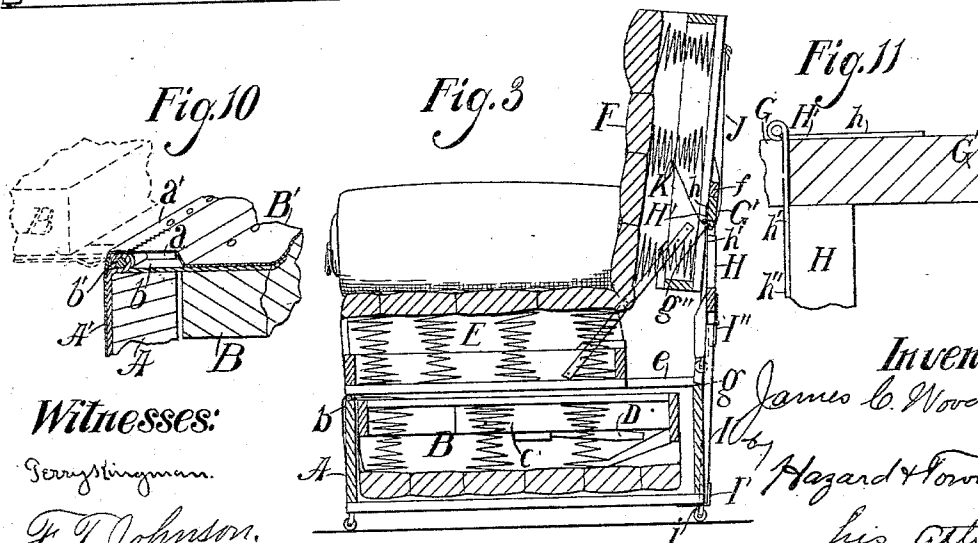
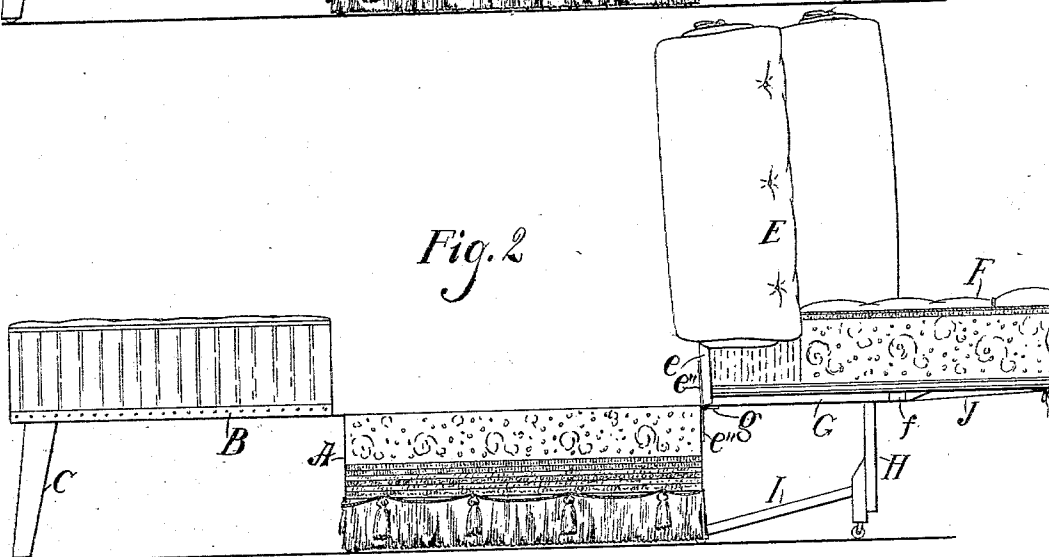


2 Sheets—Sheet 1.

No. 559,834.

Patented May 12, 1896.



Witnesses:

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F. T. Johnson.

Inventor:

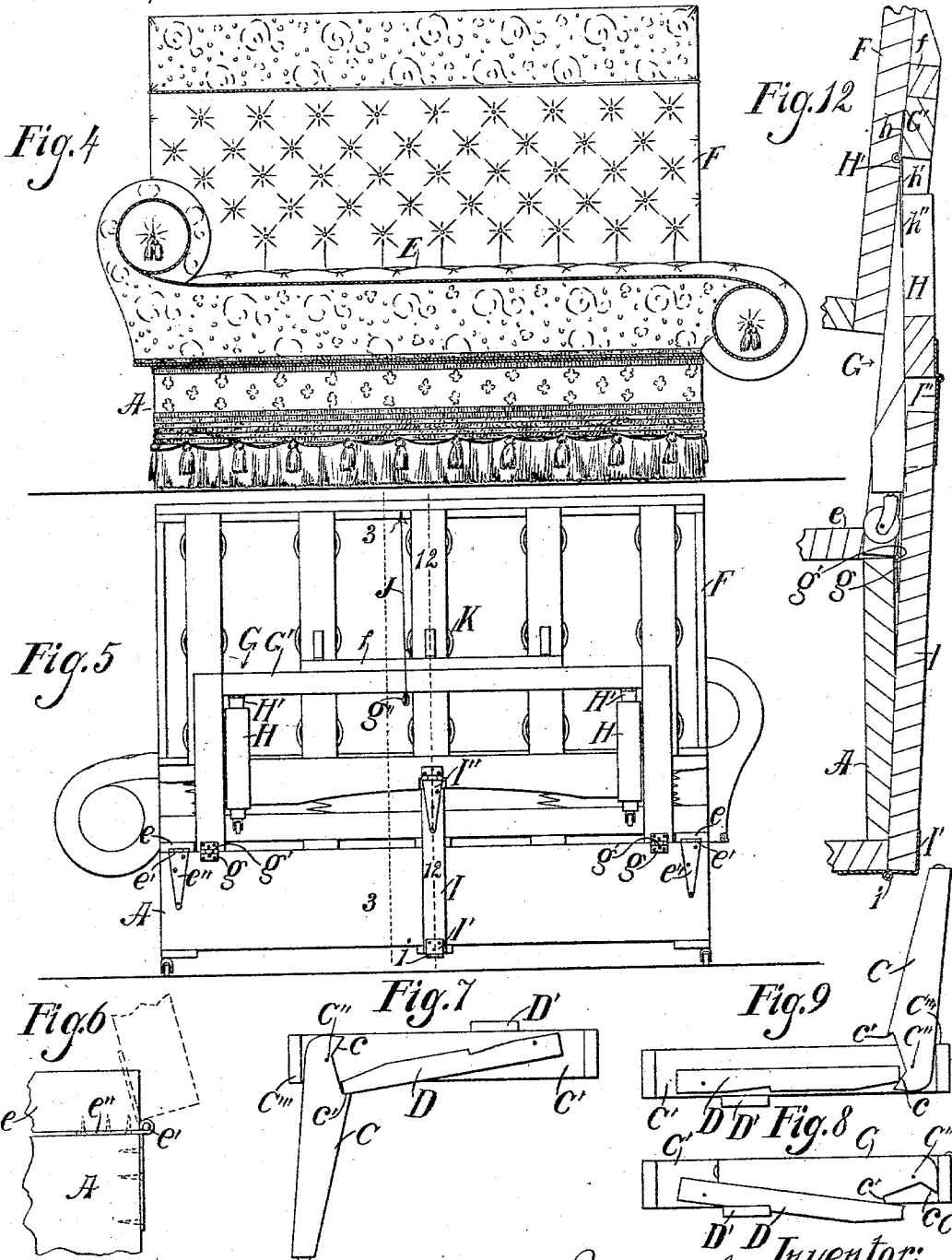
James C. Wood

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J. C. WOOD.
BED COUCH.

No. 559,834.

Patented May 12, 1896.



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UNITED STATES PATENT OFFICE.

JAMES C. WOOD, OF LOS ANGELES, CALIFORNIA.

BED-COUCH.

SPECIFICATION forming part of Letters Patent No. 559,834, dated May 12, 1896.

Application filed November 12, 1895. Serial No. 568,731. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. WOOD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Bed-Couches, of which the following is a specification.

My invention relates particularly to that class of bed-couches in which a base is arranged to serve as a receptacle either for a supplemental folding section, when the device is made of three sections arranged to have the bed made up transverse the length of the couch, or for bedclothes, when the device is made of two folds and arranged to have the length of bed parallel with the length of the couch. In bed-couches of this class as heretofore constructed the only provision for holding the seat-section and back-section from tilting too far to the rear when the seat-section is raised to allow access to the base has been a cord connecting the seat-section with the base. The weight of the back nearly balances the base, and unless the operator uses great care the back overbalances and the whole device upsets.

One object of my invention is to provide an automatic device which will unfold a leg to support the back and seat sections when the seat is raised to gain access to the base and will also unfold the leg to support the back-section when such section is lowered to form a bed. One especial disadvantage of bed-couches which are composed of a base, a seat-section hinged to the back of the base, and a supplemental section hinged to the front of the base and arranged to fold thereinto and to unfold therefrom is that so far as I am aware no leg has yet been devised which will automatically and unfailingly open and lock in position to support the supplemental section in its unfolded position and unlock and close when the supplemental section is folded into the base. I am aware that many devices have been invented for this purpose, and I have placed in use a large number of couches provided with various automatic legs; but thus far I have found none which are unfailing in operation. This is highly objectionable, and has been the cause of much annoyance.

Another object of my invention is to pro-

vide for the auxiliary section of bed-couches an automatic folding leg which will be cheap and simple in construction and unfailing in its operation. In constructing bed-couches having a back and seat section hinged to each other and a supplemental section arranged to fold into the base difficulty has been experienced in making the couch of sufficient length without giving it when folded proportions which make it inconvenient in use and odd in appearance—that is to say, it has been necessary to make the seat unusually wide or the back unusually high in order that when the supplemental section is unfolded to form the foot portion of the bed and the back has been lowered to form the head portion of the bed the bed thus formed may be of the usual length of beds.

A further object of my invention is to provide a bed-couch which, when folded, will have its seat and back sections of the ordinary width and height, but will have a foot-section of extra width, so that when the couch is unfolded the bed thus formed will be of the usual length and when folded will not be odd or unsightly in appearance nor inconvenient in use.

A further object of my invention is to provide an improved mode of hinging the supplemental section to the base in such a manner that the hinges may be entirely concealed from view and that portion of the upholstery which covers the hinge-joint be prevented from wearing more than the rest of the upholstery.

A further object of my invention is to so hinge the legs which support the back-section that when the legs are unfolded they will abut directly against a solid frame and no strain whatever will be placed upon the hinges.

My invention comprises the various features of construction and combinations of parts hereinafter set forth and claimed.

The accompanying drawings illustrate my invention.

Figure 1 is a side view of my improved bed-couch unfolded to form a bed. This view is looking from that end of the couch which is at the right in Fig. 4. Fig. 2 is a view of my improved device with the seat and back tilted to allow access to the base. Fig. 3 is a

sectional view on line indicated by 3 3, Fig. 5. Fig. 4 is a front view of the device folded to form a couch. Fig. 5 is a rear view of the same. Fig. 6 is an enlarged fragmental detail illustrating the manner of hinging the seat-section to the base-section. Fig. 7 is a detail of the automatic folding leg which supports the supplemental section. In this view the leg is shown in its unfolded position. Fig. 8 is a view of the same in its folded position. Fig. 9 is a view of the same, showing the leg unfolded and the gravity-latch engaging the inclined shoulder of the leg to overbalance it to cause it to fold. Fig. 10 is a detail showing the manner of hinging the supplemental section to the base-section. Fig. 11 is a detail showing the manner of hinging the leg which supports the back-section, and Fig. 12 is an enlarged fragmental sectional detail of the automatic device for supporting the back-section on line 12 12, Fig. 5.

In the drawings, A represents the base, and B is the supplemental or foot section, which is arranged to fold into the base and to unfold therefrom. This section B is hinged to the front edge of the base A by hinges *b*. The front upper edge *a'* of the base is provided with recesses *a*, arranged to chamber the joints *b'* of the hinges, and such hinges are arranged with the joints chambered in the recesses and flush with the top and front faces of the base, and the lining *B'*, which is arranged to cover the bottom of the section B, is secured to the edge *a'* of the base substantially in line with the hinge-joints *b'*. The cover *A'*, which covers the front of the base, is brought up over the edge of the base and is secured thereto with its edge slightly overlapping the edge of the lining *B'*, but substantially in line therewith. The lining *B'* and the cover *A'* are sewed together over the hinge-joint, so that when the couch is upholstered the hinge is concealed from view. By joining the lining and the cover substantially in line with the joints of the hinges when the section B is unfolded no strain is put upon the upholstery and it does not become torn, as it would were the joining made at any other point; also by chambering the hinge-joints in the recesses I avoid the usual projection of the joint, which causes the upholstery to quickly wear through. In order to insure that when the supplemental section is unfolded a support will be provided for it, I provide such section with my improved automatic leg C. This leg is pivoted by one end to a frame *C'*, which frame is attached to the inside of the end of the section B. This leg is provided with an inclined shoulder *c*, (see Figs. 7 and 9,) arranged near its upper end, and is also provided with a supporting-shoulder *c'*, arranged below the pivotal point *C'* of the leg. A gravity-latch D is pivoted by one end to the frame *C'* and has its other end arranged to fall by its own weight when the frame is reversed, and the leg opens by its own weight, as shown in Fig. 7, and to rest

upon the shoulder *c'* and against the leg, thus to lock the leg in its open position. The end *C'''* of the frame forms a stop which prevents the leg from swinging too far outward.

D' is a stop for the gravity-latch D. When the frame is reversed by reversing the section B in the act of folding it into the base, the gravity-latch D again falls, unlocking the leg, and engages the inclined shoulder *c* and by its weight overbalances the leg and causes it to fold into the frame. The base A is made of unusual width, and the section B is also made of unusual width and closely fits within the base. The seat-section E is of the ordinary width, which is less than the width of the base, and such section is provided with rearwardly-projecting members *e*, which are pivoted by hinges *e''* to the rear of the base-section. By this means I am enabled to make the foot-section of unusual width and yet to allow it to be readily folded into and unfolded from the base. This cannot be done without the rearward projection.

The back F is pivoted to the rear of the seat-section, and this back is also of the usual height of ordinary couch-backs, the extra length needed for the bed being provided by the extra-wide foot-section B.

G is a supporting-frame, which is hinged to the rear edge of the base-section by means of hinges *g*, which are arranged upon the rear face of both the frame and the base-section. The back F is provided with a cleat *f*, which forms a stop beneath which the frame G rests, thus to detachably support the back rigid with relation to the seat-section.

The pivot *e'* of the hinges *e''*, which hinge the seat-section to the base, and the pivots *g'* of the hinges which hinge the supporting-frame to the base are arranged in line with each other, so that the frame G will hold the back rigid with relation to the seat-section; but the seat-section and the back section may both be tilted to the rear to uncover the base-section, as shown in Fig. 2, thus to allow the foot-section to be unfolded from the base. In order to avoid the necessity of bending the hinges *g* or *e''* to bring their pivots in line with each other, I attach one leaf of each of the hinges *e''* to the rear face of the base and secure the other leaf to the under face of one of the members *e*, (see Fig. 6;) also by this means of attachment I am enabled by unscrewing the screws which secure the hinge to the base to detach the seat-section from the base-section, and while thus detached to upholster the seat and the back in the ordinary manner, after which the seat can be placed in position on the base-section and quickly secured thereto.

It is desirable that a support be automatically unfolded to support the seat and back when the seat-section is lifted to allow access to the base, in order that the device will not overbalance to cause breakage of the couch or hinges. To accomplish this end I hinge or pivot through intermediate means suitable

legs H to the base A. This means comprises the frame G, to the upper cross member G' of which I hinge the legs by hinges H', arranged upon the rear face of such frame. One leaf *h* of each hinge is secured to the upper face of the frame, and the leg is secured to the other leaf *h'* of the hinge with its end *h''* arranged at a distance from the upper face of the frame substantially equal, when the leaf is opened, to bring its leaves at right angles to each other to the thickness of the member G' of the frame, whereby when the leg is unfolded its end is firmly seated beneath the lower face of the frame to support it, and no strain is brought upon the hinge. In order to automatically operate these legs, I pivot or hinge an actuating-arm I to the base A by a hinge I', arranged at a point below the pivotal point of the frame G and arrange the pivotal point *i* of such hinge in line with the front or inner face of the arm I. The other end of this arm I pivot or hinge to the legs H by hinge I'', arranged on the rear or outer face of such legs and also on the rear face of the arm. By this peculiar manner of hinging, the pivotal points of the hinges H', I', and I'' are thrown out of line with each other, so that when the seat and back sections are tilted back into the position shown in Fig. 2 the tendency of the arm is to force the legs outward and into their unfolded position instead of inward against the back, which would prevent the back from lowering.

When it is desired to lower the back with relation to the seat, the supporting-frame G is pulled outward to release it from the stop *f* and the frame and back are lowered together, the frame sliding outward along the back and the actuating-arm operating, as before described, to cause the legs to unfold to support the back. The cause of the frame sliding outward along the back when the back is lowered with relation to the seat and remaining stationary with relation to the back when the back and seat are tilted together is that the pivotal points of the frame and of the seat-section are the same, while the pivotal point of the back is in front and above the pivots of the frame and seat-section.

In order to prevent the frame from dropping when it is released from its engagement with the stop *f* upon the back, I secure a cord J to the upper edge of the back and lead it downward and around the member G' of the frame, over a suitable pulley *g''* and inward, and attach the other end to a spring K. By this means a yielding support is formed for the frame G, which holds such support firmly in position beneath the stop, yet allows it to be readily drawn out from the stop when the back is lowered to form a bed, and also prevents the frame from falling when released from the stop.

In Fig. 4 I have shown the seat-section extended at each end over the base-section in order to hide the joint between the seat and

base and allow a more artistic upholstering of the device than is possible otherwise.

In practice, to unfold the device the seat-section and the back-section are both tilted, as shown in Fig. 2, the legs H unfolding automatically to support the back. Then the supplemental section B is unfolded from the base and the seat-section and the back-section are again tilted forward to bring the seat-section upon the base. Then the frame G is released from the stop by pulling the frame outward, and the back is thus permitted to lower, the frame sliding outward along the back as the back lowers and the legs automatically unfolding to support the back in its lowered position. When this is done, the bed is ready to be made up. By reason of the extraordinary width of the section B the length of the couch thus unfolded is equal to that of an ordinary bed. When the device is folded, the seat and back present the same appearance as an ordinary bed-couch, and all unsightly features are thereby avoided.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the reversible frame; the leg pivoted to the frame and arranged to swing and provided with the inclined shoulder; the latch pivoted by one end to the frame and having its other end arranged to drop to engage the leg and to lock it in its unfolded position, and, when the frame is reversed, to fall against the inclined shoulder and to overbalance the leg to cause it to close, substantially as set forth.

2. In combination, the base; the seat-section pivoted to the rear of such base; the back-section pivoted to the seat-section and provided with the stop; the support pivoted at one end to the base and having its other end arranged to engage the stop to support the back, and to be released therefrom to allow the back to be lowered.

3. In a bed-couch, the combination of the base; the back-section pivoted thereto; the supporting-frame pivoted to the top of the base by pivots arranged at the rear of the pivots of the back-section, and arranged to engage with the back to support it in its raised position, and to be disengaged therefrom to allow it to be lowered to form a bed; the legs pivoted to the supporting-frame; and the operating-arm pivoted by one end to the base below the pivotal point of the supporting-frame, and having its other end pivoted to the legs below their pivotal point of attachment to the frame.

4. In combination, the base; the seat-section of less width than the base and pivoted by means of rearwardly-projecting members to the rear edge of the base; the back-section pivoted to the seat-section and provided with the stop; the supporting-frame pivoted to the base and adapted to engage the stop to support the back, and to be released therefrom

to allow the back to lower, and a suitable support arranged to support the back when lowered.

5. In combination, the base; the seat-section of less width than the base and pivoted, by means of rearwardly-projecting members, to the rear edge of the base; the back-section pivoted to the seat-section; and the support pivoted to the rear edge of the base and adapted to engage the back-section to hold it rigid with relation to the seat-section, and to be released therefrom to allow it to lower with relation thereto, and a suitable support arranged to support the back when lowered.

6. In combination, the base; the seat-section hinged to the base; the back-section hinged to the seat-section; suitable detachable means arranged to hold the back and seat sections rigid with relation to each other; and the legs pivoted through intermediate means to the base, and arranged to automatically unfold to support the back and seat sections when the seat-section is raised to allow access to the base, and to also unfold to support the back-section when such section is lowered to form a bed.

7. The combination of the base; the seat-section of less width than the base, and having rearwardly-projecting members pivoted to the rear edge of the base; the foot-section of greater width than the seat-section, hinged by one edge to the front edge of the base and adapted to fold thereinto and to unfold therefrom; the back-section pivoted to the seat-section, and suitable supports arranged to support the back-section and the foot-section when the couch is unfolded.

8. The combination of the base; the seat-section pivoted to the base; the back-section pivoted to the seat-section and provided with the supporting-stop; the supporting-frame pivoted to the base and arranged to rest against the stop to support the back-section, and to be released therefrom; a leg pivoted by its upper end to the supporting-frame, and an operating-arm pivoted by one end to the base and having its other end operatively connected with the leg to cause such leg to unfold to support the back when the back is lowered.

9. In combination, the base; the seat-section of less width than the base and pivoted by means of projecting members to the rear edge of the base; the back-section pivoted to the seat-section and provided with the stop; the supporting-frame pivoted to the rear edge of the base and arranged to engage the stop to hold the back rigid with the seat-section; the legs pivoted to the frame; the actuating-arm pivoted at one end to the base below the pivotal point of the frame, and also pivoted to the legs below their pivotal point, and the supporting-cord secured by one end to the upper part of the back-section, passed downward around the upper member of the supporting-frame, thence inward and having its

other end secured to a spring, substantially as set forth.

10. The combination of the base; the foot-section hinged by one edge to the base and adapted to fold thereinto and to unfold therefrom; the seat-section of less width than the base and provided with rearwardly-projecting members pivoted to the rear edge of the base; the back-section pivoted to the seat-section and provided with the stop; the supporting-frame pivoted to the upper rear edge of the base and arranged to engage such stop and to hold the back rigid with relation to the seat, and to be released therefrom to allow the back to be lowered with relation to the seat; the legs pivoted to the frame; and the leg-operating arm pivoted by one end to the base below the pivotal point of the frame, and having its other end pivoted to the legs below their pivotal point of attachment to the frame.

11. The combination of the base having its upper front edge provided with the hinge-joint-receiving recesses; the seat-section hinged to the back of the base; the supplemental section hinged by its lower rear edge to the upper front edge of the base by hinges each arranged with its joint in one of the joint-receiving recesses and flush with the front face of the base; the lining arranged to cover the bottom of the supplemental section and having one edge secured to the upper edge of the base, substantially in line with the hinge-joints of the hinges which hinge the supplemental section to the base; the cover arranged to cover the front of the base; and having its upper edge secured to the upper edge of the base, substantially in line with the edge of the lining of the supplemental section, substantially as set forth.

12. In a bed-couch, the combination of the base; the supplemental or foot section hinged to the front of the base to fold thereinto and to unfold therefrom, and provided with the pivoted legs and the automatic gravity-catches arranged to lock and unlock the legs; the seat-section of less width than the base, pivoted by means of rearwardly-projecting members, to the rear edge of the base; the back-section pivoted to the seat-section, and automatic legs arranged to unfold to support the back and seat section when the seat-section is raised to allow the supplemental section to be removed from the base, and to also unfold to support the back when the back is lowered to form the bed.

13. The combination of the base; the seat-section of less width than the base and hinged to the rear edge of the base by means of rearwardly-projecting members; the back-section hinged to the seat-section and provided with the stop; the supporting-frame hinged to the rear of the base-section; the legs hinged to the frame by hinges arranged upon the front face of the legs and frame; the operating-arm having one end hinged to the base

by a hinge having its pivot arranged in line with the front or inner face of such arm; and its other end hinged to the legs by a hinge arranged on the rear face of such legs and arm, substantially as set forth.

14. The combination of the frame, the hinge having one leaf secured to the upper face of the frame, and the leg, secured to the other leaf of the hinge with its end arranged at a distance from the upper face of the frame,

when the hinge is bent to bring its leaves at right angles to each other, substantially equal to the thickness of the frame, whereby the end of the leg is firmly seated when in its unfolded position, beneath the lower face of the frame, substantially as set forth.

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Witnesses:

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