

No. 641,187.

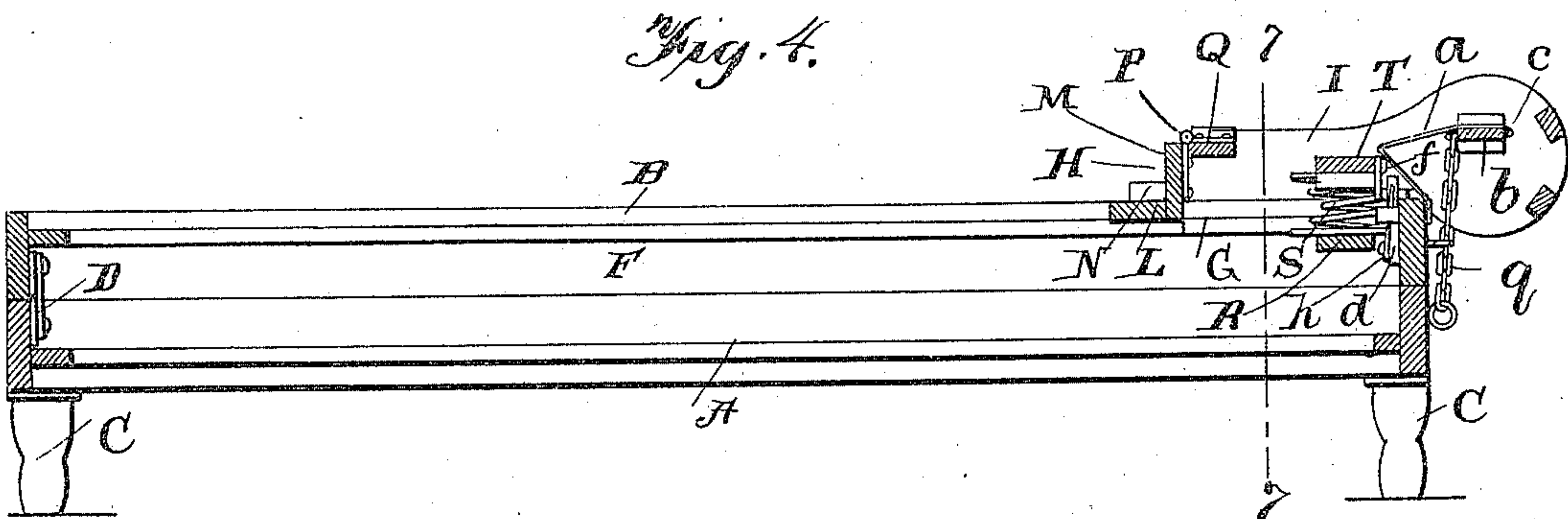
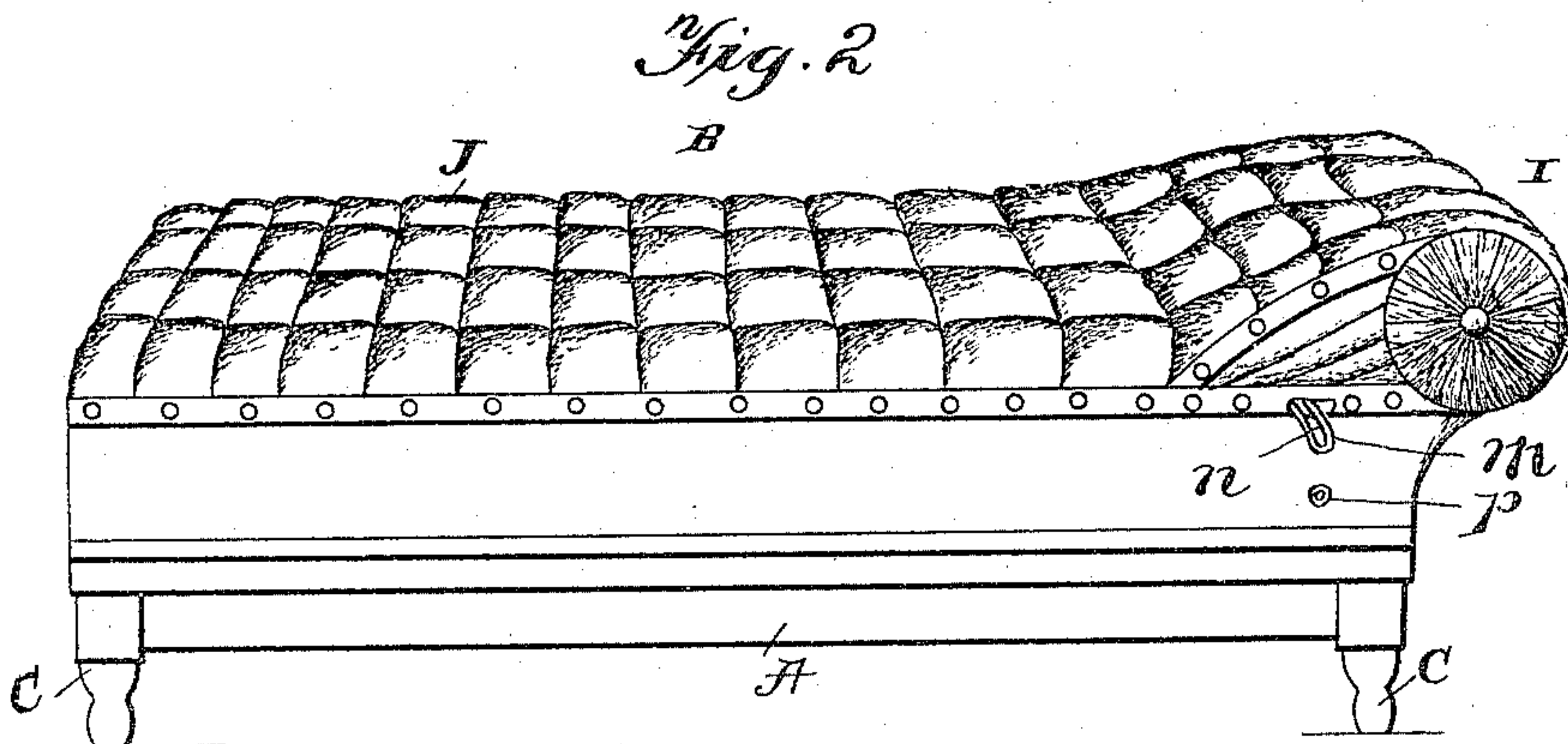
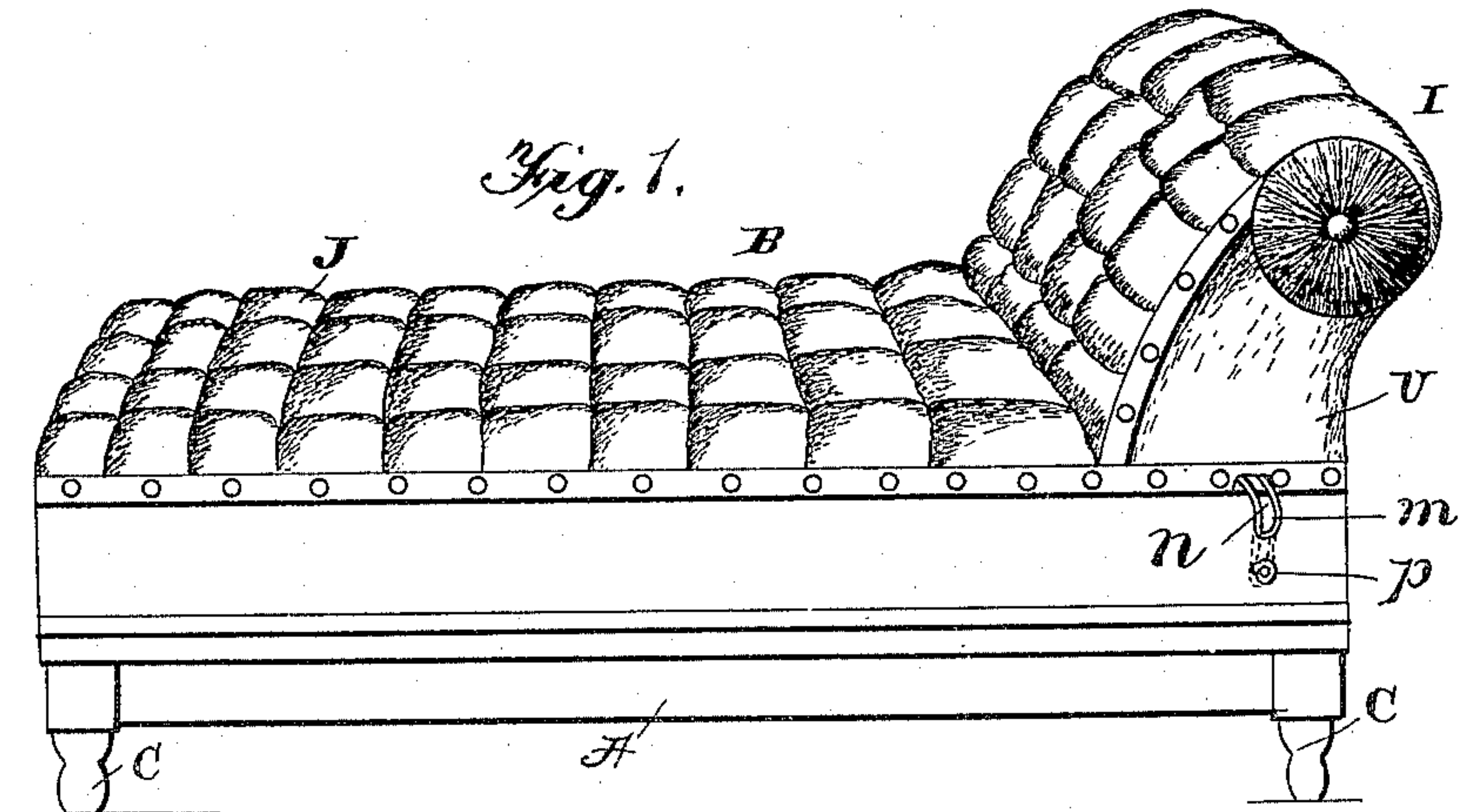
Patented Jan. 9, 1900.

W. E. BUSER.  
BED COUCH.

Application filed July 28, 1899.

(No Model.)

4 Sheets—Sheet 1.



Witnesses  
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Fig. 6.

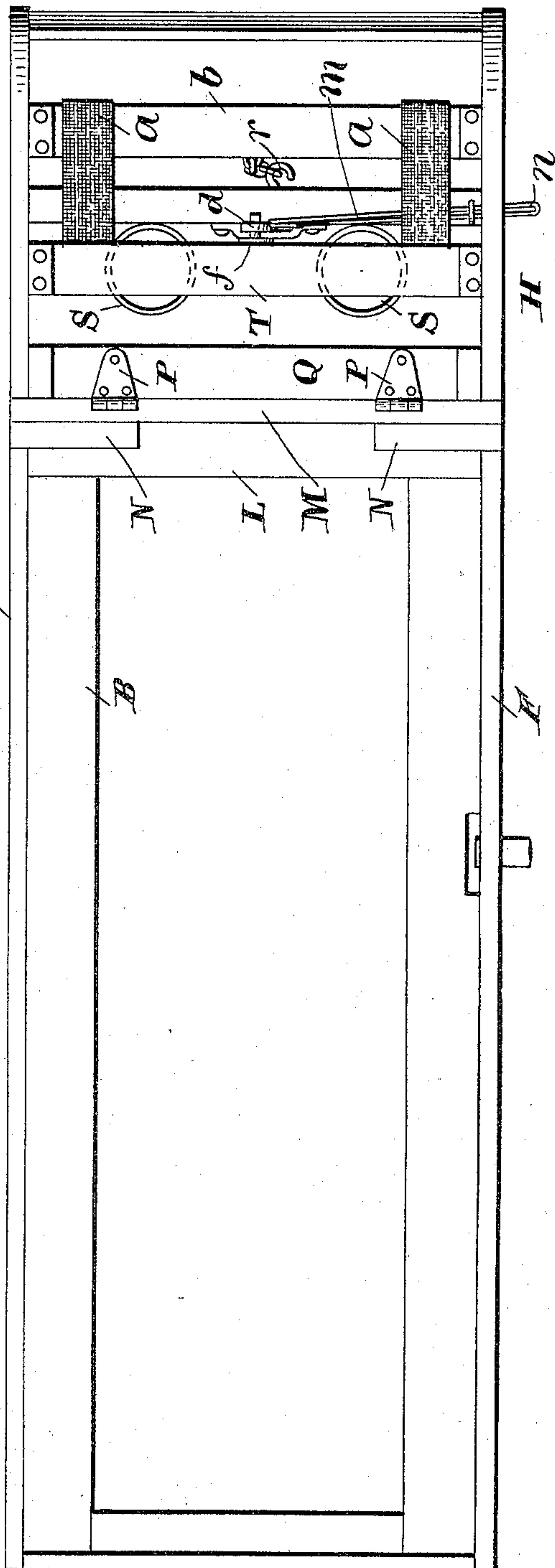


Fig. 10.

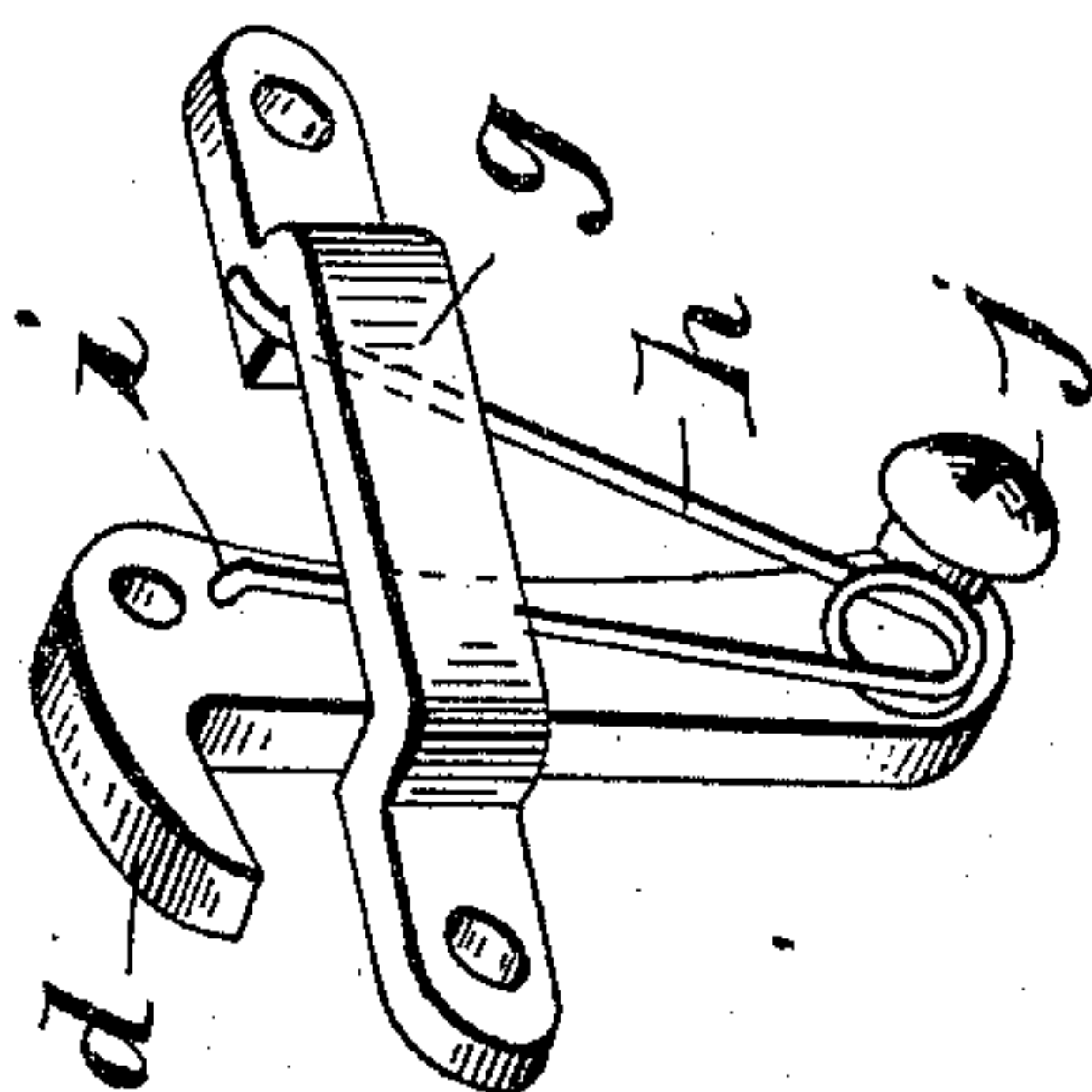
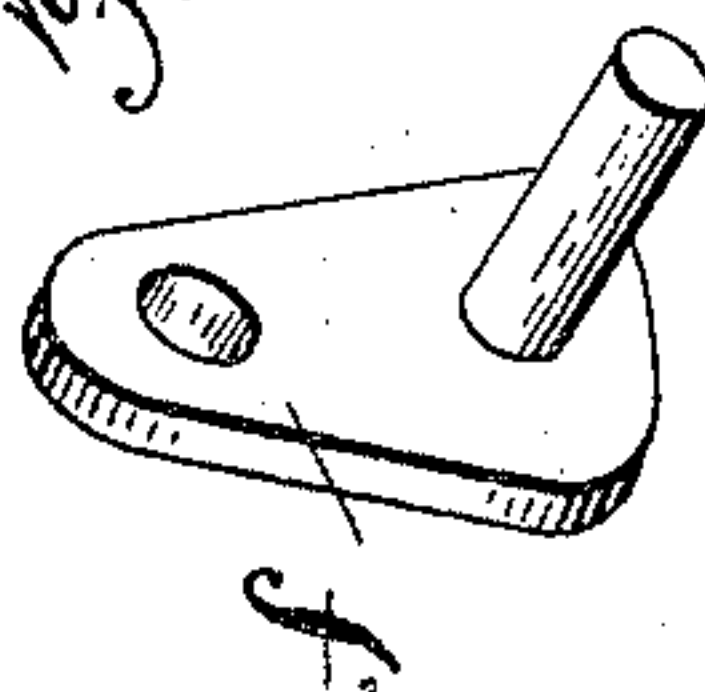


Fig. 9.

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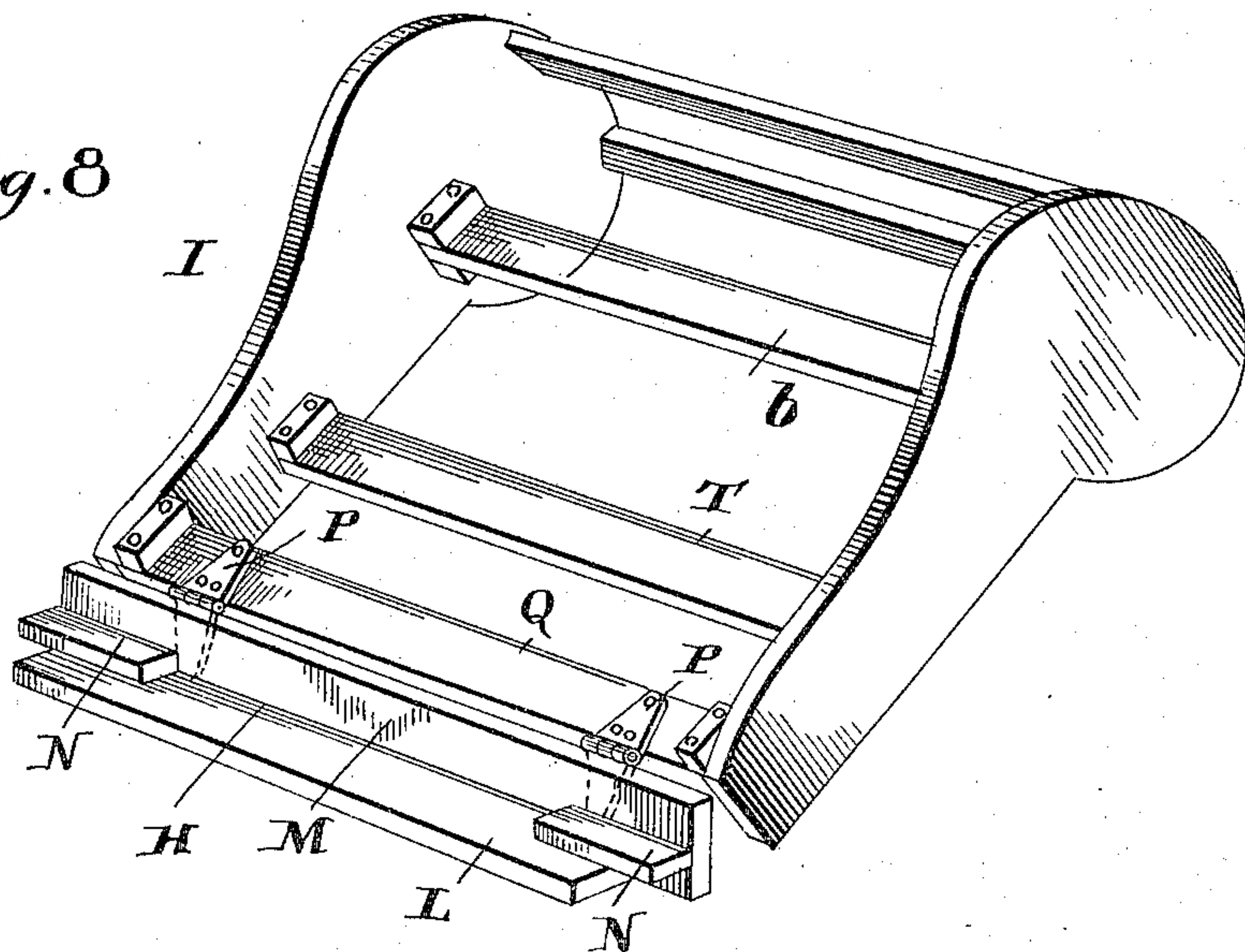
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4 Sheets—Sheet 4.

Fig. 8



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM E. BUSER, OF CHILLICOTHE, OHIO.

## BED-COUCH.

SPECIFICATION forming part of Letters Patent No. 641,187, dated January 9, 1900.

Application filed July 28, 1899. Serial No. 725,417. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. BUSER, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented new and useful Improvements in Bed-Couches, of which the following is a specification.

My invention relates to improvements in bed-couches, and pertains to a construction involving separate lower and upper frames adapted to be folded together for the purpose of forming a couch and to be unfolded or opened outward for the purpose of forming a bed-couch, one end of the upper frame or section having a spring-supported adjustable head, all of which will be fully described hereinafter and particularly pointed out in the claims.

The primary object of my invention is to provide a spring-supported adjustable head for the upper section or framework of a folding bed-couch, whereby when the device is being used as a couch the spring-supported head can be adjusted to the desired angle or inclination to suit the comfort and pleasure of the occupant and can be folded downward practically even with the seat portion of the upper outwardly-folding frame or section when the device is opened outward to be used as a bed, which will hold the spring-supported adjustable head in a closed position to prevent it from interfering with the unfolding of the upper section and support it out of contact with the floor, which results cannot be attained in a folding bed-couch having a rigid head portion.

Further objects of my invention pertain to the construction and arrangement of the means for connecting the head-piece to the upper section, limiting it as respects its upward movement, locking it in its folded position, and adjustably locking it at the desired inclination to suit the convenience, pleasure, and comfort of the occupant.

In the accompanying drawings, Figure 1 is perspective view of a couch embodying my invention, showing the spring-supported adjustable head in its uppermost position. Fig. 2 is a similar view showing the spring-supported adjustable head in its closed position. Fig. 3 is a perspective view of my improved bed-couch, showing it opened outward to be

used as a bed. Fig. 4 is a longitudinal sectional view taken just at one side of the automatic head-locking catch. Fig. 5 is an end view of my couch, showing the adjustable head raised and the upholstering removed. Fig. 6 is a top plan view of the couch folded and the upholstering removed, showing the upper frame or section with the spring-supported adjustable head and its operating connection. Fig. 7 is a cross-sectional view taken on the line 7 7 of Fig. 4, showing the spring-supported adjustable head locked in its folded position and also the automatic holding-catch therefor. Fig. 8 is a detached view of the spring-supported adjustable head and the angle-bar to which it is hinged. Fig. 9 is a detached perspective view of the spring-latch and its spring. Fig. 10 is a detached perspective view of the L-shaped locking member.

The lower section A and the upper separate section B of which the couch is composed each consist of rectangular frames of the same length and also of the same width, so that when they are in their folded position their edges are even. The lower section is provided at each corner with the supporting-legs C, and the two sections are hinged together at the ends of one side by means of suitable hinges D, whereby the two sections may be folded outward, as shown in Fig. 3, for converting the couch into a bed and closed or folded together, as shown in Figs. 1 and 2, for converting it into a couch.

The vertical side pieces F have their ends cut away to form the recesses G at the head of the couch, and these recesses afford a suitable seat for the attachment of the angle-bar H, to which the spring-supported adjustable head I is hinged in a manner which will be presently described. These recesses also provide a space which will permit the head I to be folded down into a position practically in a line with the seat portion J of the couch to permit the upper section B to be unfolded outward, as shown in Fig. 3, and also to hold the head in a position out of contact with the floor by means of suitable supporting-legs K, which are attached to the inner side of the free edge of the upper section. The supporting-legs K are preferably of the folding type, whereby they can be folded inward, as shown



in dotted lines, Fig. 3, to be within the couch when it is folded, as in Figs. 1 and 2, and adapted to be turned downward into the position shown in solid lines, Fig. 3, for supporting the free edge of the upper section when it is unfolded for converting the couch into a bed.

I have previously referred to an angle-bar H, to which the spring-supported adjustable head I is hinged, and this angle-bar is composed of the horizontal piece L, which fits between the edges of the vertical boards F, the vertical piece M, which is longer than the piece L, as illustrated, and which fits against the inner vertical walls of the recesses G, made in the ends of the side boards F, and the bracing-blocks N, which are situated just above the intersecting-point of the pieces L and M and in contact therewith. The blocks and the pieces L and M are united, preferably, by glue, thus constituting the angle-bar in practically a single member, to which the head I is hinged. This angle-bar is connected or secured in position by means of nails, screws, or bolts, as may be desired.

Hinges P serve as the means of uniting the head I to the angle-bar H, and attention is directed to the fact that the lower leaves of these hinges are connected to the outer side of the vertical portion M of the angle-bar and to the upper face or side of a transverse bar Q at the lower and inner end of the hinged head I. The object of attaching these hinges in this manner is to prevent the liability or tendency of the springs S to pull the hinges away from the angle-bar, as would likely be the case if the lower leaves were attached in a horizontal position and the upper leaves were attached to the under side of the cross-bar Q.

Heretofore I have several times referred to the head I as a "spring-supported" adjustable head, and I will now explain the means by which the head is spring-supported, capable of adjustment, and also of being locked in its folded or lowermost position for the purpose I have already explained. The head end of the upper folding section B is provided with a transverse board or piece R, upon which rest the lower ends of suitable spiral springs S, the upper ends of these springs S being in engagement with the under side of an intermediate cross-bar T of the head I, and the upper and lower ends of these springs are connected with the bars R and T by means of staples, which is the usual way of connecting springs of this character.

The upholstering for the couch has its side portion to extend across the space U between the lower edges of the side pieces of the head and the upper edges of the side bars F for the purpose of hiding from view this space and the mechanism situated between the head and the section B, and thus make a completed construction which is comely in appearance. From this it will be at once noted that it is desirable to provide means for limiting the

upward movement of the head independent of the upholstering to prevent the strain which would otherwise necessarily be upon the upholstering at this point and which would have a tendency to tear the united edges of the upholstering or break it away entirely. To accomplish a limitation in the movement of the head, the springs can be of a character and of a length to accomplish this result, owing to the fact that they are firmly united at their respective ends to the upper section B and to the head. This arrangement would accomplish the result of limiting the upward movement of the head, and thus preventing the injury or destruction of the upholstering, provided the head is always prevented from moving suddenly upward, and especially when released from its folded position. If the springs alone are depended upon for this purpose and the head is suddenly released from its folded position, the head would of necessity go beyond the length of the springs and throw a damaging strain upon the upholstering. Therefore to provide against this contingency I provide means for stopping positively the upward movement of the head at a predetermined point, which will absolutely prevent any injury to the upholstering. The means here shown for accomplishing this consists of the fabric strips or webs *a*, which have their lower ends connected to the end of the upper section and their upper ends passed over a transverse bar *b* near the upper end of the head I and secured to the upper and outer edge of this transverse bar, as shown at *c*. These webs or strips are of a length equal to the predetermined upward limit of the head, and this point may be varied, according to the wishes of the manufacturer, anywhere from a vertical or right-angle position of the head to any intermediate inclination. The inclination here shown is thought to be the preferred limit of inclination, though this may be varied, as before stated. It will also be readily understood that these limiting members or strips *a* may be in the form of ropes, cords, or chains and attached, respectively, to the upper section and to the hinged head at other points than that here shown and already described without departing from the spirit of my invention.

When it is desired to unfold the couch to convert it into a bed, as shown in Fig. 3, it is necessary that the head I be folded into the position shown in Figs. 2 and 3 and locked, for otherwise the head would strike the floor when turning the upper section outward and prevent it from being placed in the position to convert the couch into a bed, and this result is also necessary to prevent the upholstering of the head from resting and coming in contact with the floor when the upper section is folded outward, which would be objectionable for the reason that it would tend to mash in and distort the upholstering of the head and also subject it to unnecessary wear and dirt. This last result will be appreciated



when it is remembered that almost invariably after the couch is folded outward to form a bed the user will move it around into some specially-desired position other than that occupied by the couch when it is first unfolded. This locking of the head is preferably accomplished automatically by the depression or folding of the head through the medium of a spring-catch *d*, which is pivoted to the inner edge of a cross-bar *e*, situated at the end of the upper section B, with which the horizontal end of an L-shaped locking-bracket *f* is adapted to automatically engage when the head is pushed downward. This L-shaped locking member *f* is rigidly secured to the outer edge of the cross-bar *T*, which is located upon the head at a point intermediate its ends and against the under face of which the upper ends of the springs *S* engage. A keeper *g* is provided for the spring-catch *d*, which keeper is in the form of a U-shaped bracket, which embraces the spring-catch and has its ends attached to the inner edge of the end of the section B. A spring consisting of a wire *h* has its upper end turned around through an eye *i* at the upper end of the latch *g* and also turned around the pivotal screw *j* and then extending upward through the keeper and engaging the inner wall thereof, thus serving to normally hold the spring-catch against the opposite end wall of the keeper from that engaged by the upper free end of the said spring-wire *h*. From this description it will be noted that the automatic devices for locking the head in its folded position are situated inside of and inclosed by the upholstery, and it thus becomes necessary to provide means to unlatch this spring-catch when it is desired to release the head from its folded position, and it is also desirable to hold this catch in a position against the tension of its spring, which will prevent the head from becoming locked in its folded position when it is desired it should be permitted to freely move under the tension of the springs *S*.

The means here shown for actuating the catch consists of a double cord *m*, which has its inner ends suitably connected with the upper end of the catch through the opening *i* and its outer doubled loop end *n* passing through an opening in the upholstery to the outside thereof, as illustrated. When it is desired to release the folded spring-supported head, an outward pull upon the loop end of the cord will cause the catch to disengage the projection *f* and release the head, and when it is desired to prevent the head from being locked in its folded position the loop end *n* of the cord is caught over an eye or hook *p*, projecting from the outer side of the end of the upper section B.

In addition to locking the spring-supported head in its folded position it is frequently desirable to lock the spring-supported head at some intermediate point, and for this purpose I provide a member *q*, which is here shown in the form of a chain having links

which are adapted to be hooked upon and unhooked from an open eye *r*, projecting from the end of the upper section B. By means of this construction the spring-supported head is made adjustable, so that it can be held in any desired adjusted position or inclination to suit the pleasure and comfort of the occupant by hooking one of the links of the chain within the open eye *r*. The lower end of this chain is preferably, though not necessarily, provided with a ring *s* to facilitate the drawing downward of the head by means of the said chain. Attention is called to the fact that the open eye *r* is situated at a point to one side of a vertical line drawn from the point of attachment of the upper end of the chain *q* to the head and that the opening of the eye *r* is at that side farthest from the vertical line, whereby when one of the links of the chain have been engaged with the eye *r* the tendency of the engaged link under the tension of the springs *S* is to move around to the closed side of the eye, and thus prevent the link from being accidentally unhooked from the eye, as would otherwise likely occur.

It will be readily understood that instead of a link-chain other equivalent device could be substituted therefor and that the head can be locked in its folded position by the chain or the catch, the catch being preferred for this purpose for the reason that it is automatic in its locking action.

A bed-couch constructed with a spring-supported folding and adjustable head as here shown enables the user to adjust the head to that position which best suits his pleasure and comfort and to lock the spring-supported folding and adjustable head in its folded position to enable him to unfold the upper section for converting the couch into a bed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a couch-frame having headless sides, of a separate head having narrow end pieces extending parallel the sides of said frame to fold in respect thereto and at its inner end a cross-piece, hinges uniting the said cross-piece and the couch-frame, and springs situated between and engaging respectively the hinged head and the couch-frame, substantially as described.

2. The combination with a couch-frame having headless sides, of a separate head having narrow end pieces extending parallel the sides of the couch to fold in respect thereto and constituting head-pieces therefor and separate therefrom, hinges uniting the inner end of the head and said frame, and springs situated between and engaging the said head and frame, substantially as described.

3. A couch comprising a frame, a vertically-arranged bar spanning the frame at a point inside of one end thereof, a head, hinges having their lower leaves connected to the vertical side of said bar, the head having a transverse bar to which the upper leaves of the



hinges are connected, and springs situated between and engaging respectively the head and the frame, substantially as described.

4. A couch comprising a frame, a head having longitudinally-extending side pieces, the inner end of the head being pivotally connected with the frame at a point inside of one end thereof, the frame having a seat portion inside of the inner end of the head, the side pieces of one of said members being recessed to permit the head to fold downward practically in a line with the seat portion, substantially as described.

5. A couch comprising a frame having headless sides, a separate head hinged at its inner end to said frame to fold in respect thereto and having narrow side pieces extending parallel said frame and constituting a head therefor, the outer ends of said side pieces projecting beyond the said frame and adapted to fold downward in relation thereto, and a spring situated between and engaging said hinged head and frame, substantially as described.

6. A couch comprising a frame having headless sides, a head hinged at its inner end to said frame at a point inside one end thereof, said head having narrow side pieces extending parallel the sides of the frame to fold in respect thereto and constituting a head therefor, a spring situated between and engaging said head and frame respectively, and a flexible limiting member having its upper and lower ends rigidly connected respectively to said head and frame, substantially as described.

7. A couch comprising a frame, a head hinged at its inner end to the frame at a point inside one end thereof, the head having end pieces extending parallel the sides of said frame, a spring situated between and engaging said head and frame, and upholstery having its edges connected respectively to the said end pieces of the head and to the adjacent portion of the sides of said frame, substantially as described.

8. A couch comprising a frame, a head hinged at its inner end to the frame at a point inside one end thereof, the head having side pieces extending parallel the sides of said frame and constituting a head therefor, flexible upholstery connected with the adjacent edges of the side pieces of the head and frame, a spring between the head and frame, and a limiting member connected respectively with the head and the frame and of a length to prevent the tension of the spring coming upon said upholstery, substantially as described.

9. A couch comprising a frame, a head hinged at its inner end to the frame at a point inside one end thereof, the head having side pieces extending parallel the sides of the frame and having their outer ends extending beyond the end of the frame, said side pieces having their under edges cut away to permit them to fold down close to or upon said frame, and a spring situated between and in engage-

ment with said head and frame, substantially as described.

10. A couch comprising a headless frame, a head hinged at its inner end to said frame at a point inside of one end thereof, said head having side pieces extending parallel with the sides of said frame, a spring situated between and engaging respectively the head and the frame, upholstery attached at its edges respectively to said head and frame, a limiting member attached respectively to the head and the frame and adapted to prevent the tension of the spring coming upon said upholstery, and an adjusting member between said head and frame and adapted to hold the head at different angles, substantially as described.

11. A bed-couch comprising a lower and an upper section hinged at their longitudinal edges to fold outward, the upper section being headless and having a seat portion, a head hinged at its inner end at one end of the said seat portion and provided with longitudinally-extending end pieces adapted to fold downward to practically a horizontal line with the seat portion, a locking member for holding the head folded, and supporting-legs for both ends of the free edge of the upper section, substantially as described.

12. A bed-couch comprising an upper and a lower section hinged at their longitudinal edge to fold outward, the sides of the upper section being headless and having a seat portion stopping at a point inside one end thereof, a head hinged at the short end of the seat portion provided with longitudinally-extending end pieces and adapted to fold downward in respect to the seat portion and said section, a member for locking the head in its folded position, both ends of the free edge of the upper section carrying legs of said end pieces of a length sufficient to project beyond the outer surface of the head when in its folded position for the purpose described.

13. A bed-couch comprising a lower and an upper section hinged at their longitudinal edge to fold outward, the upper section having a seat portion stopping at a point inside one end thereof, a head hinged at said end of the seat portion and adapted to fold downward in respect to the seat portion and said section, an expanding spring situated between and engaging respectively the upper section and the head for holding the latter normally upward, the head and the upper section carrying spring-acting interlocking members for holding the head locked, substantially as described.

14. A bed-couch comprising a lower and an upper section hinged at their longitudinal edge to fold outward, the upper section having a seat portion stopping at a point inside one end thereof, a head hinged to the section at the said end of the seat portion and adapted to fold downward, an expanding spring situated between and engaging respectively the upper section and the head for holding



the latter normally in an upward position, a spring-catch carried by one of said members, an interlocking member for engaging the spring-catch carried by the other member, and means for disengaging the catch from its cooperating member, substantially as described.

15. A couch comprising a frame, a seat portion stopping at a point inside one end of said frame, a head hinged to the frame at said end of the seat portion and adapted to fold downward, an expanding spring situated between and engaging respectively the head and the frame, a spring-catch carried by one of said members, an interlocking member carried by the other of said members and adapted to engage the spring-catch when the head is forced downward, and a member connected at one end to the said catch and its opposite end projecting outside of the couch for operating the catch, substantially as described.

16. A couch comprising a frame having a seat portion stopping at a point inside one end thereof, a head hinged to the frame at the said end of the seat portion, an expanding spring situated between and engaging respectively the head and said frame, a catch having its locking-shoulder extending in a direction transverse the head and frame and carried by one of said members, the other of said members having a locking projection extending in a direction longitudinal the frame and head and adapted to engage the locking-shoulder of the catch, substantially as described.

17. A couch comprising a frame having a

seat portion stopping at a point inside of one end of the frame, a head hinged to the frame at the said end of the seat portion, an expanding spring situated between and engaging respectively the head and the frame, a spring-catch carried by the frame, an interlocking member carried by the head, a looped cord having one end connected with the spring-catch, and a projection carried by the frame with which the looped end of the cord is adapted to engage for holding the catch out of engagement with its cooperating locking member, substantially as described.

18. A couch comprising an upper frame, a separate head hinged at its inner end at a point inside one end of said frame, said head having end pieces extending parallel the sides of said frame, a spring situated between and engaging respectively the head and frame and holding the head normally outward, means for locking the head in a closed position, a lower frame to which the upper frame is hinged and adapted to fold outward, both ends of the free edge of the upper frame having inwardly-folding legs of a length greater than the extension of said head when folded, as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM E. BUSER.

Witnesses:

AMI H. GUNTHER,  
A. B. COLE.