March 5, 1957 E. O. BARTOLUCCI 2,783,479

COUCH-BED

Filed Nov. 6, 1953 2 Sheets-Sheet 1

Fig. 1.

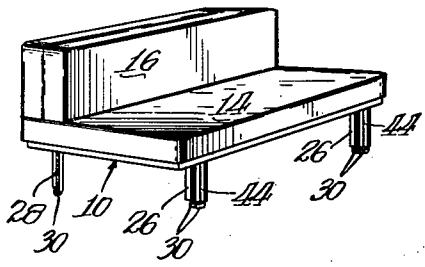


Fig. 2.

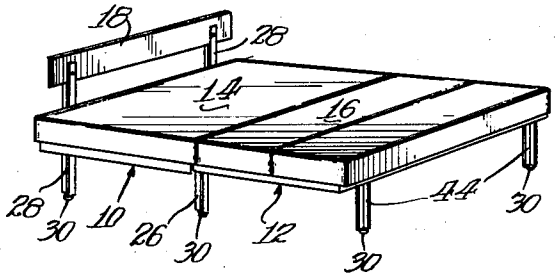


Fig. 6.

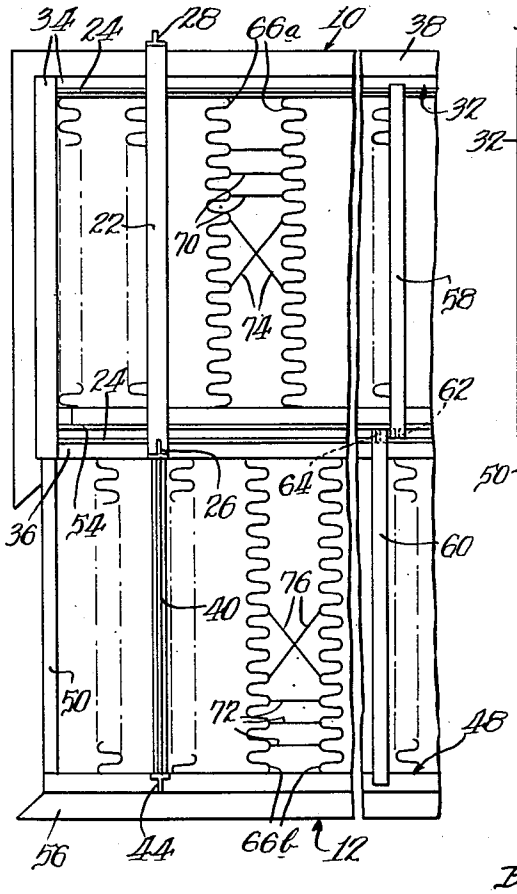
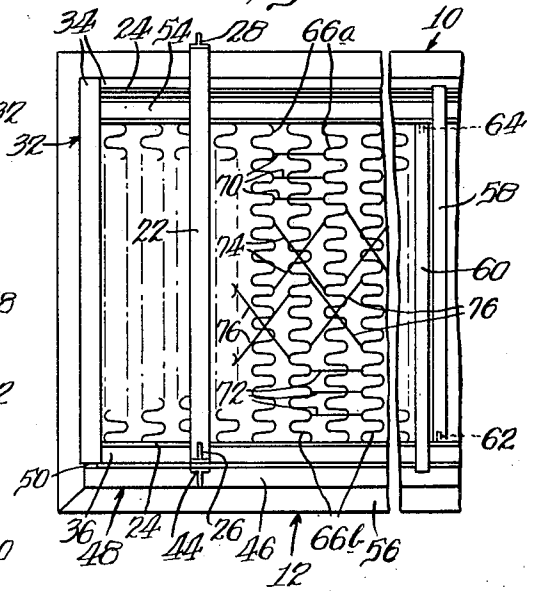


Fig. 5.



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Fig. 3.

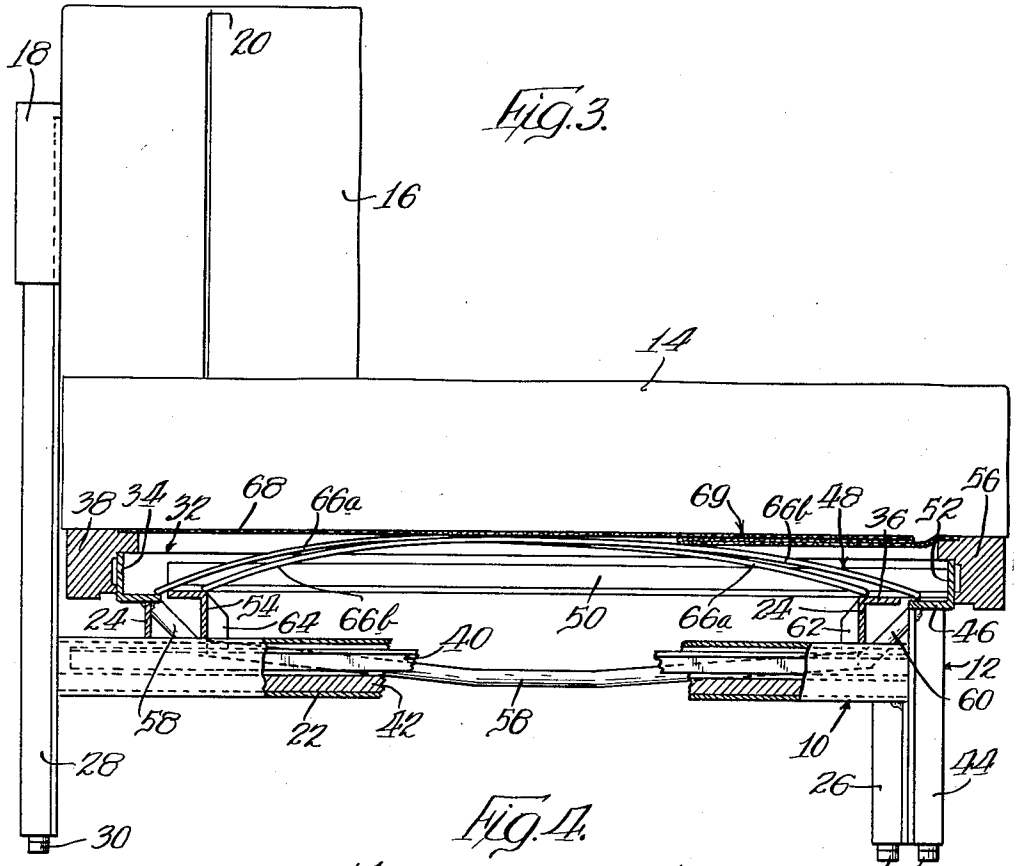
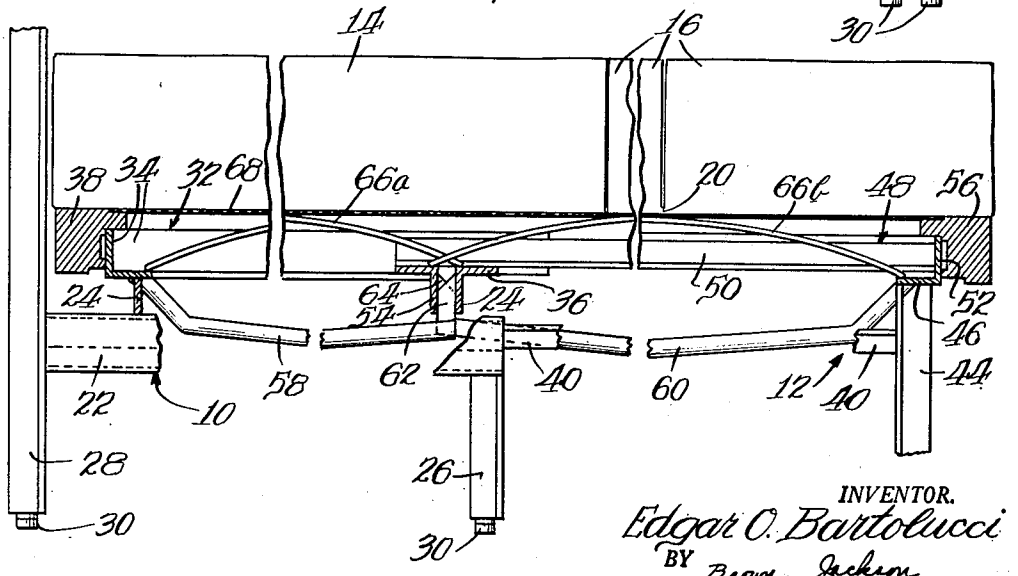


Fig. 4.



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COUCH-BED

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Application November 6, 1953, Serial No. 390,676

4 Claims. (Cl. 5—18)

The present invention relates to improvements in multi-purpose furniture of the character accommodating both sitting and reclining and, particularly, to an improved couch-bed capable of assuming a first position in which the same comprises a couch upon which people may be seated and a second position wherein the same comprises a double bed.

Couch-beds of the general character described are very well known and have met with substantial commercial success because of the many advantages thereof. However, prior endeavors in the art have not fully met all the demands of the purchasing public, particularly as regards economy and ease of operation, and the combined features of economy, ease of operation, comfort, practicality, long wear, and attractive design.

It is an object of the present invention to provide an improved couch-bed that affords all of the combined desirable features enumerated above in a particularly economical assembly.

Other and conjoint objects of the present invention are to provide, first, an improved spring assembly for couch-beds and, second, an improved furniture frame assembly for couch-beds, whereby to afford a couch-bed meeting the demands of all purchasers.

In the preferred embodiment of my invention, disclosed in detail hereinafter, I employ two telescopically associated rectangular frames which are adapted for relative movement, in a particularly advantageous manner, to a telescoped position equivalent to the size of one frame only, wherein the frames constitute a couch, and to an extended position wherein the frames are disposed substantially in side by side relation to constitute a double bed. Associated with each frame are a plurality of spring members, each comprising a serpentine length of spring steel that is bowed transversely of its length. The springs are mounted on each frame in spaced parallel relation between opposite sides of the respective frame with the bow thereof extending upwardly, and with the springs on the two frames being staggered so that a spring on one frame may be received within the space between two adjacent springs on the other frame. Due to this spring arrangement, the springs on one frame need not be disposed at a different elevation than the springs on the other frame, as has been common in the prior art, and the resultant structure affords a double bed presenting a flat, uniform sleeping surface.

Springs of the nature defined above are known and I am aware of one development heretofore in the art which endeavored to use such springs in a manner similar to that defined. However, in such structure, the springs could not be tied in any conventional manner, because of the necessity for an interlocking spring relation in the couch position of the couch-bed, and the springs were necessarily left untied. Due to an inability to tie the springs of the two frame assemblies, the springs could not be selected of a desired or customary resiliency, since the same would flex laterally and permit a person to drop between the adjacent springs. To avoid

lateral flexation, the springs had to be of a very stiff nature, so stiff that comfort was not provided in any degree whatever. In view of these factors, the prior development failed commercially.

A particular object of the present invention is to overcome the failings of the aforesaid prior art development by the provision of a novel manner of tieing and bracing the serpentine springs utilized, whereby the problems of lateral flexation are eliminated and a spring structure of optimum resiliency may be afforded.

Prior developments in the art have failed further in optimum structural design in that the spring means employed was intended to support both sitting and reclining loads by the same spring force and resiliency. It is well known in mattress and chair design that more spring resistance is required for sitting loads than for reclining loads and that for purposes of comfort reclining loads should not be supported by the same spring resistance as employed for sitting loads. Beds are not comfortable to sit on and chairs are not restful for sleeping in. Yet, prior developments in couch-beds have attempted to strike a happy medium between the two, which obviously is impossible of accomplishment.

The spring structure afforded by the present invention overcomes the noted disadvantage in a very practical manner, in the preferred embodiment as above described, in that twice as many springs are presented for sitting loads in the telescoped position of the frames as are presented in the extended position of the frames for reclining loads. Accordingly, the present invention affords the distinct advantage of optimum spring design for the loads to be supported by a couch-bed.

A further object of the present invention is the provision of improved mattress means for couch-beds wherein portions of the mattress are utilized in the telescoped position of the frames for the seat and back rest of the couch, and are used in the extended position of the frames to constitute a flat mattress surface which does not present indentations or other objectionable departures from a flat uniform mattress surface.

Other objects and advantages of the present invention will become apparent in the following detailed description of a preferred embodiment of the invention.

Now, in order to acquaint those skilled in the art with the manner of making and using the couch-bed of my invention, I shall describe, in connection with the accompanying drawings, a preferred embodiment of my invention.

In the drawings:

Figure 1 is a perspective view of the couch-bed of my invention in its telescoped position as adapted for use as a couch;

Figure 2 is a perspective view of the couch-bed of my invention in its extended position as adapted for use as a bed;

Figure 3 is a side view, on an enlarged scale, partly in section and partly in elevation, of the couch-bed in its telescoped or couch position;

Figure 4 is a fragmentary side view, similar to Figure 3, of the couch-bed in its extended or bed position;

Figure 5 is a fragmentary bottom view of the couch-bed in its telescoped or couch position; and

Figure 6 is a fragmentary bottom view of the couch-bed in its extended or bed position.

Referring now to the drawings, and particularly to Figures 1 and 2, I have shown the couch-bed of my invention as comprising a pair of frames 10 and 12, inner and outer frames respectively, telescopically associated with one another, a seat cushion 14 and a back cushion 16. The outer frame 12 is movable with respect to the inner frame 10 to the telescoped position shown in Figure 1 and to the extended position shown in Figure 2.

In the telescoped position, the cushion **14** comprises a seat cushion and the cushion **16** comprises a back cushion, the latter resting on the cushion **14** and against a back rest **18** provided on the inner frame **10**. In the extended position of the frames, the cushion **14** comprises a mattress for the inner frame **10** and the cushion **16** comprises a mattress for the outer frame **12**, the cushion **16** preferably being foldable or in two pieces to fold out to an area equivalent to that of the frame **12** and being foldable to half that area to comprise a back rest cushion of substantial thickness. As will be appreciated from Figures 1 and 2, the assembly in its telescoped position constitutes a couch of exceptionally attractive modern design, and in its extended position comprises a double bed.

The cushions **14** and **16** are preferably formed of foam rubber which affords a superb cushioning effect with the ability to maintain a given or original shape. The cushion **14** preferably is a one piece rectangular block of foam rubber covered by a suitable fabric, preferably a decorator fabric. I prefer to form the cushion **16** of two rectangular blocks of foam rubber, each approximately half the size of the cushion **14**, and to cover the same with a decorator fabric in such manner that the fabric forms a hinge or pivot connection between the two foam rubber blocks along adjacent longitudinal edges thereof, as is indicated at **20** in Figures 3 and 4. Due to this arrangement, the cushion **16** when in use as a back rest cushion, will occupy a sufficient amount of the width of the seat cushion **14** to reduce the seating area to that which is conventional in couches. This is a substantial advantage in that a person may then sit in a normal position on the couch with his or her feet on the floor and yet recline or rest back against the cushion **16** just the same as in an easy chair. By utilizing foam rubber as a cushioning material, the cushion may be formed to present substantially square edges, as shown, whereby, when the cushion **16** is used as a mattress as shown in Figure 2, the individual cushion portions closely abut one another to afford, in effect, a uniform, flat or level mattress surface free from areas of separation and other disadvantageous irregularities, as is shown in Figure 4. As will be appreciated, the cushions **14** and **16** are light weight and readily handled and moved, thus to accommodate use and operation of the couch-bed by all persons, even those of a very frail nature.

The frames **10** and **12** of the couch-bed of my invention are shown in detail in Figures 3 and 4. The inner frame **10** is rectangular in plan and preferably formed of standard metal bar and plate forms, and comprises a pair of horizontal, spaced parallel, hollow, box section cross bars or beams **22**, a pair of horizontal spaced parallel, longitudinal beams **24** extending between and fixedly secured, as by welding, to the upper surface of the cross bars at right angles thereto, a pair of vertical front legs **26** welded or otherwise secured respectively to the lower surface of the bars **22** at the forward end thereof, and a pair of rear legs **28** fixedly secured, preferably welded, respectively, to the rearward end of the bars **22**. The legs of the frame are preferably formed of T-section stock and are provided at the lower end thereof with floor engaging shoes or skids **30**. The rear legs **28** extend upwardly in spaced parallel relation above the beams **24** and at a predetermined desired distance above the frame proper carry the back rest **18**, which may suitably comprise a horizontally extending wooden board, a 2 x 6 for example. Preferably, the T-bar stock of the rear legs is positioned to dispose the cross bar or head of the T parallel to and facing toward the front of the frame and the web thereof is cut away at the top portion of the legs to receive the back rest board **18**, in which case the webs of the T's assist in supporting the board. Also, it is preferred to notch the board for the reception of the head portion of the T's so that when the board is secured to the rear legs, as by screws, a flat

surface is presented by the back rest board and the heads of the T-section rear legs. The longitudinal beams **24** of the frame **10** preferably comprise upstanding metal plates upon which is supported a rectangular framing **32** comprising angle iron rear and side members **34** and a plate-like front member **36**. Preferably, the front member **36** of the framing **32** and the front longitudinal beam **24** comprise an integral angle iron, as is shown. The framing **32** is preferably rigidly secured to the beams **24** by welding or the like. At the rear and sides thereof, the framing 32 carries wood trim members **38** suitably secured to the framing in any conventional manner.

The outer frame **12** of the couch-bed is rectangular in plan and of approximately the same size as the inner frame **10** and is also preferably formed of standard metal bar and plate stock. As shown, the outer frame includes a pair of horizontal, spaced parallel cross bars **40**, preferably of T-section, which are telescopically received and supported within the box section cross bars **22** of the inner frame. To insure smooth and substantially effortless telescoping of the bars **40** in the boxes **22**, the bottom of the boxes **22** preferably each have the lower surface thereof lined by a wooden slide **42** upon which the web or leg of the respective T-section bar **40** rides. At the forward end thereof, each of the cross bars **40** is rigidly united to an outer frame front leg **44**, which is of substantially the same nature as the legs **26** of the inner frame and which is also provided with a skid or shoe **30** at the lower end thereof. The front legs **44**, which are the only legs on the outer frame, are fixedly joined by a longitudinal beam **46** secured to the upper surface thereof. The legs **44** are longer than the legs **26** of the inner frame so that the beam **46** is disposed in the same horizontal plane as the front member **36** of the framing **32** of the inner frame **10**. The outer frame **12** also includes a rectangular framing **48** which is of a length slightly less than that of the inner framing so as to be slidably or telescopically received therein. The framing **48** includes angle iron side members **50**, of a size smaller than the angle irons **34** of the inner frame, which members **50** slide upon the irons **34**, a vertical front member **52**, which with the beam **46** preferably comprises an integral angle iron, and an angle iron rear member **54** of the same size as the angle iron **24—36**. The front member **52** is of a height to correspond, in horizontal disposition, to the rear member **34** of the inner framing and carries a wood trim member **56** corresponding to and mating with the wood trim **38** on the sides and rear of the inner frame. As shown in Figures 5 and 6, the side trim members **38** of the inner frame at the forward end thereof are cut to a given angle, say 450, and the trim member **56** carried by the outer frame is cut at the opposite ends thereof to a complemental angle, whereby the members **38** and **56** in the telescoped position of the couch-bed comprise a continuous wooden frame. The rear angle member **54** of the outer frame is fixedly secured to the lower surface of the side members **50**, whereby the same mates with the angle iron **24—36** and rides upon and is supported by the upper surface of the cross bars **22** of the inner frame. The angle irons **24—36** and **54** are preferably disposed in opposed relation with their vertical legs facing one another to accommodate maximum relative movement of the two frames in a minimum of space and to constitute a limit stop defining full bed open position of the frames. As will be appreciated, the cross bars **40** in the open or extended position of the frames are disposed within the beams **22** on the slides **42**, whereby the outer frame is supported by the legs **44** and the inner frame. The T-section front legs **26** and **44** of the two frames are disposed with their head portions facing one another to define a compact leg structure in the telescoped or closed position of the frames, as is shown in Figures 1 and 5, and to constitute stop means defining the telescoped position.

From the foregoing, it will be appreciated that the

inner frame 10 basically comprises a pair of spaced parallel horizontal hollow cross beams 22, a pair of spaced parallel horizontal longitudinal beams 24—34 and 24—36 secured to the upper surface of the beams 22, and four vertical supporting legs 26; that the outer frame 12 basically comprises a pair of spaced parallel horizontal cross beams 40 each telescopically received in one of the beams 22, a pair of spaced parallel horizontal longitudinal beams 46—52 and 54 rigidly connected by the members 50 with the beam 46—52 rigidly connected to the beams 40, and a pair of vertical legs supporting the outer or forward end of the frame; and that the two frames are telescopically associated, with the longitudinal beam 54 of the outer frame 12 received between the longitudinal beams 24—34 and 24—36 of the inner frame and slidably supported by the hollow cross beams 22. As thus associated, the outer frame 12 is adapted to be moved relatively to the inner frame 10 to the extended or bed position shown in Figures 2, 4 and 6 and to the closed or couch position shown in Figures 1, 3 and 5 wherein the outer frame is disposed substantially within the marginal confines of the inner frame. Relative movement of the two frames is closely and accurately guided so that the defined movement of the outer frame is effected readily and without appreciable effort. The skids or shoes 30 insure substantially frictionless engagement of the legs with the floor, and the slides 42 accommodate substantially frictionless association of the cross beams 22 and 40, whereby to enhance relative movement of the frames to such extent that even very frail persons can manipulate the frames with ease. Also, the particular association of the frames is such as to eliminate relative canting and jamming of the frames.

While the frames as thus far described are complete for all practical purposes, it is usually desirable to brace the frames at approximately the center thereof to prevent spreading. To this end, I provide center braces 58 and 60, respectively, for the inner and outer frames, the braces being slightly off-center to avoid interference with one another. The braces may suitably be formed of tubular, box, or channel stock, and the brace member 58 of the inner frame extends from the rear longitudinal beam 24—34 forwardly to the front longitudinal beam 24—36, the same being fixedly secured to the latter beam by a bracket 62. The brace 60 for the outer frame is secured by a bracket 64 to the vertical leg of the rear or inner longitudinal beam 54 and extends forwardly to the front longitudinal beam 46—52, both braces 58 and 60 being bowed downwardly to avoid interference with the inner beam 54 of the outer frame and the outer beam 24—36 of the inner frame, respectively.

Having thus described the structural and functional details of the frame means of the couch-bed of my invention, attention is now given to the springs and the mounting and tieing thereof as provided according to the present invention to afford advantages heretofore unattained to the art. As will be observed in Figures 3 and 4, the frame means affords mounting portions or surfaces, namely, the horizontal legs of the longitudinal beams 24—34 and 24—36 and 54 and 46—52 of the two frames, which lie in a common horizontal plane to provide a flat spring and mattress receiving surface in both positions of relative movement of the frames. The spring means employed comprises a plurality of spring elements 66, each of which consists of a length of spring steel wire or rod bent to serpentine shape, with the bending thereof being effected in a single plane, which after assuming said serpentine configuration is bowed transversely of said plane. Springs of this nature are known, but have not been successfully employed in couch-beds heretofore. A plurality of the spring elements 66 are mounted on each of the two frames in spaced parallel relation with the spacing between adjacent springs on each frame being greater than the width or serpentine undulations of a single spring, as is shown in Figure 6. Each spring is disposed on the respective frame with the bow thereof extending upwardly to the center of the frame and is secured, at the opposite ends thereof, to the spaced parallel longitudinal beam or framing members of the respective frame. For the sake of clarity, the springs 66 on the inner frame 10 are indicated by the reference 66*a* and those on the outer frame 12 are indicated by the reference 66*b*. The springs 66*a* of the inner frame 10 extend between the inner or rear longitudinal beam 24—34 and the outer or front beam 24—36, over the inner or rear beam 54 of the outer frame 12, and are fixed at their ends, as by welding, to the horizontally disposed legs of the angle irons 34 and 24—36. The springs 66*b* of the outer frame 12 are disposed in staggered or offset relation to the springs 66*a* and extend between the longitudinal beams 46—52 and 54 of the outer frame 12, over the angle iron 24—36 of the inner frame 10, and are fixedly secured at their ends to the horizontally disposed legs of the angle irons 46—52 and 54. Due to the staggered or offset relation thereof, the springs 66*b* in the telescoped position of the frames are each disposed between adjacent springs 66*a* on the inner frame and at the same elevation as the springs 66*a*, and vice versa. Accordingly, the springs 66*a* and 66*b*, as shown in Figures 3 and 4, present a common horizontal surface. Due to the bowing thereof, the springs do not present a perfectly flat, continuous, horizontal surface, but the bowing of the springs is not so exaggerated as to depart substantially from a perfectly flat surface, whereby the springs will support a mattress in a flat horizontal position. As shown in Figures 3 and 4, the bow of the springs 66 preferably extends upwardly to the horizontal plane of the upper surface of the wood trim members 38 and 56. To shield the springs, for both practical and esthetic purposes, I prefer to employ a fabric covering 68 therefor. The covering 68 is of a length equal to that of the couch-bed and of a width equal to that of the two frames in the extended position thereof, the covering being secured in any conventional manner at the longitudinal edge and the portions of the side edges thereof coextensive with the trim members 38 on the inner frame to the members 38. The other longitudinal edge of the covering 68 is secured to the trim member 56, thus affording an extensible covering for the springs, the covering in the telescoped position of the frames being folded back as indicated at 69 in Figure 3. Preferably, the trim members 38 and 56 are recessed at the inner edges thereof to receive the fabric covering 68, whereby the covering, in both positions of the frames, is disposed within the marginal confines of the trim members 38 and 56.

From the foregoing, it will be appreciated that the spring structure and arrangement provided affords a substantially flat horizontal surface in both positions of the frames 10 and 12 for receiving the cushions 14 and 16 to constitute a couch of optimum seating characteristics and a double bed presenting a flat, uniform mattress surface. In addition, the structure provided assures optimum spring support for sitting and reclining loads, respectively, in the couch and bed positions thereof, for the reason that a given horizontal area of the couch-bed will present twice as many springs in the couch position of the frames as in the bed position of the frames. Thus, persons seated on the "couch" will be comfortably and firmly supported as though the piece of furniture were specifically designed as a couch, and persons reclining on the "bed" will be restfully and properly supported as though the piece of furniture were specifically designed as a bed.

In employing the serpentine springs 66, the relatively long unsupported length thereof, between the spaced parallel longitudinal beams of the respective frames, would normally prevent the adoption of springs of optimum resiliency for the reason that the springs would flex laterally, particularly when the couch-bed were extended, so that

a portion of a person's anatomy could fall through the springs. To attempt to overcome this disadvantage by adoption of stiffer springs would necessitate the employment of such stiff springs that all semblance of comfort would be lost. To overcome the possibility of lateral deflection of the springs without in any way detracting from the optimum resiliency thereof, I provide a novel manner of tieing the springs, which normally could not be expected to be accomplished because of the interlacing of the springs in the telescoped position of the frames. Referring to Figure 3, it is seen that the inner ends of the springs **66***a* on the inner frame **10** always overlie or are disposed above the inner ends of the springs **66***b* on the outer frame **12** and that the outer ends of the springs **66***b* on the outer frame always overlie the outer ends of the springs **66***a* on the inner frame. Accordingly, the inner ends of the springs **66***a* and the outer ends of the springs **66***b* can be tied together by longitudinal braces or strings **70** and **72**, respectively. Theoretically, the longitudinal braces or ties could be employed for half the length of each set of springs. In practice, I have found that the ties **70** and **72** could not be satisfactorily employed for more than approximately 40 to 45% of the length of the springs. However, even the theoretical maximum is not completely adequate to afford full support against lateral deflection. To insure thorough bracing, ties should be extended beyond the center of the springs. However, this would appear impossible due to the fact that at points in excess of one-half the length of the springs on one frame, longitudinal ties would interfere with the placement of the springs on the other frame in the telescoped position of the frames. To accomplish the necessary additional bracing, I employ the longitudinal ties **70** and **72** for approximately one-third the length only of the springs **66***a* and **66***b*, respectively, and beyond that point I tie the springs together by criss-crossed diagonal braces or strings **74** and **76**, respectively. By disposing the latter braces or ties diagonally, the end portions thereof may be extended substantially beyond the midpoint of the respective springs, since the portions of the ties between two adjacent springs on one frame that would lie in the path of the spring on the other frame to be received between said two springs, will not be disposed beyond the location of the uppermost point of the last-named spring in the telescoped position of the frames. In other words, the point of intersection of two criss-crossed ties **74** on the inner frame **10** need not lie even as much as one-half of a spring length away from the inner end of the springs **66***a* to accommodate extension of the ends of the ties substantially beyond the spring midpoint, as is clearly shown in Figure 5. The same relation exists with respect to the springs **66***b* on the outer frame. Thus, the diagonal strings **74** and **76** accommodate bracing of the springs **66***a* and **66***b* to an extent substantially in excess of 50% of the length thereof. In practice, I have found bracing up to approximately 55 to 60% of the length of the springs to be entirely adequate, in which case the point of intersection of the criss-crossed ties can advantageously be disposed at a point located approximately at 40 to 45% of the length of a spring.

As thus provided, the ties **70** and **72** will be disposed along approximately one-third the length of the springs **66***a* and **66***b*, respectively, and the ties **74** and **76** will be disposed at approximately 40 to 60% of the length of the respective springs, whereby the ties will firmly hold and brace the springs against relative deflection longitudinally of the frames. At the same time, the ties will accommodate full vertical deflection of the springs whereby springs of optimum resiliency may be employed. In addition, the diagonal ties **74** and **76** in the closed or telescoped position of the frames will be interrelated as shown in Figure 5 to provide, in practical effect, 100% tieing or bracing of the springs in the position thereof in which the same will be subjected to their most abusive wear.

In view of the foregoing, it will be appreciated that the present invention affords optimum spring design and spring resiliency for couch-beds and provides substantial advantages in comfort and practicality. Also, the invention affords an improved frame construction that is particularly easy to use and manipulate and that affords support means for the perfectly flat and uniform disposition of mattress cushions. The foam rubber cushions as described assure the provision of a comfortable seat and bed. In addition to these factors assuring optimum comfort for users of the couch-bed of the invention, the overall design of a piece of furniture is characterized by its modernity and highly attractive esthetic appearance, as is clearly shown in Figures 1 and 2. And even in providing all of the noted advantages, the couch-bed of the invention does not depart from strict economy in materials, manufacture, or assembly.

In addition to the above, the present invention overcomes the most objectional features of the couch-beds in use heretofore in that the same eliminates bulky and unwieldy frame structures, vertical offset between spring surfaces, substantial lines of separation or demarcation in the mattress, irregular mattress surfaces, unequal spring pressures on the two portions of the frame, unwieldy folding and unfolding of the frame, folding of the springs, folding of the mattress in such manner as to break down the mattress fibers, unattractive appearance necessitated by bulky frames, and so on.

Thus, the present invention meets the object set forth hereinbefore of providing an improved couch-bed affording every desired advantage in a highly economical and practical manner to meet all the demands of the purchasing public.

While I have described what I regard to be a preferred embodiment of my invention, it will be appreciated that various changes, rearrangements and modifications may be made therein without departing from the scope of the invention, as defined by the appended claims.

I claim:

1. A couch-bed comprising relatively movable inner and outer frames each including a pair of spaced parallel horizontal longitudinal beams with one beam of each frame being disposed between and in parallel relation to the beams on the other frame, a plurality of springs extending in spaced parallel relation to one another transversely of the beams of each of said frames, each of said springs comprising a serpentine length of spring steel bowed upwardly to the center thereof and being secured at the opposite ends thereof to the beams on the respective frame, the springs on each of said frames being spaced apart by a distance greater than the width of the springs, the springs on one frame being staggered with respect to the springs on the other frame each to be located in the space between adjacent springs on said other frame to accommodate relative movement of said frames transversely of said beams to an extended position wherein the frames define a bed and to a closed position wherein the frames define a couch, the centers of the springs on each frame lying substantially in a longitudinal line, the line of centers of the springs on each frame always being disposed to a given side of the line of centers of the springs on the other frame, the said lines of centers being disposed closely adjacent one another in the closed position of said frames, and diagonal ties extending between and bracing adjacent springs on each frame adjacent the center thereof, said ties extending to opposite sides of the center of the springs with which associated and retaining said springs against relative deflection longitudinally of said frames, the inner and outer ends of the ties of the outer and inner frames, respectively, extending beyond one another in the closed position of the frames but not beyond the center of the ties on the inner and outer frames, re-

spectively, whereby the ties do not pass each other during movement of said frames, the inner and outer portions of the springs on the outer and inner frames, respectively, being untied to accommodate extension and closing of the frames.

2. A couch-bed comprising relatively movable inner and outer frames each including a pair of spaced parallel longitudinal beams with one beam of each frame being disposed between and in parallel relation to the beams on the other frame, said beams each providing a mounting surface all of which surfaces are disposed in substantially a common horizontal plane, a plurality of springs extending in spaced parallel relation to one another transversely of the beams of each of said frames, each of said springs comprising a serpentine length of spring steel bowed upwardly to the center thereof and being secured at the opposite ends thereof to the mounting surfaces on the beams of the respective frame, the springs on each of said frames being spaced apart by a distance greater than the width of the springs, the springs on one frame being staggered with respect to the springs on the other frame each to be located in the space between adjacent springs on said other frame to accomodate relative horizontal movement of said frames transversely of said beams to an extended position wherein the frames define a bed and to a closed position wherein the frames define a couch, the centers of the springs on each frame lying substantially in a longitudinal line, the line of centers of the springs on each frame always being disposed to a given side of the line of centers of the springs on the other frame, the said lines of centers being disposed closely adjacent one another in the closed position of the frames, longitudinal ties extending between and bracing adjacent springs on each of said frames adjacent the end thereof opposite the other frame, and diagonal ties extending between and bracing adjacent springs on each frame adjacent the center thereof, said diagonal ties extending to opposite sides of the center of the springs with which associated, the inner and outer ends of the diagonal ties of the outer and inner frames, respectively, extending beyond one another in the closed position of the frames but not beyond the center of the diagonal ties on the inner and outer frames, respectively, whereby the ties do not pass each other during movement of said frames, said ties retaining said springs against relative deflection longitudinally of said frames, the inner and outer portions of the springs on the outer and inner frames, respectively, being untied to accommodate extension and closing of said frames.

3. A couch-bed comprising relatively movable inner and outer frames each including a pair of spaced parallel longitudinal beams with one beam of each frame being disposed between and in parallel relation to the beams on the other frame, said beams each providing a mounting surface all of which surfaces are disposed in substantially a common horizontal plane, a plurality of springs extending in spaced parallel relation to one another transversely of the beams of each of said frames, each of said springs comprising a serpentine length of spring steel bowed upwardly to the center thereof and being secured at the opposite ends thereof to the mounting surfaces on the beams of the respective frame, the springs on each of said frames being spaced apart by a distance greater than the width of the springs, the springs on one frame being staggered with respect to the springs on the other frame each to be located in the space between adjacent springs on said other frame to accommodate relative horizontal movement of said frames transversely of said beams to an extended position wherein the frames define a bed and to a closed position wherein the frames define a couch, the centers of the springs on each frame lying substantially in a longitudinal line, the lines of centers of the springs on each frame always being disposed to a given side of the line of centers of the springs on the other frame, the said lines of centers being disposed closely adjacent one another in the closed position of the frames, longitudinal ties extending between and bracing adjacent springs on each of said frames adjacent the end thereof opposite the other frame, and diagonal ties extending between and bracing adjacent springs on each frame adjacent the center thereof, said diagonal ties extending to opposite sides of the center of the springs with which associated, the inner and outer ends of the diagonal ties of the outer and inner frames, respectively, extending beyond one another in the closed position of the frames, but not beyond the center of the diagonal ties on the inner and outer frames, respectively, whereby the ties do not pass each other during movement of said frames, said longitudinal ties tying the respective springs along approximately one-third the length of the springs and said diagonal ties tying the respective springs within that portion comprising approximately the middle fifth of the spring length, the inner and outer portions of the springs on the outer and inner frames, respectively, being untied to accommodate extension and closing of said frames, said ties retaining said springs against deflection longitudinally of said frames.

4. A couch-bed comprising: an inner frame having a pair of spaced parallel horizontal hollow cross beams, a pair of spaced parallel horizontal longitudinal beams secured to the upper surface of said cross beams, vertical legs supporting said cross beams, and a back rest disposed above said beams along the inner longitudinal edge of said inner frame; an outer frame having a pair of spaced parallel horizontal cross beams each telescopically received in one of said hollow cross beams of said inner frame, a first longitudinal beam secured to said cross beams of said outer frame above the same to lie in substantially a common horizontal plane with the longitudinal beams of said inner frame, a second longitudinal beam disposed between the longitudinal beams of said inner frame and slidable on the top of said hollow cross beams, means rigidly connecting the longitudinal beams of said outer frame, and vertical legs supporting the outer ends of said cross beams of said outer frame; said frames being of substantially the same size and being telescopically associated for movement to an extended position wherein the same define a bed and to a telescoped position wherein the same define a couch; said longitudinal beams each providing a mounting surface all of which surfaces are disposed in substantially a common horizontal plane; a plurality of springs extending in spaced parallel relation to one another transversely of the longitudinal beams of each of said frames, each of said springs comprising a serpentine length of spring steel bowed upwardly to the center thereof and being secured at the opposite ends thereof to the mounting surfaces on the longitudinal beams of the respective frame, the springs on each of said frames being spaced apart by a distance greater than the width of the springs, the springs on one frame being staggered with respect to the springs on the other frame each to be located in the space between adjacent springs on said other frame to accommodate relative horizontal movement of said frames transversely of said longitudinal beams as aforesaid; longitudinal ties extending between and bracing adjacent springs on said inner frame adjacent the inner end thereof, longitudinal ties extending between and bracing adjacent springs on said outer frame adjacent the outer end thereof, diagonal ties extending between and bracing adjacent springs on each of said frames adjacent the center thereof, said diagonal ties extending to opposite sides of the center of the springs with which associated, said ties retaining said springs against deflection longitudinally of said frames; a first cushion of a horizontal area equal to that of said inner frame rested upon the springs of said inner frame, and a second cushion, said second cushion being foldable between the longitudinal edges thereof from an extended position wherein the same is of an area to cover said outer frame and adapted to be

rested upon the springs of said outer frame to a folded position wherein the same is adapted to be rested upon said first cushion and against said back rest to comprise a back rest cushion for the couch-bed in the couch position of said frames.

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