No. 835,179. PATENTED NOV. 6, 1906.

F. J. CROUCH.

AUTOMATIC LOCKING AND RELEASING DEVICE FOR COUCHES.

APPLICATION FILED MAY 7, 1906.

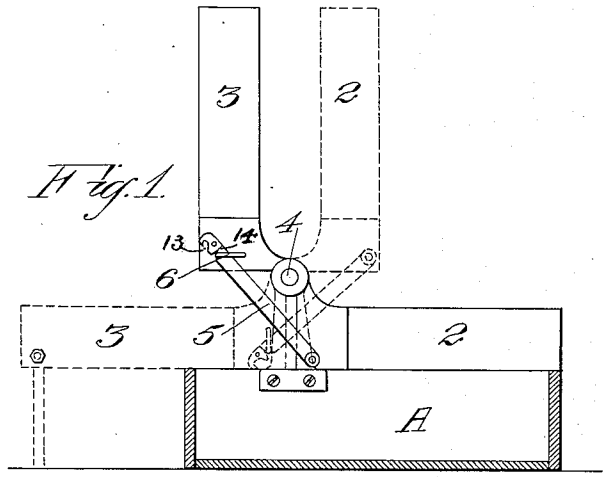


Fig. 1.

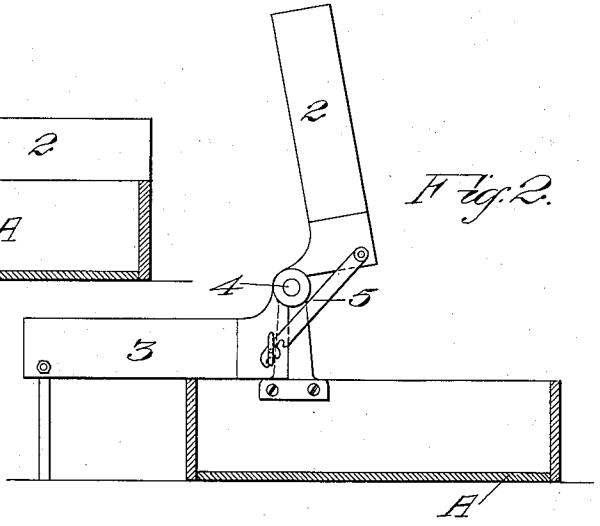


Fig. 2.

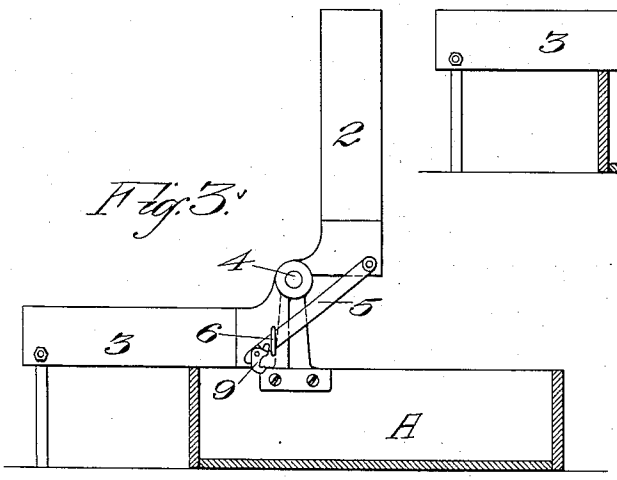


Fig. 3.

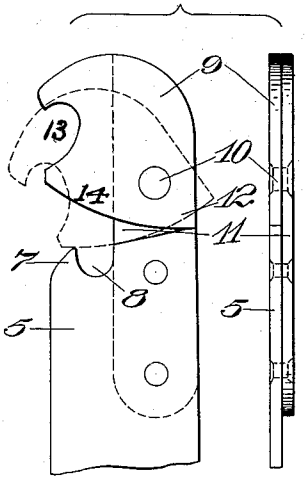


Fig. 5.

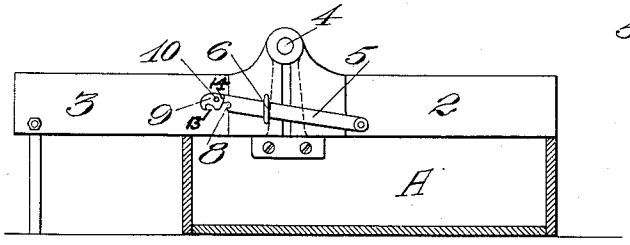


Fig. 4.

Witnesses.
J. Eastburg.
J. Shuse

Inventor.
Frank J. Crouch,
By Glo. H. Strong
Atty.

UNITED STATES PATENT OFFICE.

FRANK J. CROUCH, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO JOHN HOEY, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC LOCKING AND RELEASING DEVICE FOR COUCHES.

No. 835,179. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed May 7, 1906. Serial No. 315,547.

To all whom it may concern:

Be it known that I, FRANK J. CROUCH, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Automatic Locking and Releasing Devices for Couches, of which the following is a specification.

My invention relates to an automatic locking and releasing device which is especially designed for use upon couches and structures having a hinged portion which it is desirable to move so as to stand or lie in different relations with the main portion of the structure.

My invention consists in the combination of parts and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 shows the device on a couch in normal position. Fig. 2 shows the back horizontal and the seat and latch in position ready to be disengaged and extended. Fig. 3 is a similar view showing the latch disengaged. Fig. 4 shows the parts extended. Fig. 5 shows enlarged side and edge views of the latch.

In the drawings I have shown one application of my invention; but it will be obvious that it may be applied to any movable parts of couches, sofas, davenports, and like structures in which it may be necessary to elevate and hold one portion with relation to another and to let said portion down into another position.

I have here shown a couch consisting of a support A, a seat portion 2, and a back 3. The back and seat are hinged together, as shown at 4, and when used for seating purposes the seat portion 2 will lie horizontally upon the support A and the back portion 3 will stand in vertical position, being locked in this position by the invention to be hereinafter described.

When the device is to be used as a bed, the structure will first be tilted by lifting the seat 2 until the back 3 is supported in a horizontal position. Then by disengaging my automatic locking device the seat 2 may be let down into a horizontal position and the whole form a bed.

My locking device consists of a bar 5, one end of which is pivoted to one of the hinged members and the other is formed with my novel latch, which is adapted to engage a locking pin or shoulder 6 upon the other member.

The relative position of the parts is well shown in Fig. 3, where the back has been tilted into a horizontal position and the seat into a vertical position and not yet disengaged from the back. In this position it will be seen that the bar 5 extends across from 2 to 3 and outside of the line of the hinges 4, these parts thus forming a brace to retain the parts 2 and 3 in position until the latch is disengaged.

The latch-bar 5 has its end inclined, as shown at 7, and at the end of this incline is formed a notch 8, which is adapted to engage with the pin or shoulder 6 by engagement with said shoulder when the parts are in the position in which they are required to be held. Pivoted to the end of 5, just beyond the notch 8, is a short plate 9, with a pivot-pin at 10. The plate 9 may be cheaply and conveniently formed by cutting off the end of the bar 5 after the whole bar has been stamped in proper form and then pivoting it to a bar or plate 11, which is riveted to the part 5, and it serves to allow the shoulder 12 of the plate 9 to abut against the end of 5 when the two parts are extended, as shown in Fig. 5. In the lower surface of the plate 9 is made a groove or notch 13, and from the inner rim of this notch the plate 9 has an inclined edge 14.

The operation will then be as follows: When the parts 2 and 3 are tilted to a position at right angles with each other, the bar 5 will slide over the pin or shoulder 6 until by gravity the inclined portion 7 moving over the pin will eventually allow the pin to drop into the notch 8, and thus lock the parts in position. When it is desired to disengage these parts and allow them to occupy a new position with relation to each other, one part is moved slightly toward the other. This causes the pin or shoulder 6 to move up the inclined edge 14, and the weight of the parts will cause the weight of the channel or depression of the part 9 to fall upon the pin. When the parts are again allowed to separate, the pressure of the pin against the inner shoulder of the notch 13 will cause the part 9 to fold into the position shown in dotted lines in Fig. 5, the edge 14 lying in close proximity

to the inclined edge 7 and approximately closing the slot 8, so that when the parts are moved farther the pin will simply move from the notch 13, striking upon the lower edge of the incline 7 or the bar 5, thus allowing the bar to slide freely without further hindrance until the parts have taken their new position.

The construction and attachment here shown illustrate one form in which the apparatus can be used. It may also be used in couches having a hinged leaf adapted to be raised up into a horizontal position or dropped to hang vertically and may be used upon box-couches where the seat portion is raised with relation to the base, so as to allow access to the base, and various other equivalent connections where one part is to be disengageably locked in a certain position with relation to the other part.

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

1. The combination with a frame bearing a stationary locking-shoulder and a swinging leaf pivoted thereon, of a bar-formed locking-link pivoted at one end on said leaf, said link having a notch in its outer end, and having an extension beyond said notched end, and a plate pivoted to said extension and having an inner edge contiguous to the notched end of the link adapted to open or close said notch.

2. The combination with a two-part hinged frame, of a pin or shoulder on one of said parts, a bar having one end pivoted to the other part said bar having a notch formed in the edge of its outer end, a longitudinal extension of the notched end of the bar, a plate pivoted to said extension, having a notch in its lower surface and having the edge adjacent to the end of the bar inclined and approximately continuous with the notch in the bar, said pivoted plate being turnable in relation to the bar so as to close the notch therein, and provide a riding-surface over which the pin may move without engaging the notch.

3. A frame consisting of two members hinged together, a bar having one end pivoted to one of said members, having a notch in the lower side near the opposite end, and an inclined surface extending from the bottom of the bar to said notch, a pin or shoulder on the other member of the frame upon which the lower edge of the bar rides when the two members are moved about their hinges, said pin engaging the notch to lock the parts together, an end extension longitudinally in line with the bar, a plate pivoted to the extension of the bar having an inclined inner end approximately in line with the outer side of the slot whereby a movement of the bar-carrying portion of the frame will cause the pin to slide up said incline and notch in the plate into which the pin falls, and by which when the frame is moved in the opposite direction, the plate is turned about its pivot so as to close the notch in the bar and allow the pin to pass over the notch and the lower edge of the bar to ride upon it.

4. The combination with a two-part hinged frame, of a bar pivoted to one part, and having a notch in its opposite end, said bar having an extension beyond its notched end a pin or shoulder on the other part, with which the notch engages to lock the parts, a second bar pivoted between its ends to the extension of the first-named bar, said second bar being extensible to open the notch of the first bar for engagement, and turnable to close the notch after the parts are disengaged to allow the bar to slide freely over the shoulder.

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

FRANK J. CROUCH.

Witnesses:
CHARLES F. HOEY,
WALTER R. PEASE.