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J. SCHWARTZMAN.
FOLDING COUCH OR BED.
APPLICATION FILED FEB. 21, 1912.

Patented Oct. 29, 1912

4 SHEETS-SHEET 1.

1,042,486.

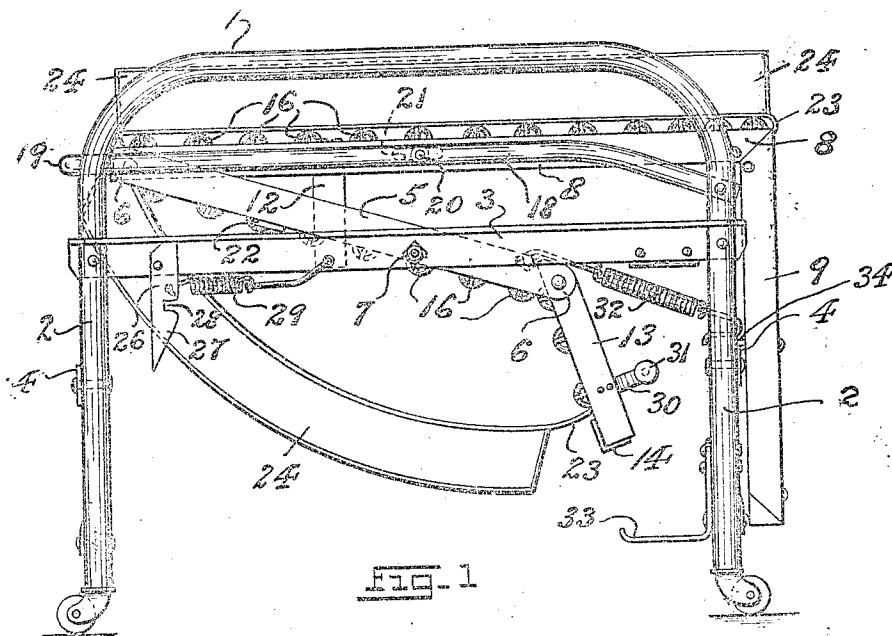


FIG. 1

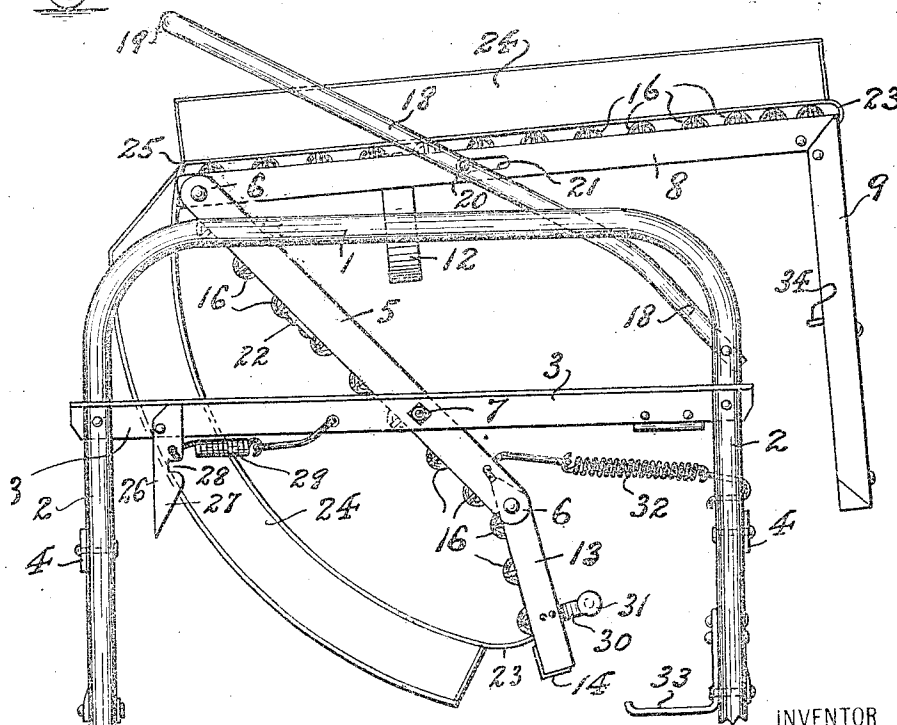


FIG. 2

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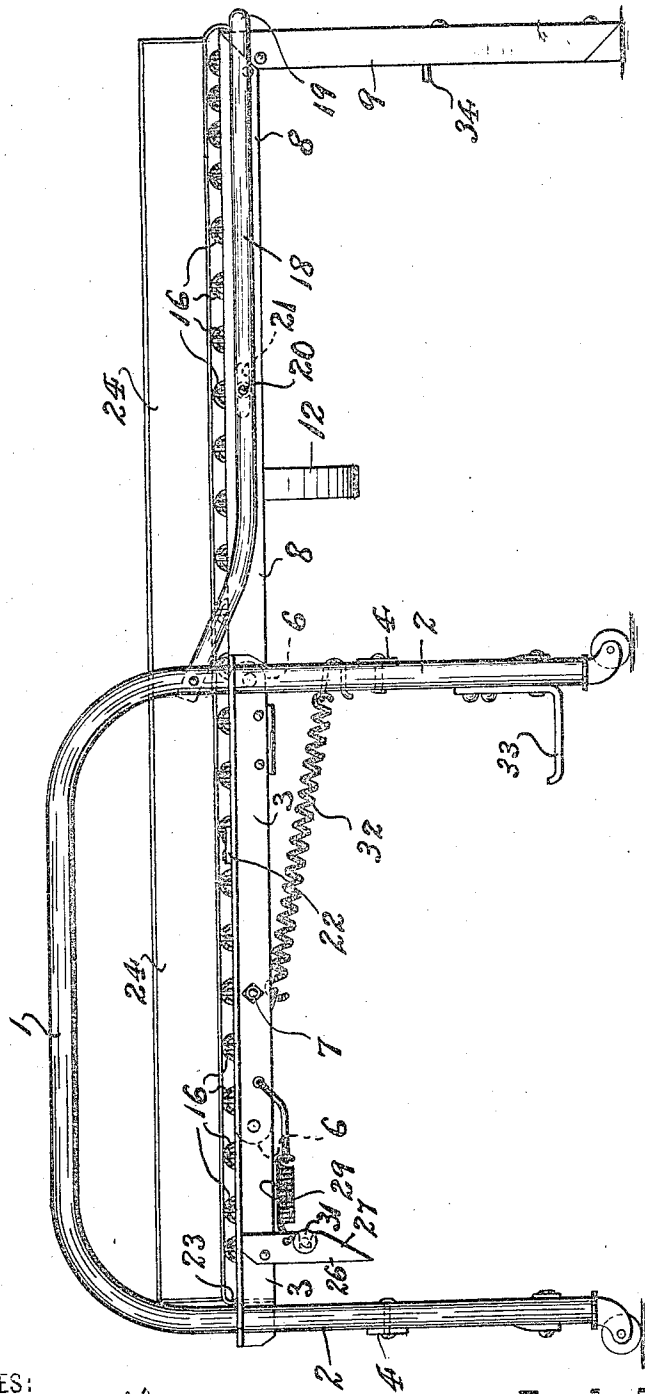


FIG. 1

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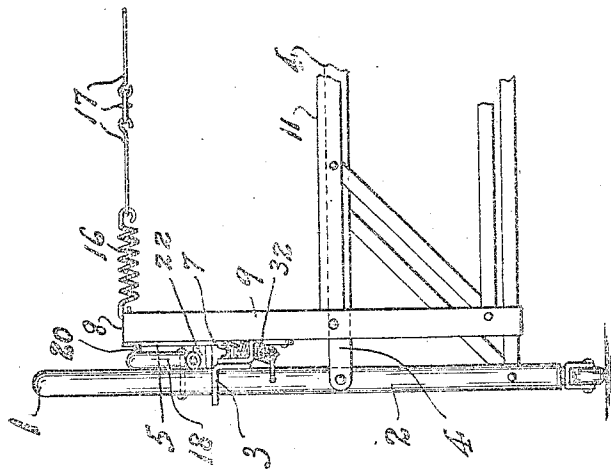


FIG. 4

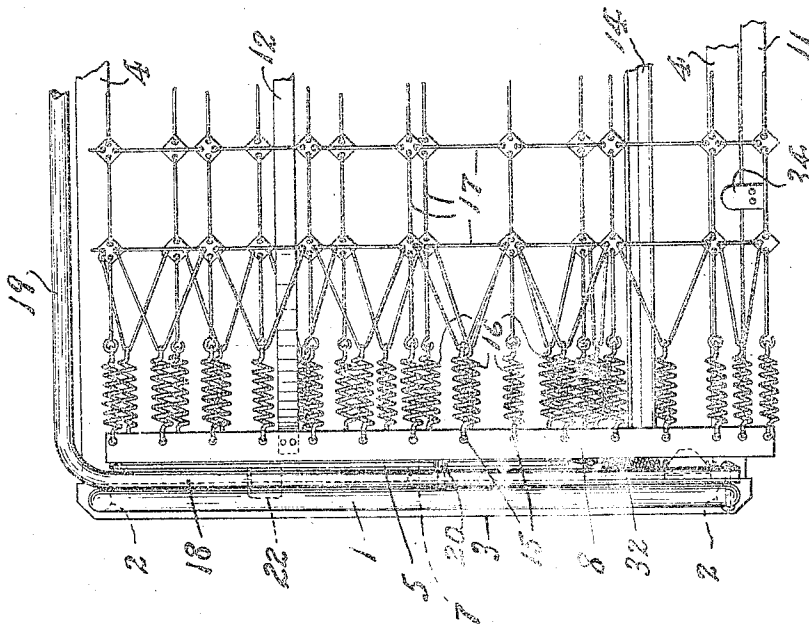


FIG. 5

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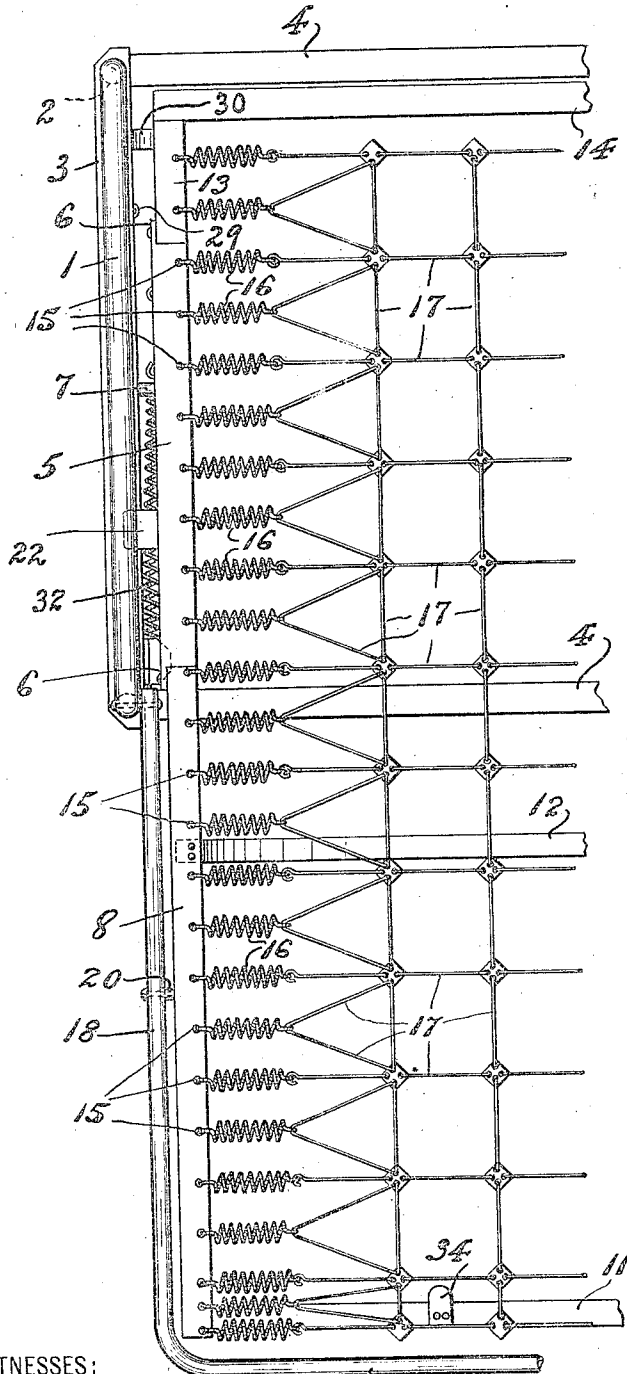
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4 SHEETS—SHEET 4



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UNITED STATES PATENT OFFICE.

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FOLDING COUCH OR BED.

1,042,486.

Specification of Letters Patent.

Patented Oct. 29, 1912.

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To all whom it may concern:

Be it known that I, JACUB SCHWARTZMAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Folding Couches or Beds; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention has reference, generally, to improvements in folding couches, beds, and the like; and, the invention relates, more particularly, to a simple and cheaply constructed, and easily and quickly operated folding couch or bed which may be converted from a single couch or bed into a double couch or bed, or vice versa, by means of a single operation of a controlling lever.

The present invention has for its principal object to provide a compact, simple and easily operated folding couch or bed which may be quickly opened, to increase its accommodations, with the least trouble and inconvenience; and, furthermore, the invention seeks to provide a folding couch or bed provided with a spring mattress, of either woven wire or wire-fabric construction, which is arranged and supported with relation to the folding frame of the couch or bed in such a manner, so that when the couch or bed is opened, the spring-mattress will stretch uniformly level and unbroken throughout the entire width and length of the opened couch or bed, thereby obviating the necessity of using two upholstered or stuffed mattresses of different thicknesses, in order to secure level couch-surface, and permitting the use of such mattresses in uniform thickness, so as to add to the comfort and ease of the couch or bed, when the same is opened to its doubled breadth.

The present invention has for its further object to provide an operative mechanism of great strength and simplicity of construction, which operates and can be operated with ease and convenience when manipulated by means of the movement of

a single controlling lever, all arranged and constructed in such a manner, so as to obviate the necessity of handling the heavy upholstered or stuffed mattresses, which by reason of the construction and operation of the novel folding couch or bed, may be secured in proper relation to and directly upon the spring-mattress, or wire-mesh fabric, and need not be therefore separately handled or removed during either the opening or closing operations of the folding couch or bed.

Other objects of the present invention not at this time more particularly enumerated, will be clearly understood from the following detailed description of the present invention.

With the various objects of the present invention in view, the said invention consists, primarily, in the novel folding couch or bed hereinafter set forth; and, furthermore, this invention consists in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction thereof, all of which will be hereinafter more fully described in the following specification, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is an end elevation of a folding couch or bed in its closed or folded position; Fig. 2 is also an end elevation of the same, illustrating the course of operation of the parts of the couch, during its opening movement; and Fig. 3 is an end elevation of the couch showing its completely opened or unfolded position. Fig. 4 is a detail view, the same being a front elevation of one end of the said folding couch or bed, when it is in closed or folded position. Figs. 5 and 6 are detail plan views of the one end-portion of the folding couch or bed in its closed or folded position and in its open or unfolded position; and, since both ends of the couch or bed are alike, only one end thereof is illustrated, and the upholstered or stuffed mattress being omitted from said views, to more clearly illustrate the general construction of the folding couch or bed.

Similar characters of reference are em-

played in all of the said hereinabove described views, to indicate corresponding parts.

Referring now to the several figures of the said drawings, the reference-character 1 indicates the end-frames or standards of the folding couch or bed, the same providing supporting legs 2. Extending between each pair of said legs 2 of said respective end-frames or standards 1, and secured thereto, in any suitable manner and at a proper elevation, is a bridge-piece 3. Extending longitudinally between the legs 2 of the said end-frames or standards 1, and secured thereto in any suitable manner, are side-frames or struts 4 for uniting the respective end-frames or standards 1 in proper arrangement and relation one with the other. Pivotally connected with said bridge-pieces 3 of the respective end-frames or standards 1 is an articulated frame-work which is adapted to be folded upon itself, and which serves to support the properly stretched spring-mattress to be subsequently described. The said articulated framework comprises laterally extending frame-pieces 5, each frame-piece being provided at its respective ends with perforated hinge-ears 6. The said frame-pieces 5 are pivotally connected with the respective bridge-pieces 3 by means of suitable pivot-studs or bolts 7, and connected in pivotal or hinged relation with the said hinge-ears 6, at the one end-portion of said frame-pieces 5 are extension frame-pieces 8, which are provided at their outer free ends with downwardly extending leg-pieces 9. The leg-pieces 9 of said extension frame-pieces 8 are suitably connected together by means of a longitudinally extending strut-piece or girder 11 which is suitably secured at its opposite ends, in any suitable manner, to the respective leg-pieces 9. Said extendible frame-pieces are further connected, in proper relation with each other, by means of a longitudinally extending brace-piece 12, the main body of which is bent downwardly or depressed between its ends, and is secured at its ends, in any suitable manner, to said extendible frame-pieces at points lying between the respective ends of the latter. Connected in pivotal or hinged relation with said hinge-ears 6 at the other and opposite ends of the lateral frame-pieces 5 are secondary lateral frame-pieces 13, the free ends of which are also suitably connected together by means of a longitudinally extending strut-piece or girder 14, secured by its opposite ends, in any suitable manner, to the said ends of said respective secondary lateral frame-pieces 13. Each of the respective frame-pieces 5, the extension frame-pieces 8 and the secondary lateral frame-pieces 13, are provided adjacent to their marginal and inwardly projecting edges with a plurality of holes or perforations, as 15, which permit

of the proper attachment thereto of a plurality of coiled or tension springs 16. These coiled or tension springs 16 are, furthermore, connected with the lateral ends of a woven-wire body or wire mesh-fabric which forms a spring-mattress 17, and which is thus suspended between and supported by the several articulated frame-pieces hereinabove described. Pivotally connected, at suitable points upon the said end-frames or standards 1, are the end-portions of controlling or operating levers 18, the outer ends of which are connected by means of a longitudinally extending portion 19, which assures the combined and simultaneous operation of both of said levers 18 upon the manipulation of either. Connected with each lever 18 is a pivot-stud or fulcrum-piece 20 which extends into a slotted or elongated opening 21, with which the respective extendible frame-pieces 8 are provided, so as to operatively engage the latter in a movable pivotal relation therewith. Suitably secured in a proper location upon the said lateral frame-pieces 5 are outwardly extending stops 22, which engage said bridge-pieces 3, when the articulated frame-work is in either its closed or opened position, to thereby limit the pivotal action or swing of the said frame-pieces 5, as will be clearly evident. Suitably secured by means of straps or tie-strings 23, or in any other suitable manner, so as to extend over the wire-mesh fabric or spring-mattress 17, in proper relation thereto, is an upholstered or stuffed mattress 24 of uniform thickness, but which is preferably provided with a longitudinally extending joint or hinge-like connection 25, whereby the same may more easily bend or adapt itself to the folded relation of the said articulated frame-work and the wire-mesh fabric or spring-mattress supported in connection therewith. Pivotally connected with each bridge-piece 3, in a proper location, is a downwardly extending latch-member 26 which is provided with a guide-surface 27 and a receiving notch or cut-away portion 28, the said latch-member 26 being yieldably held against the tension of a coiled spring 29 connected therewith, and anchored to said bridge-piece 3. Connected with each of the said secondary lateral frame-pieces 13 is a downwardly extending lug 30 which is provided with an outwardly extending and headed stud 31, which, when the said articulated frame-work is in its opened position, is adapted to engage the said latch-members 26 and is received by the said notch or cut-away portions 28 thereof, whereby the said secondary lateral frame-pieces are rigidly supported in their extended or opened relation. Connected with one leg 2 of each end-frame or standard 1 are coiled springs 32, the opposite ends of which are suitably connected with one end of said respective

lateral frame-pieces 5, the said springs 32 aiding in returning and maintaining the said lateral frame-pieces 5 in their folded or closed positions. Also connected with one leg 2 of each end-frame or standard 1, in any suitable manner, is a foot-piece 33, the same being adapted to receive the foot of the operator, thereby enabling the operator to steady said end-frame or standard 1 when operating the controlling lever 18, to open or close the articulated frame-work. Said longitudinally extending strut-piece or girder 11 may also be provided with stop-lugs or projections 34, which, when the articulated frame-work is arranged in its closed position, engage one of the said longitudinally extending side-frames or struts 4 uniting said end-frames or standards 1, thus supporting, at one side, the articulated frame-work against downward movement, as will be clearly understood from an inspection of the several figures of the drawings.

Briefly the manner of operating the folding couch or bed, constructed as herein-above described, and the movements of its parts, is as follows:—The operator places his or her foot upon the said foot-piece 33, and then grasps one of the said controlling levers 18, and swings the same upwardly and over or outwardly. The movement of said levers 18, operating through the pivotal connections between the same and the extension frame-pieces 8, lifts upwardly and moves forwardly the said frame-piece 8. The lateral frame-pieces 5, being connected with the said extension frame-pieces 8, are thereupon oscillated upon their pivots or fulcrums 7, so as to swing the same upwardly and over, this movement carrying rearwardly the secondary lateral frame-piece 13, as will be clearly evident from an inspection of Fig. 2 of the accompanying drawings. The continued movement of the several frame-pieces, in this manner, carries the frame-pieces finally into their fully opened or unfolded positions, as represented in Figs. 3 and 6 of the drawings. As said secondary lateral frame-pieces 13 move into their finally opened position, the respective headed-studs 31 are carried into contact with the guide-surface 27 of said respective latch-members 26, which thereupon yield sufficiently, to allow the said headed studs 31 to move upwardly until opposite the notched or cut-away portions 28, whereupon the tension of said coiled springs 29 pulls said latch-members 26 forward, so that the said notch portions 28 surround the said headed studs. The latch-members are thus arranged in their supporting relation to the said secondary lateral frame-pieces. As the said articulated frame-pieces are thus opened they assume an alined position relatively to one another, and thus support both the spring-mattress and the upholstered mat-

tress in a continuous and uniform level arrangement, as will be clearly evident, and on account of the respective mattresses being connected with the articulated frame-work, in the manner hereinabove described, they necessarily are governed or controlled thereby in the opening or folding movements of the couch or bed. When it is desired to bring the parts of the couch or bed into their folded relation or return the same to its normal initial position, one of the said levers 18 is grasped and moved in an opposite direction, and the parts above described move in a reverse order into their folded positions.

It will thus be clearly seen, both from the above specification and the accompanying drawings, that the present invention provides a novel and simple construction of folding couch or bed, the parts of which are caused to assume their folded or opened relations by the simple operation of a lever, at the same time, easily manipulating the upholstered or stuffed mattress connected therewith; the parts also providing in either their opened or closed relation a uniformly level and unbroken surface in the supporting spring-mattress formed by the woven wire or wire-mesh fabric connected with and spread by the articulated framework of the couch or bed.

I am aware that changes may be made in the general arrangements and combinations of the various devices and parts, as well as in the details of the construction of the said parts, without departing from the scope of the present invention, as described in the foregoing specification, and as defined in the claims which are appended thereto. Hence, I do not limit my present invention to the exact arrangements and combination of the various devices and parts as herein set forth, and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

I claim:—

1. In a folding couch, a pair of fixed end-frames, a rotary frame having a lateral pivoted-section connected upon said fixed end-frames, an upper extendible frame-section pivotally connected with one end of said rotary frame, lever-members fulcrumed upon said end-frames and pivotally connected with said extendible frame-section, means for supporting said extendible frame-section when unfolded, and a spring-mattress stretched upon and supported by said rotary frame and said extendible frame-section.

2. In a folding couch, a pair of fixed end-frames, rotary frames having lateral pivoted sections connected upon said fixed end-frames, stops secured upon each of said rotary frames adapted to engage with portions of said end-frames to limit the rotary

movement of said rotary frames, upper extendible frame-sections pivotally connected with one end of each rotary frame, lever-members fulcrumed upon said end-frames and pivotally connected with said extendible frame-sections, supporting legs connected with the free ends of said extendible frame-sections, and a spring-mattress stretched upon and supported by said rotary frames and said extendible frame-sections.

3. In a folding couch, a pair of fixed end-frames, rotary frames having lateral pivoted sections mounted upon said end-frames, stops secured upon each rotary frame adapted to engage with portions of said end-frames to limit the rotary movement of said rotary frames, headed studs connected with said lateral pivoted sections of said rotary frames, a latch-mechanism yieldably mounted upon each end-frame adapted to engage said headed studs to support said lateral pivoted section of said rotary frames in unfolded position, upper extendible frame-sections pivotally connected with one end of each rotary frame, lever-members fulcrumed upon said end-frames and pivotally connected with said extendible frame-sections, means for supporting said extendible frame-sections when unfolded, and a spring-mattress stretched upon and supported by said rotary frames and said extendible frame-sections.

4. In a folding couch, a pair of fixed end-frames, rotary frames having lateral pivoted sections mounted upon said end-frames, stops secured upon each rotary frame adapted to engage with portions of said end-frames to limit the rotary movement of said rotary frames, coil-springs connected between one of the ends of each rotary frame and an end-frame, headed studs connected with said lateral pivoted sections of said rotary frames, a latch-mechanism yieldably mounted upon each end-frame adapted to engage said headed-studs to support said

lateral pivoted sections of said rotary frames in unfolded position, upper extendible frame-sections pivotally connected with one end of each rotary frame, lever-members fulcrumed upon said end-frames and pivotally connected with said extendible frame-sections, supporting legs connected with the face ends of said extendible frame-sections, and a spring-mattress stretched upon and supported by said rotary frames and said extendible frame-sections.

5. In a folding couch, a pair of fixed end-frames, rotary frames having lateral pivoted sections mounted upon said end-frames, stops secured upon each rotary frame adapted to engage with portions of said end-frames to limit the rotary movement of said rotary frames, coil-springs connected between one of the ends of each rotary frame and an end-frame, headed studs connected with said lateral pivoted sections of said rotary frames, a latch-mechanism yieldably mounted upon each end-frame adapted to engage said headed studs to support said lateral pivoted sections of said rotary frames in unfolded position, upper extendible frame-sections pivotally connected with one end of each rotary frame, lever-members fulcrumed upon said end-frames and pivotally connected with said extendible frame-sections, supporting legs connected with the free ends of said extendible frame-sections, a spring-mattress stretched upon and supported by said rotary frames and said extendible frame-sections, and foot-pieces connected with said end-frames for bracing the same when operating the movable parts of the couch.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 2nd day of February, 1912.

JACUB SCHWARTZMAN.

Witnesses:

BENJAMIN WEIRS,
GEORGE D. RICHARDS.