March 27, 1928. 1,663,864

R. RUSSELL

ADJUSTABLE SUPPORT OR STAY APPLICABLE TO DROP END COUCHES

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Fig. 1.

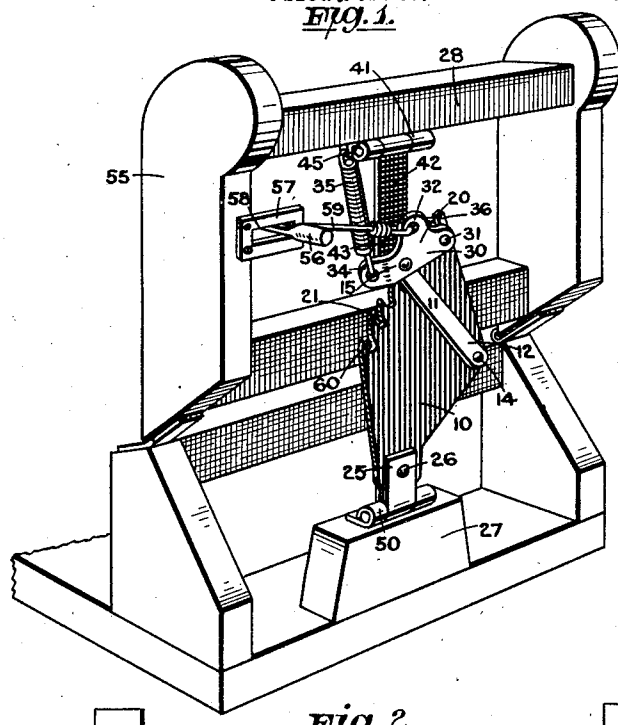
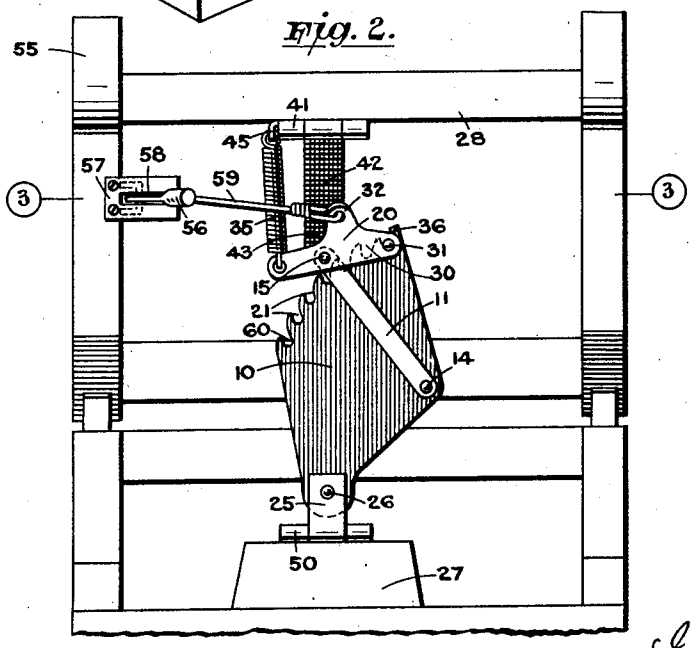


Fig. 2.



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Fig. 3.

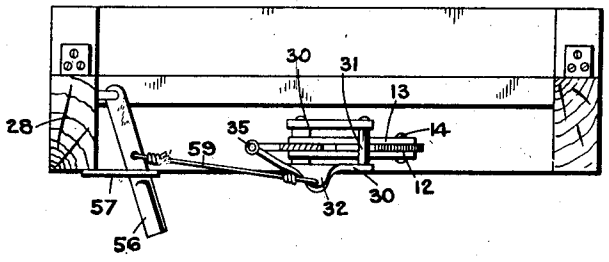
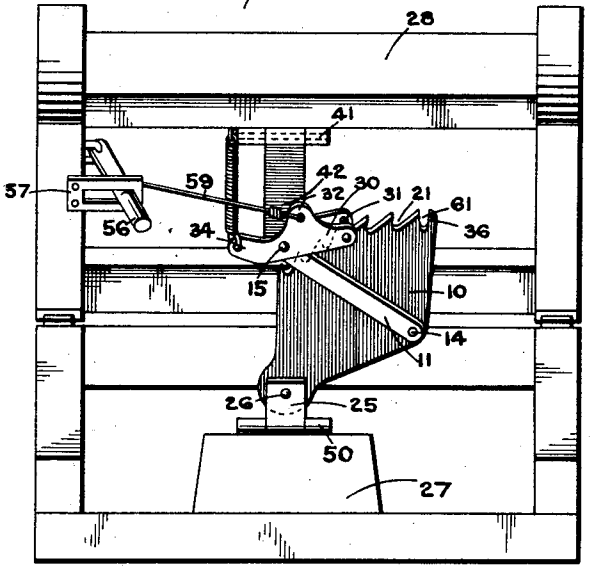


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SUPPORT OR STAY APPLICABLE TO DROP-END COUCHES.

Application filed February 10, 1927, Serial No. 167,240, and in Great Britain February 11, 1926.

This invention relates to couches or the like of the type having a drop-end supported by an extensible stay which is provided with a notched member or detent device for enabling the stay to be set in any one of a number of varying degrees of extension, the stay being secured to the fixed and movable unit of the couch by hinges or their equivalent.

According to the present invention I provide a drop-end couch, settee, or the like, wherein the supporting stay comprises an arm pivoted to one unit of the couch and a plate pivoted to a hinge on the other unit of the couch, the plate being connected to the arm by a link which is foldable on said plate and also having an edge provided with detents or teeth for engagement by a catch mounted for rocking on the hinge pin connecting the link to the arm.

Preferably the teeth or detents in the plate are disposed in a substantially arcuate relation about the pivot connecting the link to the plate, the distance of the teeth or detents from the said pivot being substantially equal to the length of the link, and the length of the catch being relatively small.

By this means an effective stay is provided in which the catch does not move to any substantial amount towards or away from the sides of the drop-end frame or one unit of the couch as the two units are pivotally moved in relation one to the other, thus facilitating the connection of said catch with an operating lever mounted on the side of drop-end frame and eliminating the necessity of providing a wide range of movement for the operating lever.

Referring to the drawings:—

Figure 1 is a perspective view showing one end of a couch framework with the supporting stay in the extended position.

Figure 2 is a front view thereof.

Figure 3 is a section on line 3—3 of Figure 2, and

Figure 4 is a view corresponding to Figure 2 and showing the drop-end of the couch in the partially lowered position.

As illustrated a notched member 10 is made in the form of a metal plate, and the link 11 which is pivotally connected therewith is of double formation and comprised by a pair of metal strips 12 and 13 disposed one on either side of the plate 10 and connected at one end by a rivet 14 passing through the plate and forming the pivotal connection. The other ends of the metal strips 12 and 13 are connected by a second rivet 15 which forms a pivot on which a short catch 20 is mounted for rocking movement. The notches 21 which are of ratchet-like formation are formed in one edge of the plate 10 and are arranged substantially in the form of an arc having its centre at the location of the rivet 14, the arrangement being such that the rivet 15 just clears the notches 21.

The plate 10 is pivotally mounted between a pair of lugs or plates 25 by a bolt or rivet 26 which is disposed at a distance from the rivet 14 which is approximately equal to the distance between the rivet 14 and the rivet 15. The lugs 25 may be associated with the fixed frame 27 or one unit of the couch, while the rivet 15 may be associated with the movable end 28 or other unit of the couch, the arrangement being such that as the couch end 28 is raised or lowered the rivet 15 will move to and from the rivet 26 of the notched member. Thus, it will be seen that the plate 10 is of approximately equal length to the link 11, and that as these two members are folded or extended, the catch 20 will move in relation to the notched edge of the plate.

The catch 20 serves to fix these two members in the desired position and comprises a pair of plates 30 which are located one against the external face of strips 12 and 13, these two plates 30 being connected and spaced apart by the rivet 15 which forms the pivot of the catch and by a second rivet 31 which is adapted for engaging the notches 21. One of the plates 30 is provided with a lug 32 for connection with an operating device, and this plate is also provided with an extension 34 adapted for connection with one end of a spring 35 which tends to move the catch into such a position that it engages with one of the notches. One end or corner of the notched plate 10 is provided with a projection 36 which forms a stop and will prevent the arm or link from being moved so that the catch is no longer over the series of notches.

The rivet or pivot 15 of the catch and link is mounted in the arm 42 which has its other end coiled round the pivot pin of the hinge 41. The hinge 41 has a lug 45 to which the fixed end of the spring 35 is connected.

It will be seen that the catch 20 has a uni-

versal mounting with respect to the drop-end 28, by reason of the rivet 15 and hinge 41 being disposed in planes at right angles one to the other.

The other end of the adjustable support is associated with the fixed frame or base unit 27 of the couch by a universal joint. This joint is formed partly by the rivet or pivot 14 and partly by mounting the lugs 25 on a hinge 50 which is mounted on the frame 27 with its pivot pin disposed in a plane at right angles to the rivet 14. This pair of lugs 25 may be formed from a single strip of metal which is bent around the pin of the hinge until its ends lie parallel one with the other.

It will be seen that the mounting of the adjustable support with respect to the couch is such that the notched plate 10 lies transversely of the couch and more or less in the plane of the drop end 28 when said end is in its upright position, and the points of connection of the adjustable support with the drop end and fixed frame are centrally disposed from back to front of the couch.

Secured on the forward upright member 55 of the drop-end frame 28 is a control lever or handle 56 and a guide plate 57 having a slot 58 in which the handle works. This handle is connected with the lug 32 of the catch by a stout wire, or cord 59, so that movement of the handle will rock the catch and enable it to be disengaged from the notched plate 10 against the action of the spring 35, and thus it will be seen that movement of the handle or lever will enable the drop-end to be moved freely into the desired position and a release of the handle or lever will cause the spring to engage the catch with one of the notches 21 in the notched plate 10 and so secure the drop-end in the position into which it has been moved.

It will be seen in Figures 1 and 2, which show the stay in the extended position, that the rivet 31 engages the end notch 61 of the plate 10, while in Figure 3, which shows the drop-end partially folded down, that the rivet 31 engages with one of the middle notches. In order to cause the catch to assume approximately the same angular position with respect to the horizontal when the stay is either extended or contracted, so that the distance between the catch and the operating lever 56 does not alter appreciably, the notches 21, may if desired, be arranged in a curved or arcuate line such that the end notch 60 is somewhat nearer to the pivot or rivet 14 than the notch 61 which is at the other end of the series of notches.

It will be appreciated that since the effective length of the link 11 is equal to the distance between the rivets 14 and 26, any load on the drop-end is taken by the adjustable support in such a manner that there is no tendency for the frame of the drop-end to be distorted laterally, no matter whether the drop-end is in its upright position or in its lowered position or in any intermediate position.

What I claim then is:—

1. A drop-end for furniture comprising two units hinged together and having an adjustable supporting stay, comprising a hinge on each of the relatively adjustable units, an arm pivoted on one of said hinges, a plate pivoted on the other of said hinges, a link connecting said arm with said plate, said link being pivoted to said plate and foldable thereon, the plate having one edge provided with teeth, and a catch having a projection for engaging said teeth, said catch and said link being connected to said arm by the same pivot pin.

2. A drop-end for furniture comprising two units hinged together and having an adjustable supporting stay, comprising a hinge on each of the relatively adjustable units, an arm pivoted on one of said hinges, a plate pivoted on the other of said hinges, a link connecting said arm with said plate, said link being pivoted to said plate and foldable thereon, the plate having one edge provided with teeth, and a catch having a projection for engaging said teeth, said catch and said link being connected to said arm by the same pivot pin, the hinges on the units being parallel to the hinge by which the units are connected and the pivots upon which the link and plate are mounted being at right angles to said hinges.

3. A drop-end for furniture comprising two units hinged together and having an adjustable supporting stay, comprising a hinge on each of the relatively adjustable units, an arm pivoted on one of said hinges, a plate pivoted on the other of said hinges, a link connecting said arm with said plate, said link being pivoted to said plate and foldable thereon, the plate having one edge provided with teeth, said teeth being arranged in an arc having as its centre the point at which the link is pivoted to the plate, and a catch having a projection for engaging said teeth, said catch and said link being connected to said arm by the same pivot pin.

4. A drop-end for furniture comprising two units hinged together and having an adjustable supporting stay, comprising a hinge on each of the relatively adjustable units, an arm pivoted on one of said hinges, a plate pivoted on the other of said hinges, a link connecting said arm with said plate, said link being pivoted to said plate and foldable thereon, the plate having one edge provided with teeth, and a catch having a projection for engaging said teeth, said catch and said link being connected to said arm by the same pivot pin, said link and said catch being of double formation and engaging on either side of said plate.

5. A drop-end for furniture comprising two units hinged together and having an adjustable supporting stay, comprising a hinge on each of the relatively adjustable units, an arm pivoted on one of said hinges, a plate pivoted on the other of said hinges, a link connecting said arm with said plate, said link being pivoted to said plate and foldable thereon, the plate having one edge provided with teeth, and a catch having a projection for engaging said teeth, the hinges on the units being parallel to the hinge by which the units are connected and the pivots upon which the link and plate are mounted being at right angles to said hinges.

In witness whereof I affix my signature.

ROBERT RUSSELL.