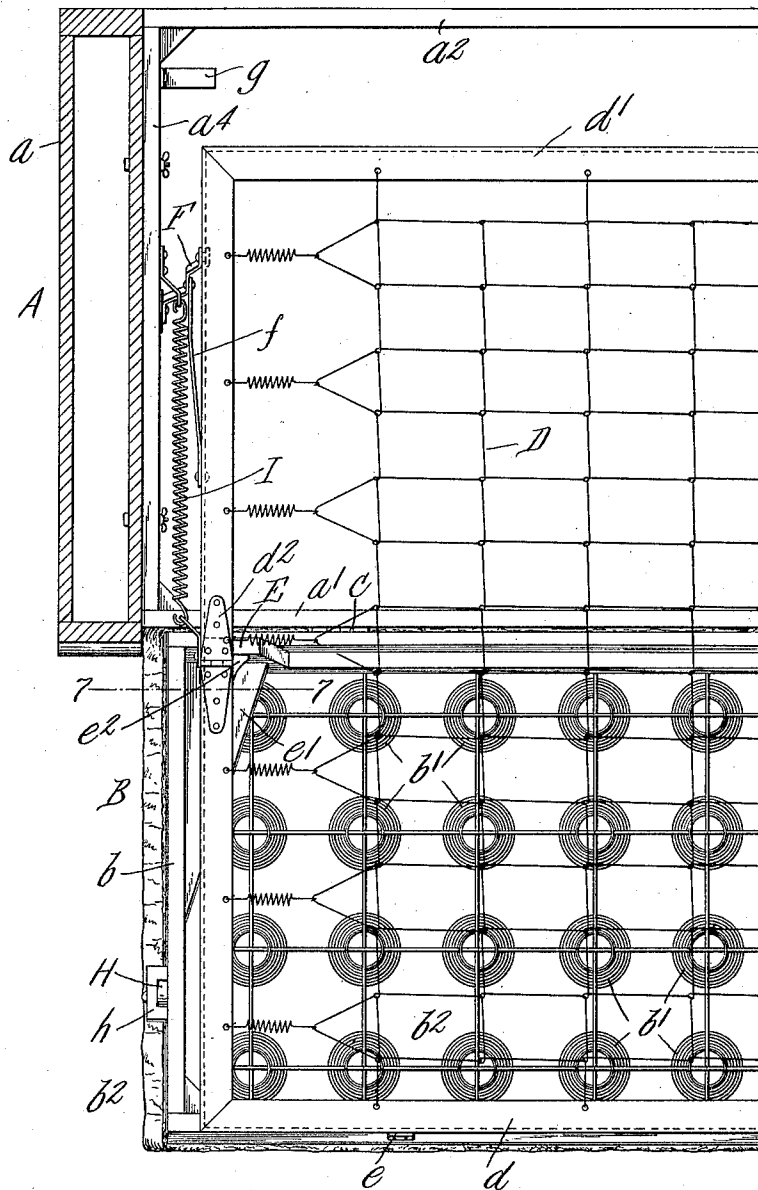
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Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY J. JACOBS, OF BUFFALO, NEW YORK, ASSIGNOR TO BUFFALO LOUNGE COMPANY, OF BUFFALO, NEW YORK.

SOFA-BED.

1,030,730.

Specification of Letters Patent.

Patented June 25, 1912.

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To all whom it may concern:

Be it known that I, HENRY J. JACOBS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Sofa-Beds, of which the following is a specification.

This invention relates to sofa beds or convertible couches of that kind having a hinged seat adapted to be swung forwardly to an inverted position in front of the stationary couch frame, and a folding spring bed bottom which, together with the mattress supported thereby, folds beneath the couch seat when the latter is in its normal position and is unfolded to form a full width bed when the couch seat is inverted.

In order to produce a comfortable bed having a continuous spring bottom or mattress support and to enable the bed bottom to yield to the extent necessary to insure this result, the couch must be constructed so that when it is converted into a bed, the spring bed bottom will be supported above and free from the frame and spring work of the couch seat, and the construction must also be such that the bed bottom, when folded under the couch seat, affords the necessary space between its sections for the folded mattress. Numerous sofa beds intended to secure these results have been patented, but in most instances the spring bed bottoms have been made in three sections, or the constructions, in other respects, have been complicated and expensive and more or less objectionable in use.

The object of this invention is to simplify the construction of sofa beds of this type and to produce a practical serviceable sofa bed which attains the before mentioned results, but is nevertheless of very simple and inexpensive construction.

In the accompanying drawings: Figure 1 is a sectional elevation of a sofa bed embodying the invention, showing the same closed for use as a couch. Fig. 2 is a fragmentary sectional elevation of the bed bottom and mattress folded. Fig. 3 is a sectional elevation of the sofa bed opened for use as a bed. Fig. 4 is a fragmentary elevation partly in section, showing the supporting leg for the hinged seat in supporting position. Fig. 5 shows the position of the leg in the normal position of the seat. Fig. 6 is a fragmentary plan partly in hori-

zontal section of the sofa bed opened for use as a bed. Fig. 7 is a fragmentary longitudinal section on line 7—7, Fig. 6.

Like reference characters refer to like parts in the several figures.

A represents the stationary frame of the couch, which may be a rectangular frame of any usual or suitable construction. The couch illustrated is, however, of the davenport type, and the frame consists of upright end pieces *a* connected at the lower portion by front and back rails *a'* *a*², and by a stationary upholstered back *a*³. In the construction shown the front and back rails *a'* *a*² of the frame are connected by end rails *a*⁴, thus forming a rigid rectangular base frame to which the separate piece and upright end pieces *a* are attached, but while this construction is preferred, it is not essential.

B represents the couch seat which consists, as usual, of a rectangular box-like frame *b* containing suitable springs *b'* which form a spring bottom for the upholstered seat pad or covering *b*². The front board of the seat frame is hinged at its lower edge to the upper edge of the front rail *a'* of the stationary couch frame by hinges *C* which permit the seat to be swung forwardly from the normal position shown in Fig. 1, in which it forms the seat of the couch, to the inverted position in front of the stationary frame, shown in Fig. 3.

The folding bed bottom consists of a two-part folding rectangular metal frame and the usual resilient fabric *D* of flexibly connected links, or other formation, which is attached at its ends to the opposite ends of the frame. The folding bed bottom frame is composed of an outer section *d* and an inner section *d'*, each of substantially U-shape, which are connected by hinges *d*² secured to the adjacent extremities of their end bars. The outer frame section *d* is rigidly mounted on the hinged couch seat so as to swing with the seat and be supported thereby, the end bars of the outer section *d* being fixed to rigid standards or supports *E* projecting from the seat frame at the ends of the front or hinged side thereof, and the outer portion of the section being secured to the free or adjacent side of the couch seat by plates *e*, or otherwise. The standards *E* shown consist of pieces of wood secured to the front board of the seat frame and braced

by corner blocks e' , and the end bars of the outer section of the bed bottom are secured to the standards by angle plates e^2 , but standards constructed and rigidly secured to the seat frame in any other suitable manner can be used, and the outer section of the bed bottom can be secured thereto in any other suitable way. The outer section of the bed bottom is thus rigidly secured to the couch seat at an inclination to the bottom side thereof in such a way that, in the normal position of the seat, it is suspended beneath the seat, inclining upwardly toward the rear of the couch, see Fig. 1, and is supported in a horizontal position above the seat when the seat is inverted to the inclined position shown in Fig. 3.

In the construction shown a supporting link F is pivoted at one end to each end of the stationary couch frame and is slidably connected at its opposite end to the adjacent end bar of the inner section d' of the bed bottom frame, and a link f is pivoted to each end bar of the bed bottom section d' and slidably connected to the adjacent supporting link F . In the normal position of the couch seat the inner section d' of the bed bottom is supported beneath the outer section d by its hinge connections with the outer section and by suitable brackets g on the stationary frame, as shown in Fig. 1. When the seat is inverted the supporting links F are raised by the links f to the position shown in Fig. 3, and support the inner bed bottom section in a horizontal position in the same plane as the outer section. The inner bed bottom section can, however, be supported by any other suitable connections permitting it to assume the positions mentioned.

The couch seat can be supported in its inverted position, in which it extends at an upward inclination outwardly from the stationary couch frame, by any suitable legs or supports. A leg H is shown for this purpose. One of these legs is pivotally and slidably mounted in a socket h at each end of the couch seat. When inverting the seat these legs swing to an upright position and slip up into the sockets whereby they are held rigid and support the seat, and when the seat is swung back to its normal position the legs swing back out of sight between the ends of the seat and the ends of the couch frame.

I represents springs attached to the standard E and to the end of the couch frame for assisting in raising the couch seat when swinging it to and from its normal position. These springs, or any other suitable means for the purpose, can be employed or not, as preferred.

By employing a folding bed bottom composed of two sections with the outer section mounted as described on the hinged couch

seat, and the inner section hinged to the outer section and mounted to move in the couch frame, ample space is left between the sections, when folded, for the folded mattress, and when the bed bottom is unfolded or extended for use as a bed, it is supported well above and free from the frame of the couch seat and the front rail of the stationary frame, so that there is nothing to prevent the bottom fabric from yielding to the extent necessary to insure an easy comfortable bed. When the bed bottom is folded the sections of the frame diverge at an angle from their hinge connections, but the bottom fabric between the end bars of the frame will spread and conform to the folded mattress, as indicated in Fig. 2, and the mattress does not have to be crushed or compressed at the fold. The short intermediate section heretofore used in the bed bottom frame is, therefore, not necessary.

It will be observed that, by the construction described, the couch seat can be made with an ordinary box frame of wood connected by ordinary hinges to the stationary couch frame, and the bed bottom frame has but two sections joined by a single pair of ordinary hinges. Thus the structure is composed of the minimum number of parts and specially formed hinges and connections are not required. Since the bed bottom fabric is attached to the ends of the bottom frame by springs, which are under considerable tension, the fabric exerts a strong inward pull on the folding ends of the bottom frame, which is, of course, increased by the weight of a person on the bed, and in the three piece constructions special provision has to be made to prevent the ends of the frame from bending inwardly and causing the fabric to sag. With the bed bottom frame composed of the two hinged sections, one rigidly secured to the couch seat as described, the ends of the frame are effectually held against the pull of the fabric. When the bed bottom is extended the rear edge of the inner section lies close to the back of the couch, and does not leave the wide space between the bed bottom and the back of the couch which is a serious objection in many constructions.

I claim as my invention:

1. The combination of a couch frame, a couch seat hinged to said frame and adapted to be swung to and supported in an inverted inclined position in front of the frame, a two-part folding bed bottom comprising outer and inner frame sections hinged together, said outer section being fixed on said seat at an inclination thereto so as to be supported in a horizontal plane above the inverted seat, and connections between said inner bed bottom section and the couch frame which support said inner section in the horizontal plane of said outer section

when the bed bottom is extended and permit the inner section to lower in the couch frame when the bed bottom is folded, substantially as set forth.

5 2. The combination of a couch frame, a couch seat hinged to said frame and adapted to be swung to and supported in an inverted inclined position in front of the frame, a
10 two-part folding bed bottom comprising outer and inner frame sections hinged together, said outer section being fixed at one side to rigid end standards on said seat and
15 at its opposite side to the adjacent side of said seat and extending at an inclination to the seat so as to be supported in a horizontal plane above the inverted seat, and connections between said inner bed bottom section and the couch frame which support said
20 inner section in the horizontal plane of said outer section when the bed bottom is extended and permit the inner section to lower in the couch frame when the bed bottom is folded, substantially as set forth.

3. The combination of a couch frame, a

couch seat hinged to said frame and adapted 25 to be swung to and supported in an inverted inclined position in front of the frame, a two-part folding bed bottom comprising movably connected outer and inner frame sections, said outer section being rigidly 30 mounted on said seat so as to be supported in a horizontal plane above the inverted seat and at an inclination beneath the seat when the seat is in its normal position, and means which support said inner section in the hori- 35 zontal plane of said outer section when the bed bottom is extended and permit the inner section to assume a position in which it is below and diverges from the outer section when the bed bottom is folded, substantially 40 as set forth.

Witness my hand this 25th day of January, 1912.

HENRY J. JACOBS.

Witnesses:

C. W. PARKER,
A. L. MCGEE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."