No. 681,186. Patented Aug. 27, 1901.

W. S. BOWIE.

COUCH.

(Application filed Oct. 20, 1900.)

(No Model.)

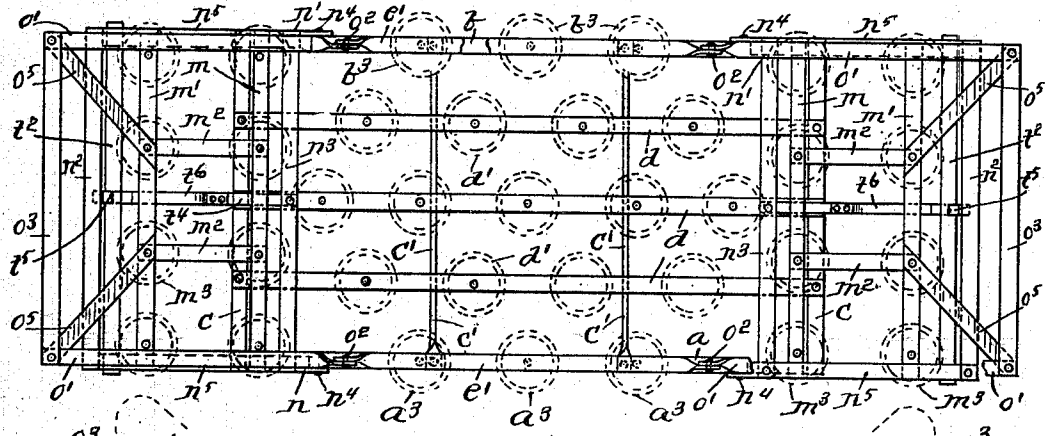

Fig-1-

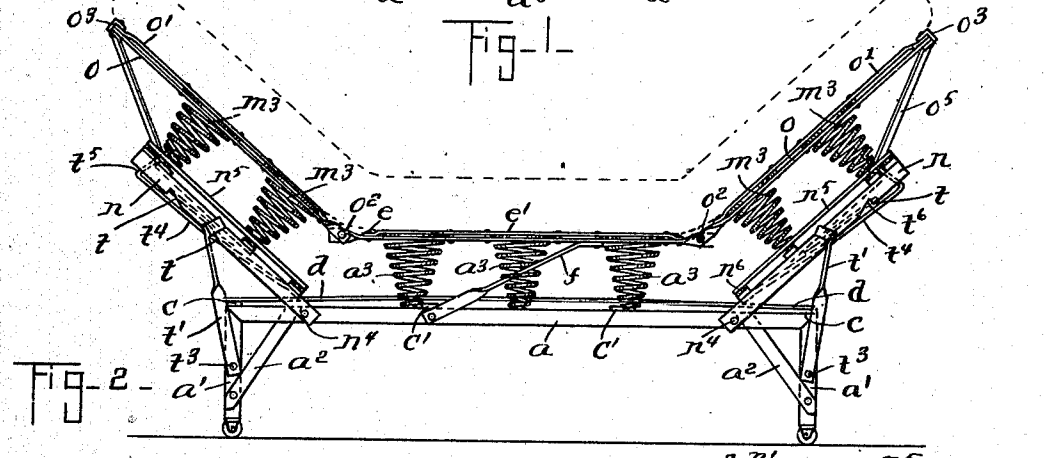

Fig-2-

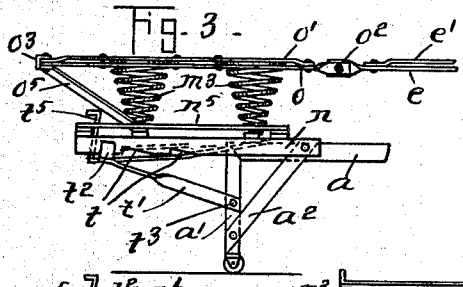

Fig-3-

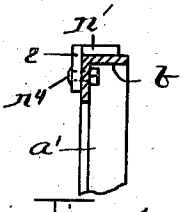

Fig-6-

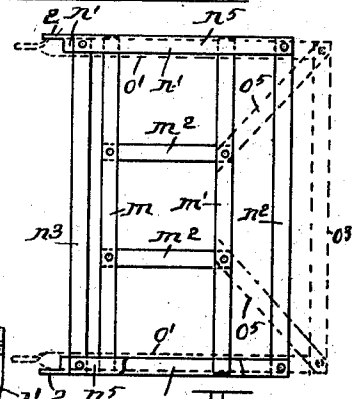

Fig-4-

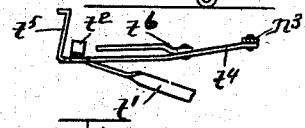

Fig-7-

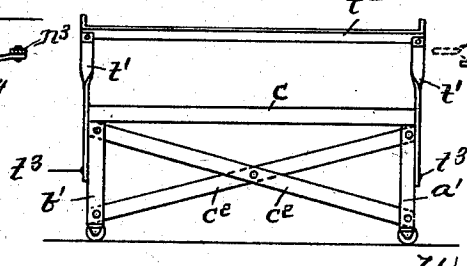

Fig-5-

Witnesses:
H. B. Davis.
J. W. Dieroff.

Inventor:
William S. Bowie.
by R. J. Hayes
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM S. BOWIE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GEORGE T. HORAN, OF SAME PLACE.

COUCH.

SPECIFICATION forming part of Letters Patent No. 681,186, dated August 27, 1901.

Application filed October 20, 1900. Serial No. 33,682. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. BOWIE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Couches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of couches; and it consists in an improved construction of main body portion bearing a set of springs; also, in improved means for stiffening the outer row of springs at each side of the main body portion; also, in a main body portion bearing springs having an end piece pivoted thereto, also bearing springs and means for stiffening the outer row of springs at each side of said end piece; also, in providing means for movably supporting the springs of the end piece, whereby they may occupy a position at substantially right angles to the end piece bearing them in all positions of said end piece; also, in means for automatically moving the support for the springs borne by the end piece as the end piece is moved up and down in order that said springs may occupy positions at substantially right angles to the end piece bearing them; also, in an improved form of locking device for holding the pivoted end piece at different inclinations; also, in means for holding said end piece in a horizontal position; also, in improved means for manipulating the locking device by which said end piece is held in an inclined position.

Figure 1 shows in plan view a couch embodying this invention having two pivoted end pieces which are shown in horizontal positions, the upholstery being removed and the springs being represented by dotted lines for clearness. Fig. 2 is a front elevation of the couch shown in Fig. 1, the end pieces being moved into inclined positions. Fig. 3 is a detail showing one of the end pieces in horizontal position. Fig. 4 is a detail showing particularly the base and the movable spring-supporting frame of one of the end pieces. Fig. 5 is an end view of the frame of the main body portion, showing the locking device for one of the end pieces pivotally connected to it. Fig. 6 is a detail showing the means for holding the end pieces in horizontal position, and Fig. 7 is a detail of the device employed for operating the locking device for the end piece.

The horizontal bar a, of angle-iron, has its opposite ends a' a' turned down at right angles to form legs, and said downturned portions a' a' are braced by the diagonal bars a^2.

The horizontal bar a, having legs a' a' and braces, constitutes a longitudinal upright side frame for the main body portion of the couch, and two such side frames are provided, which are disposed one at each side of said main body portion. The other upright side frame comprises the horizontal bar b, having downturned end portions b' b', which serve as legs, and suitable braces connecting the legs b' with the bar b. The two longitudinal upright side frames are thus constructed substantially alike. These two longitudinal upright side frames are connected together at their ends by cross-bars c c, and also by diagonal bars c^2 c^2, and they are also connected together at points intermediate their length by the cross-bars c' c', any number of which may be employed. A number of longitudinal bars d, disposed in parallelism with the horizontal bars a b, are connected at their ends to the cross-bars c c and at points intermediate their length are supported upon the cross-bars c' c'.

A row of spiral springs a^3 are mounted on top of the horizontal bar a, and a similar row of spiral springs b^3 are mounted on top of the horizontal bar b, so that each upright side frame serves as a support for a row of springs in addition to serving as an essential part of the frame.

A row of spiral springs d' are mounted on top of each longitudinal bar d, and consequently said bars serve as spring-supporting bars.

To stiffen the sides of the spring-bottom of the main body portion of the couch, a rigid connection is provided for each outside row of springs a^3 b^3, and the rigid connections for both outside rows of springs are made alike, or substantially so, and is herein shown as a flat bar e, extending along horizontally beneath the uppermost convolution of each spring of the row, and another flat bar e', ex-

tending along horizontally above all of the springs of the row, said bars e and e' being connected together at their ends and also connected together at intermediate points at each side of each spring. The uppermost convolution of each spring is thereby rigidly held in place and all of the springs of the row rigidly connected together. The bars e e', in addition to rigidly connecting the springs together, also serve as stiffening-bars for the opposite sides of the spring-bottom.

At each side of the main body portion of the couch a diagonal bar f is provided, one end of which is attached to the horizontal bar of the upright side frame and the other end to the flat bar e, said diagonal bars assisting the springs in performing their functions and also assisting in stiffening the sides of the spring-bottom of the main body of the couch.

At one or both ends of the main body of the couch a pivoted end piece is provided, adapted to be held in different inclined positions and also in a horizontal position, and two ends are herein shown, which are independent of each other, so that either one may be operated at will. The said pivoted end pieces are made alike, or substantially so, so one only will be described.

n n' represent a pair of side bars, of angle-iron, which are disposed in parallelism and which are connected together by cross-bars n^2 n^3, to thereby constitute a base or main frame for the end pieces. The angle-iron bars n n' have their top flanges cut away for a short distance at the inner or lower ends, thereby presenting projecting side flanges 2, (see Figs. 4 and 6,) and said projecting side flanges are pivoted at n^4 to the horizontal bars a b of the upright side frames of the main body of the couch. The bars n n' are thus pivotally connected to the main body, and when in horizontal position the top flanges thereof rest upon the horizontal bars a b, to which they are pivoted. The pivoted base of the end piece has at each side a guideway for a spring-supporting frame, and for simplicity of construction said guideways are formed by flat bars n^5, disposed in parallelism with the side bars n n' and attached at their ends to said side bars n n', but supported at a suitable elevation above the said side bars to provide a space or passage beneath them or between them and the bars to which they are attached. The flat bars n^5 are herein shown as supported at an elevation above the side bars n n' by interposing blocks or washers n^6 between said flat bars and the bars to which they are attached. The spring-supporting frame, which is mounted on the base and which is adapted to slide in said guideways, is herein shown as a pair of flat bars m m', disposed in parallelism and at right angles to the side bars n n' and made long enough to enter the guideways provided in the base, and said parallel bars m m' are connected together by the cross-bars m^2 m^2. A number of spiral springs m^3 are mounted on said spring-supporting frame m m' m^2, which are arranged in rows, there being two springs herein shown in each row, yet any other number of springs or rows of springs may be provided. The springs m^3 of each outside row are rigidly connected together by bars, which also serve as stiffening-bars for the sides of the spring-bottom of the end piece, and, as herein shown, said rigid connections of each outside row of springs m^3 are made alike, or substantially so, and consist of a flat bar o, passing along beneath the uppermost convolution of each spring of the row, and a flat bar o', passing along above all of the springs of the row, disposed in parallelism with said flat bar o o' and are connected together at their ends and also at points at each side of each spring by rivets or otherwise.

The inner ends of the stiffening-bars o are pivoted at o^2 to the ends of the stiffening-bars e, and the outer ends of said stiffening-bars o o' at each side of the end piece are connected together by a cross-bar o^3, which may be made of angle-iron. Thus it will be seen that the stiffening-bars o o' at each side of the end piece are rigidly connected together by the cross-bar o^3 and form a frame surrounding the spring-bottom of said end piece. A pair of diagonal bars o^5 are provided, which are connected at their outer ends to the bars o o' o^3 preferably by the same rivet which connects said bars together and are connected at their opposite ends to the spring-supporting frame m m' m^2—as, for instance, to the bar m' thereof. By providing said diagonal bars o^5, and thereby connecting the spring-supporting frame m m' m^2 with the frame o o' o^3, it will be seen that as the end piece is moved up and down on its pivots n^4 and o^2 the said spring-supporting frame will be automatically moved along in the guideways provided for it, which is due to the relative location of said pivots n^4 o^2. The spiral springs borne by said spring-supporting frame are thereby always held in a position substantially at right angles to the end piece bearing them regardless of the position of said end piece, which is important, as otherwise said springs, which are rigidly connected at their upper ends to the stiffening-bars and at their lower ends to the supports, would be tilted more or less as the end piece is moved up and down on the pivots n^4 o^2. The end piece is herein shown as adapted to occupy two differently-inclined positions and also a horizontal position, yet any other number of positions may be provided, if required. To accomplish this result, the side bars n n' are notched on their under sides, as at t, each bar being herein shown as having two such notches, and a bail-shaped frame is provided comprising a pair of side bars t' t', connected at their outer ends by a cross-bar t^2 and pivoted at their opposite ends at t^3 to the legs a' a' of the main body portion, the cross-bar t^2 of said bail-shaped frame engaging the notches to hold the end piece in an elevated position.

A long slender tongue t^4 is attached at one end to the bar n^3 of the end piece, which extends along beneath the cross-bar t^2 and is upturned at its outer end, as at t^5, to form a handle by which it may be manipulated, and a bar t^6 is attached at one end to said tongue t^4, the free end of which extends along substantially in parallelism with the tongue to form or present a passage between the bar and tongue which receives the cross-bar t^2. Therefore it will be seen that the tongue t^4 bears against the under side of the bar t^2, and the bar t^6 bears upon the top of said bar t^2. The tongue t^4, being made quite long and slender, is more or less spring-acting, and being located beneath the cross-bar t^2 acts to hold the pivoted bail-shaped frame or locking device t'. t^2 up against the side bars n n'.

Referring to Fig. 3, the end piece is shown in horizontal position and the bail-shaped frame or locking device is held up against the side bars n n', and the cross-bar t^2 thereof occupies a position remote from the notches t; but when the end piece is lifted to an inclined position, as represented in Fig. 2, the bail-shaped frame or locking device will follow along beneath the side bars n n' until its cross-bar t^2 engages one of the notches to thereby lock the end piece in an inclined position, the spring-acting tongue acting to hold said bail-shaped frame or locking device in continuous engagement with the side bars as the end piece is lifted. When it is desired to lower the end piece, the bail-shaped frame or locking device is disengaged from the notches by depressing the spring-acting tongue t^4, which not only relieves the pressure of said tongue from the locking device, but also positively disengages said locking device by reason of the bar t^6 acting on top of the cross-bar t^2, which moves it out of engagement with the side bars. The bar t^6 will be made long enough to overlie the cross-bar t^2, so as to disengage it from all the notches that may be provided in the side bars. Thus it will be seen that the bail-shaped frame or locking device is continuously held in operative position by the spring-acting tongue t^4 and is adapted to be moved out of such position by the bar t^6, attached to said tongue.

I claim—

1. In a couch, a main body portion comprising a pair of longitudinal upright side frames bearing springs, cross-bars rigidly connecting said side frames together, longitudinal supporting-bars bearing springs connected at their ends to said cross-bars and means for stiffening the row of springs borne by each upright side frame consisting of a flat bar e passing beneath the uppermost convolution of each spring of the row and a flat bar e' located above all of the springs of the row and rigidly connected to said bar e, substantially as described.

2. In a couch, a main body portion comprising a pair of longitudinal upright side frames bearing springs, cross-bars rigidly connecting said side frames together, longitudinal supporting-bars bearing springs connected at their ends to said cross-bars and means for stiffening the row of springs borne by each upright side frame consisting of a flat bar e passing beneath the uppermost convolution of each spring of the row and a flat bar e' located above all of the springs of the row and rigidly connected to said bar e, and diagonal side bars f connecting the stiffening-bars e, e', with the upright side frames, substantially as described.

3. In a couch, a frame bearing a number of rows of springs, and stiffening-bars e, e' connecting the springs of each outside row together, said bar e passing beneath the uppermost convolution of each spring of the row, and said bar e' located above all of the springs of the row and rigidly connected to said bar e, and an end piece pivotally connected to said frame bearing a number of rows of springs, and stiffening-bars o, o' connecting the springs of each outside row together, said bar o passing beneath the uppermost convolution of each spring of the row, and said bar o' located above all the springs of the row and rigidly connected to the bar o, and said bar o being pivotally connected to the bar e, substantially as described.

4. In a couch, a main body portion bearing springs, an end piece pivotally connected thereto, a sliding frame bearing springs borne by said pivoted end piece, and means for moving said spring-bearing frame as the end piece bearing it is moved up and down, substantially as described.

5. In a couch, a main body bearing a number of rows of springs, stiffening-bars connecting the springs of the outside rows together, an end piece pivotally connected to said main body portion, a sliding frame carried by it bearing a number of rows of springs, stiffening-bars connecting the springs of the outside rows together, which are pivotally connected to the aforesaid stiffening-bars, substantially as described.

6. In a couch, a main body bearing a number of rows of springs, stiffening-bars connecting the springs of the outside rows together, and an end piece pivotally connected to said main body portion, a sliding frame carried by it bearing a number of rows of springs, stiffening-bars connecting the springs of the outside rows together, which are connected with the sliding frame and which are also pivotally connected to the aforesaid stiffening-bars, substantially as described.

7. In a couch, a main body portion, an end piece pivotally connected thereto having notched side bars, a bail-shaped locking device for holding said end piece in an inclined position, and a spring-acting tongue for holding said locking device in continuous engagement with said notched side bars provided with means for manipulating it, and having

a bar t^6 overlying said locking device for removing it from engagement with the notches of said side bars, substantially as described.

8. A spring-bottom for furniture having a number of spiral springs, and a stiffening-bar for said springs consisting of a bar passing beneath the uppermost convolution of each spring of a row and another bar located above all of the springs of said row and rigidly connected to the aforesaid bar, substantially as described.

9. In a couch, a frame bearing a number of rows of springs, and stiffening-bars e, e', connecting the springs of each outside row together, said bar e passing beneath the uppermost convolution of each spring of the row, and said bar e' located above all of the springs of the row and rigidly connected to said bar e, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM S. BOWIE.

Witnesses:
B. J. NOYES,
H. B. DAVIS.