Sept. 30, 1958 M. S. FIRSEL 2,853,717

MOTOR-OPERATED SOFA-BED

Filed June 15, 1955 3 Sheets-Sheet 1

FIG. 1

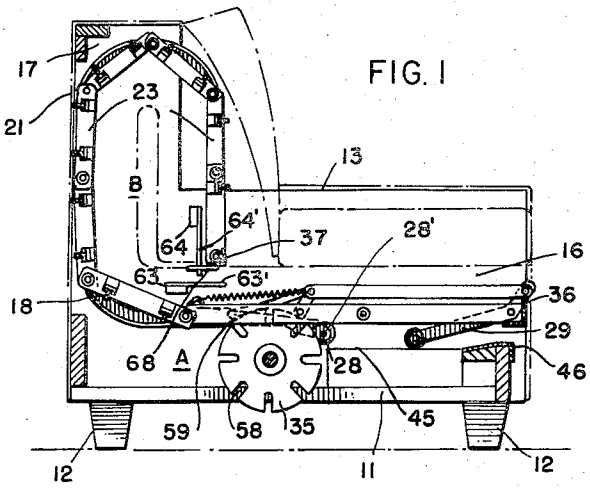


FIG. 9

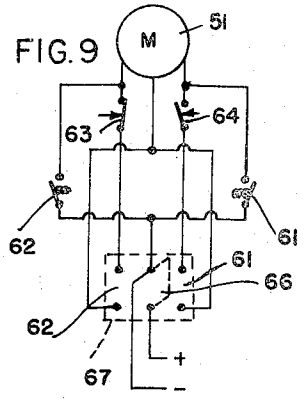
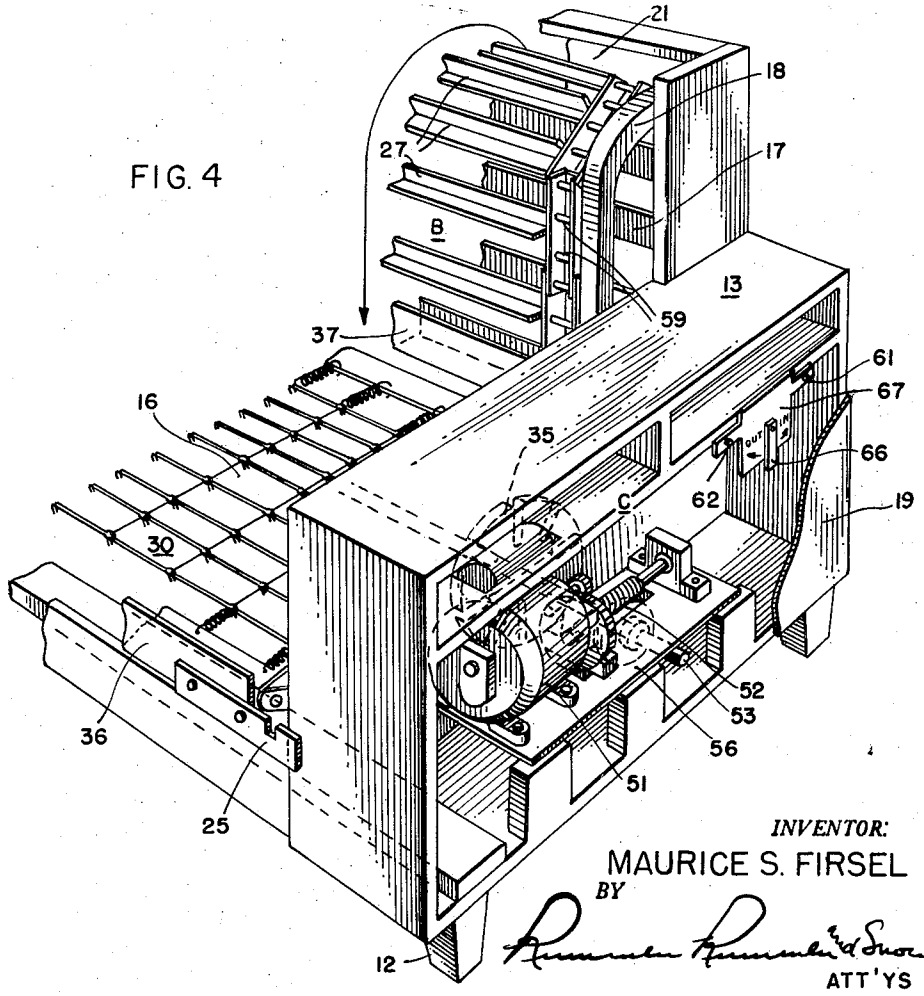


FIG. 4



INVENTOR:

MAURICE S. FIRSEL

BY

Rummler, Rummler & Snow

ATT'YS

Sept. 30, 1958 M. S. FIRSEL 2,853,717

MOTOR-OPERATED SOFA-BED

Filed June 15, 1955 3 Sheets-Sheet 2

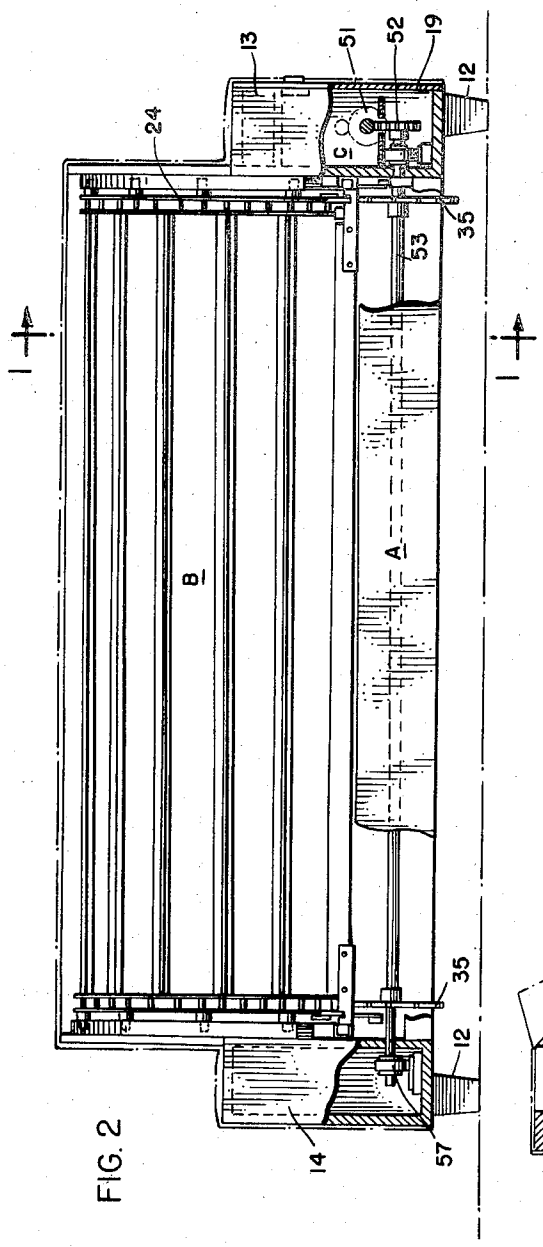


FIG. 2

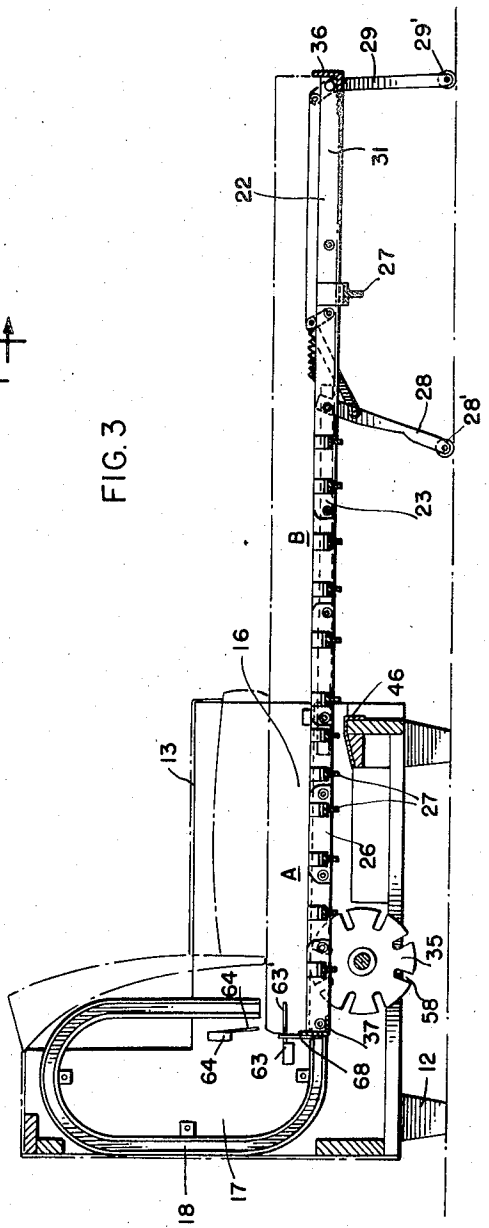


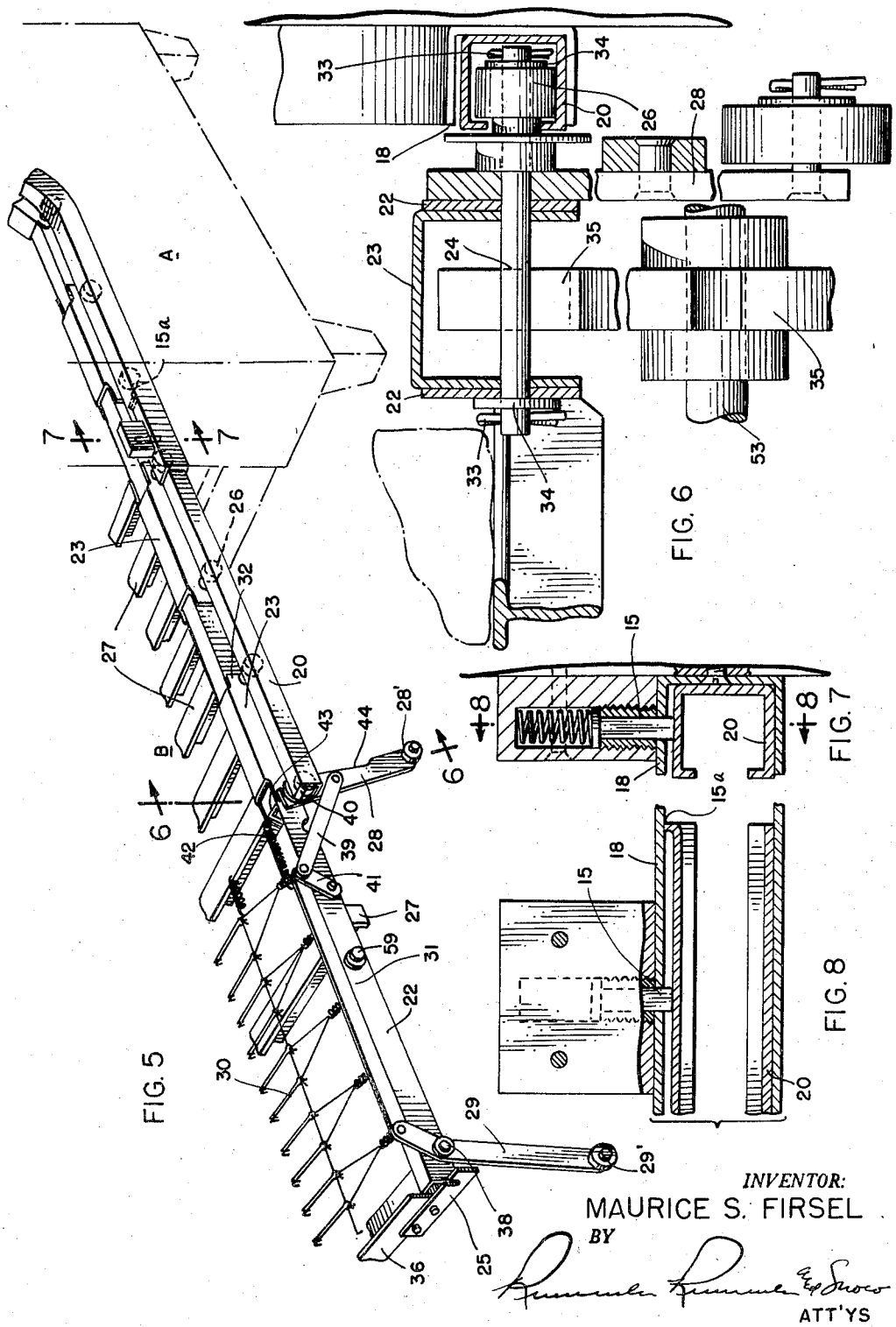
FIG. 3

INVENTOR:
MAURICE S. FIRSEL
BY
Rummler Rummler and Snow
ATT'YS

Sept. 30, 1958 M. S. FIRSEL 2,853,717

MOTOR-OPERATED SOFA-BED

Filed June 15, 1955 3 Sheets-Sheet 3



INVENTOR:

MAURICE S. FIRSEL

BY

Kenyon Kenyon Reilly Carr & Chapin

ATT'YS

United States Patent Office 2,853,717 Patented Sept. 30, 1958

2,853,717

MOTOR-OPERATED SOFA-BED

Maurice S. Firsel, Chicago, Ill.

Application June 15, 1955, Serial No. 515,718

9 Claims. (Cl. 5—17)

The main objects of this invention are to provide an improved form of convertible sitting-sleeping pieces of furniture commonly referred to as sofa beds; to provide an improved piece of furniture of this kind convertible from one use to the other either manually or by means of a motor drive; to provide an improved construction of a flexible mattress-supporting frame collapsible within or extendible on a mounting frame; to provide an improved arrangement of a motor-drive means for shifting the mattress-supporting frame from one position to another; to provide improved switch means for manually starting the motor and automatically stopping the same when the mattress-supporting frame reaches either limit of its travel in conversion from one use to another; to provide improved automatically extendible and retractible supplemental support for the mattress-supporting frame in its bed position; to provide an improved leg support for the outer section of the mattress-frame when in its bed-extended position; and to provide an improved convertible sofa-bed of this kind which is simple and compact in its construction, hence economical to manufacture, and which is especially convenient to use with a motor drive.

In the embodiment shown in the accompanying drawings;

Figure 1 is a transverse, sectional, elevation of a motor-operated type of sofa-bed constructed in accordance with this invention, the parts being shown in their collapsed sofa-arrangement, with the bed-mattress and sofa cushions shown in dotted outline.

Fig. 2 is a front elevation of the same, some of the parts being broken away to more clearly indicate the interior structure; the line 1—1 being the plane whereon the view of Fig. 1 is taken.

Fig. 3 is a view similar to Fig. 1 but showing the sofa-bed in its extended bed arrangement, the bed-mattress and sofa cushions being shown in dotted outline.

Fig. 4 is an enlarged, fragmentary, partly-sectional, perspective of one end of the sofa-bed arrangement, but with the bed mattress and sofa cushions omitted.

Fig. 5 is an enlarged, fragmentary perspective of the mattress-supporting frame in its bed-extended position with one end of the mounting frame shown in phantom.

Fig. 6 is a further enlarged, transverse, fragmentary, sectional detail of the mattress-supporting frame as supported on the main mounting frame, the view being taken on the plane of the line 6—6 of Fig. 5.

Fig. 7 is an enlarged, transverse, fragmentary, sectional detail taken on the line 7—7 of Fig. 6.

Fig. 8 is a vertical, sectional view of what is shown in Fig. 7, taken on the plane of the line 8—8; and

Fig. 9 is a diagrammatic illustration of the motor circuit and the control switches.

The essential concept of this invention involves a flexible mattress-supporting frame slidably arranged on mounting-frame tracks and connected by a gear-and-rack type mechanism for shifting the mattress-frame between retracted-sofa and extended-bed positions, a motor when used being connected to the gear and controlled by manually-actuated starting and automatically-operated stopping switch means, the outer section of the mattress-supporting frame having a supporting leg structure automatically shiftable between supporting and folded positions with the extension and retraction of the mattress-supporting frame.

It is to be understood that "sofa-bed," as herein used is intended to include other specific forms of convertible furniture such as chairs.

The herein shown motor-operated type of sofa-bed, embodying the foregoing concept comprises, a main mounting frame A wherein is slidably arranged a mattress-supporting frame B, the opposite shifting of which, between retracted and extended positions with respect to the main mounting frame A, is shown to be effected by a motor-drive mechanism C as controlled by manual and automatic switch means D.

The main mounting frame A comprises, a base 11 supported on the usual low legs 12 and spanning and secured to arm-rest ends 13 and 14, thereby providing a horizontally-disposed sofa portion 16 and an upright, rear, storage portion 17, and whereon is arranged track members 18 slidably supporting the mattress-supporting frame B.

As the drawings more or less indicate, this main mounting frame A is a wood structure. The base 11 is open and the arm-rest ends 13 and 14 are hollow, being closed by panels 19. The rear of the upright portion 17 is closed by a panel 21.

The track members 18 are in the form of continuous, opposed, channels located at the opposite ends of the main mounting frame A and having telescoping extensions 20 located in their outer portions. These track members 18 are disposed horizontally along the sofa portion 14 and vertically along and doubled back within the upright storage portion 17 of the mounting frame A.

The mattress-supporting frame B is a flexible construction comprising, a sofa-section 22 and an attached section of short links 23. The links are hinged together, and to the sofa-section 22 by pins 24. At their outer ends the pins 24 journal rollers 26, which ride in the channel track members 18 and the track extension 20. The sofa-section 22 and the links 23 are transversely spanned by T-bars 27 serving as mattress-supporting slats for the links section 23 and as a brace for the sofa-section 22.

The C-shaped extensions 20 (see Fig. 5) are telescopically supported in the respective horizontal sections of the track members 18. They are drawn out from and shifted back into such sections automatically with the extension and retraction of the mattress-supporting frame B respectively by the engagement of the forwardmost rollers 24 and a shoulder 40 (see Fig. 5) and the brackets 25. The outward movement of such extensions 20 is limited by the spring-pressed detents 15 contacting the shoulders 15a formed at the inner ends of the extensions 20 (see Figs. 5, 7 and 8). The brackets 25 (see Fig. 5) are secured to the outer front ends of the mattress-supporting frame B and extend laterally outward therefrom to abut the outer ends of the extensions 20, as the frame B moves into its fully-retracted position.

The sofa-section 22 mounts a leg structure 28—29 connected by link means 31, presently to be described more fully. Also, the sofa-section 22 is spanned by the conventional, mattress-supporting, spring-tensioned wire fabric 30 (see Fig. 4).

The links 23, as well as the sofa-section 22, are channel shaped. Alternate links 23 are slightly wider than the intermediate links and are bifurcated to form ears 32 (see Fig. 5). These ears 32 fit over the adjacent ends of the intermediate links and permit the hinging together of the links 23 by the pins 24.

The hinge pins 24 are retained in place by cotter pins

33 between which, and the links **23** and the roller **36**, are interposed the usual washers **34**. These hinge pins **24**, thus positioned within the channel links **23**, simulate a gear-rack for coaction with a gear-like element **35** of the motor-drive mechanism C to effect the opposite shifting of the mattress-supporting frame B, as presently will be described.

The outer ends of the sofa-section **22** and the inner ends of the innermost links **23** are connected together by transverse braces **36** and **37**, here shown in the form of angle bars.

The hereinbefore-mentioned leg structure for support of the sofa-section **22**, of the mattress-supporting frame B in its extended bed position, comprises the legs **28** and **29** and the spring-actuated link means **31**.

The legs **28** are pivoted on the opposite ends of the hinge pins **24** which connect the sofa-section **22** to the next adjacent links **23**. On its lower end the leg **28** journals the usual roller **28'**. The legs **29** are pivoted adjacent the outer ends of the sofa-section **22** and each, likewise, journals a roller **29'**.

The links **31** are hinged to the upper ends of the respective legs **29** and extend rearwardly along the sofa-section **22**. At the rear end each link **31** is hinged to link **39** connected to the leg **28** below its pivot to the sofa-section **22**, and to short link **41** hinged to the sofa-section **22**. By such link means, the legs **28** and **29** swing in opposite directions up against and down from the under side of the sofa-section **22**.

Springs **42**, connected to the rear ends of the links **31** and to posts **43** on the sofa-section **22**, normally bias the legs **28** and **29** into their extended sofa-section-supporting positions.

The legs **28** are formed with cam surfaces **44** which strike plates **46**, on the upper forward corners of the mounting frame A, so as to cause the automatic folding of the legs during the movement of the mattress-supporting frame B toward its storage position in the mounting frame A.

In their folded positions the leg rollers **28'** ride on ledges **45** on the frame A (see Fig. 1), as the mattress-supporting section A completes its movement into its fully-retracted position or initiates its movement therefrom.

The motor-drive mechanism C comprises, a motor **51** connected by a conventional reduction gearing **52** (see Figs. 2 and 4) to a shaft **53** mounting the driven elements **35**.

The motor **51** is a reversing type and, with the reduction gearing **52**, is here shown housed in the arm rest **13** on a platform **56**.

The shaft **53** extends longitudinally across the mounting frame A, slightly rearward of the longitudinal medial plane of the frame A. The shaft **53** has its end, opposite that of the motor **51**, journaled in a bearing **57** in the arm-rest end **14**.

The driven elements **35** are keyed to the shaft **53** in alinement with the medial plane of the channel links **23**. These elements **35** are formed with radial slots **58** extending inwardly from their peripheries. The slots **58** are spaced apart circumferentially equal to the spacing of the hinge pins **24** of the links **23**, so that as the elements **35** are rotated the slots **58** engage the hinge pins **24** and in gear-like fashion effect the shifting of the mattress-supporting frame B between its collapsed, storage position and its extended position on the mounting frame A.

Stud pins **59** (see Figs. 1 and 3) are secured to the outer faces of the sofa-section **22** near the rear part thereof, and are positioned to be seated in and engage the slots **58** in the elements **35** when the mattress-supporting frame B is adjacent its fully-retracted position on the mounting frame A.

The switch control means D, for the motor-drive mechanism C, may be any one of several different possible arrangements. As here shown it comprises, a pair of manually-actuated, motor-starting switches **61** and **62**, a pair of automatically-acting motor-stop switches **63** and **64**, and a circuit-directional switch **66**.

The switches **61** and **62** are normally open, press-button type which, along with the conventional double-pole double-throw switch **66**, are mounted on a panel **67** on the rear outer face of the arm-rest **13** (see Fig. 4).

The switches **63** and **64**, of the micro-type, are fixed on the inner faces of one end of the mounting frame A at points adjacent where the innermost links **23**, of the mattress-supporting fame A, come to rest when the frame B respectively is in its retracted, storage position and its bed-extended position on the mounting frame A, as will be most apparent from Figs. 1 and 3.

The switch arms **63'** and **64'**, of these switches **63** and **64**, are biased to normally close the circuit to the motor **51**. A finger **68** (Figs. 1 and 3), on the angle bar **37**, spanning the innermost link **23** of the mattress-supporting frame A, is positioned to successively engage these respective switch arms **63'** and **64'** to open the switches **63** and **64** when the mattress-supporting frame B reaches the opposite limits of its travel.

It is because one or the other of these switches **63** and **64** is always open, that it is necessary to provide the directional switch **66**, the shifting of which serves to establish a circuit to the motor **51** subject to the depressing of the appropriate, manually-controlled switches **61** or **62**.

For example, when the mattress-supporting frame B is in its collapsed, storage position in the upright portion **17** of the mounting frame A, the "in" travel micro-switch **64** is open. A shifting of the directional switch **66** establishes a circuit to the motor **51** subject to the depression of the "out" start switch **61**. However, the button for this switch **61** must be held depressed until the mattress-supporting frame B has moved sufficiently to retract the finger **68** from engagement with the switch arm **64'**.

Likewise, when the mattress-supporting frame B is in its bed-extended position, the micro-switch **63** is open. Hence, to effect a return of the mattress-supporting frame B to its retracted position within the mounting frame A, the directional switch **66** must be shifted to restore the possibility of a circuit to the motor **51** upon the depression of the "in" start switch **62**—which must be held closed until the mattress-supporting frame B has moved a sufficient distance to disengage the finger **68** from the switch arm **63'**.

Although this type of unit has been especially constructed for operation by a motor drive it is to be understood that the shifting of the mattress-supporting frame may be effected manually in at least two ways. One would be to provide an opening in the arm-rest end **13** through which a crank could be inserted to engage a stud shaft on the gear-like element **35**. Another manner of effecting manual operation would be to put some handles on the transverse brace **36** of the mattress-supporting frame B whereby one could pull out and push in this latter frame B. Obviously, when constructed for manual operation not only would the motor mechanism be omitted but also the manual and automatic switch means **D**.

The operation of this improved type of sofa-bed, for converting from sofa to bed—and the reverse—is believed to be quite apparent from the foregoing description. When motor-driven the operation would be as follows:

Assume that the sofa-bed is in sofa use and is to be converted to a bed. After removing the sofa cushions—here shown in dotted outline—the directional switch **66** is first shifted forwardly upward (to the left) toward the "out" legend on the panel **67**. This establishes the possibility of current to the motor **51**. Upon depressing the button for the "out" start switch **61**, and holding it depressed for a moment, the motor will initiate the movement of the mattress-supporting frame A outwardly on the tracks **18**. When there has been sufficient move-

ment to disengage the finger 68 from the switch arm 64' the button for the switch 62 may be released and the mattress-supporting frame B will continue its outward movement toward the bed-extended position.

As the mattress-supporting frame B starts its outward movement the rollers 29' on the legs 29 move along the ledges 45. As these rollers pass over the cam plates 46, outwardly of the front of the mounting frame A, the springs 42 cause the leg-link structure 28—29—31 to move into sofa-section supporting position, as shown in Figs. 3 and 5. As the mattress-supporting frame B approaches its forwardly-extended position the forwardmost roller 24 on the mattress-supporting frame B contacts the shoulder 40 and causes the track extensions 20 to be shifted outwardly in the tracks 18, to the limit of their travel as permitted by the spring-pressed stop pins 15 and shoulders 15a (see Figs. 5, 7 and 8). When the mattress-supporting frame B reaches the limit of its forwardly-extended position, the finger 68, on the rear cross brace 37, contacts the switch-arm 63' and opens the switch 63. The motor is thus stopped. The sofa-bed is ready for bed use.

When it is desired to restore the sofa-bed to sofa use, the directional switch 66 is shifted rearwardly upward (to the right of Fig. 4) toward the "in" legend on the panel 67. This establishes the possibility of a circuit to the motor 51 which may be completed by the depression of the button for the "in" start switch 62. As for the switch 61, the button for switch 62 must be held depressed until the mattress-supporting frame B has moved sufficiently rearward as to disengage the finger 68 from the switch arm 63'. The closing of that switch 63 will permit the motor to continue the retraction of the mattress-supporting frame B until it reaches the inner limit of its retracted movement. As this frame B approaches its completely retracted position, the brackets 25, on the forward ends of the sofa-section 22, will abut the ends of the track extensions 20 and shift them back into their fully-retracted positions in the tracks 18.

When the mattress-supporting frame B reaches the inner limit of its travel, the finger 68, on the rear cross brace, contacts the switch arm, 64' and opens the switch 63. The motor stops.

Upon replacing the sofa cushions the sofa-bed is ready for sofa use.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, tracks arranged on the ends of the mounting frame along the horizontal portion and doubled upon themselves vertically within the upright portion of the mounting frame, a mattress-supporting frame consisting of a sofa-section substantially coextensive with the horizontal portion of the mounting frame and a plurality of pivotally-connected link sections, means arranged laterally of the mattress-supporting frame slidably supporting the frame on the tracks for movement between a collapsed position within the vertical portion of the mounting frame and an extended position along and forwardly of the horizontal portion of the mounting frame, legs hinged adjacent the front and rear lateral sides of the sofa-section of the mattress-supporting frame, link means connecting the legs to effect a simultaneous swinging of the legs between folded and extended positions, a motor housed in the mounting frame and connected to effect the opposite shifting of the mattress-supporting frame, and manual and automatic switch-means for respectively starting and stopping the motor.

2. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, tracks arranged on the ends of the mounting frame along the horizontal portion and doubled upon themselves vertically within the upright portion of the mounting frame, a mattress supporting frame consisting of a sofa-section substantially coextensive with the horizontal portion of the mounting frame and a plurality of pivotally-connected link sections, means arranged laterally of the mattress-supporting frame slidably supporting the frame on the tracks for movement between a collapsed position within the vertical portion of the mounting frame and an extended position along and forwardly of the horizontal portion of the mounting frame, legs hinged adjacent the front and rear lateral sides of the sofa-section of the mattress-supporting frame, link means connecting the legs to effect a simultaneous swinging of the legs between folded and extended positions, a spring normally urging the legs into their folded positions the innermost leg being positioned on the sofa-section to engage the mounting frame during the retraction of the mattress-supporting frame and effect the folding of the legs against the mattress-supporting frame, a motor housed in the mounting frame and connected to effect the opposite shifting of the mattress-supporting frame, and manual and automatic switch-means for respectively starting and stopping the motor.

3. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, a motor housed in the mounting frame, motor-driven elements journaled in the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins to effect the opposite shifting of the mattress-supporting frame on the track members between collapsed sofa and bed-extended positions, and manual and automatic switch-means for respectively starting and stopping the motor.

4. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, channel-shaped track extensions telescopically supported in the horizontal parts of the track members and movable into and out of extended relationship with the forward ends of the track members when the mattress-supporting frame moves into and out of its forwardmost position on the mounting frame, a motor housed in the mounting frame, motor-driven elements journaled on the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins to effect the opposite shifting of the mattress-supporting frame on the track members between the collapsed sofa and bed-extended positions, and manual and automatic switch means for respectively starting and stopping the motor.

5. A convertible sofa-bed comprising, a main mount-

ing frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, channel-shaped track extensions telescopically supported in the horizontal parts of the track members and movable into and out of extended relationship with the forward ends of the track members when the mattress-supporting frame moves into and out of its forward-most position on the mounting frame, coacting stop means on the track members and the track extensions for limiting the forward movement of the track extensions, a motor housed in the mounting frame, motor-driven elements journaled on the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins to effect the opposite shifting of the mattress-supporting frame on the track members between collapsed sofa and bed extended positions, and manual and automatic switch means for respectively starting and stopping the motor.

6. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of sofa-section links substantially coextensive with the horizontal portion of the mounting frame and a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, channel-shaped track extensions telescopically supported in the horizontal parts of the track members and movable into and out of extended relationship with the forward ends of the track members when the mattress-supporting frame moves into and out of its forward-most position on the mounting frame, coacting stop means on the track members and the track extensions for limiting the forward movement of the track extensions, a motor housed in the mounting frame, motor-driven elements journaled on the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins to effect the opposite shifting of the mattress-supporting frame on the track members between collapsed sofa and bed-extended positions, manual and automatic switch means for respectively starting and stopping the motor, a leg pivoted on the hinge pins respectively connecting the inner ends of the sofa-section links of the mattress-supporting frame and the next inward links, a leg pivoted adjacent the outer ends of each of the sofa links, link means connecting the legs whereby they are oppositely and simultaneously shifted between folded and extended positions, and spring normally urging the legs toward their extended positions with respect to the sofa-section links, the first-mentioned legs being adapted to engage the mounting frame when the mattress-supporting frame is being retracted to cause the folding of both legs into their retracted positions up against the sofa section links of the mattress-supporting frame.

7. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, and means journaled in the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins and operable to effect the opposite shifting of the mattress-supporting frame on the track members between collapsed sofa and bed-extended positions.

8. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, channel-shaped track extensions telescopically supported in the horizontal parts of the track members and movable into and out of extended relationship with the forward ends of the track members when the mattress-supporting frame moves into and out of its forward-most position on the mounting frame, and means journaled on the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins and operable to effect the opposite shifting of the mattress-supporting frame on the track members between the collapsed sofa and bed-extended positions.

9. A convertible sofa-bed comprising, a main mounting frame having a horizontal forward portion and an upright rear portion, opposed channel-shaped track members arranged on the opposite inner ends of the mounting frame and extending along the horizontal portion and doubled vertically upon themselves within the upright portion of the mounting frame, a mattress-supporting frame consisting of sofa-section links substantially coextensive with the horizontal portion of the mounting frame and a plurality of channel-shaped links, alternate links having their ends bifurcated to embrace the ends of the intermediate links, pins extending through the overlapping parts of the links for hingedly connecting them together, rollers on the outer ends of the hinge pins seated in the channel-shaped track members for supporting the mattress-supporting frame on the track members, channel-shaped track extensions telescopically supported in the horizontal parts of the track members and movable into and out of extended relationship with the forward ends of the track members when the mattress-supporting frame moves into and out of its forward-most position on the mounting frame, coacting stop means on the track members and the track extensions for limiting the forward movement of the track extensions, means journaled on the mounting frame at opposite sides of the mattress-supporting frame and engaging the hinge pins and operable to effect the opposite shifting of the mattress-supporting frame on the track members between collapsed sofa and bed-extended positions, a leg pivoted on the hinge pins respectively connecting the inner ends of the sofa-section links of the mattress-supporting frame and the next inward links, a leg pivoted adjacent the

outer ends of each of the sofa links, link means connecting the legs whereby they are oppositely and simultaneously shifted between folded and extended positions, and springs normally urging the legs toward their extended positions with respect to the sofa-section links, the first-mentioned legs being adapted to engage the mounting frame when the mattress-supporting frame is being retracted to cause the folding of both legs into their retracted positions up against the sofa section links of the mattress-supporting frame.

References Cited in the file of this patent

UNITED STATES PATENTS

977,529	Millert	Dec. 6, 1910
1,978,902	Jackson	Oct. 30, 1934
2,584,145	Martin	Feb. 5, 1952
2,640,997	Hoopingarner	June 9, 1953

FOREIGN PATENTS

701,080	Great Britain	Dec. 16, 1953