

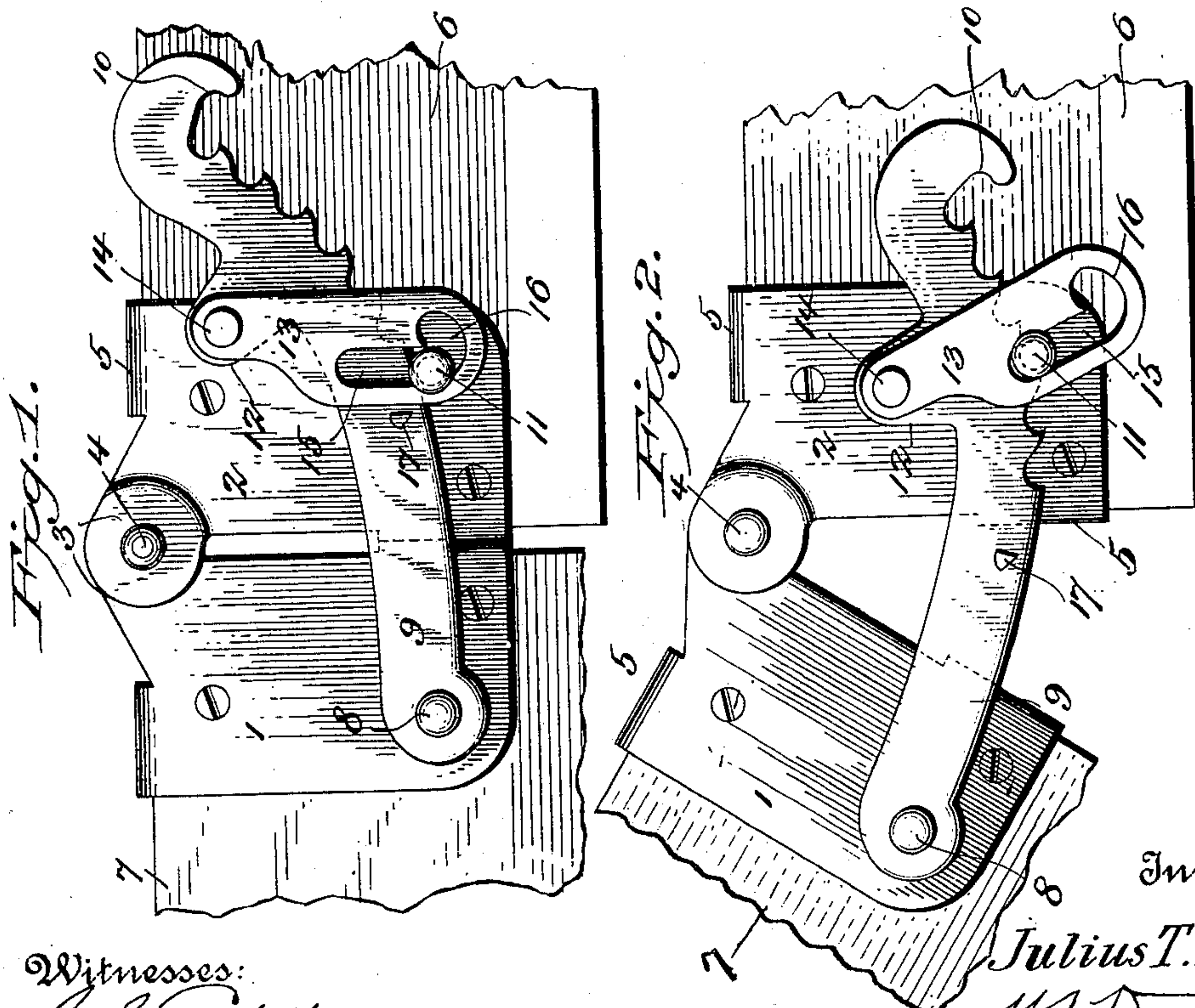
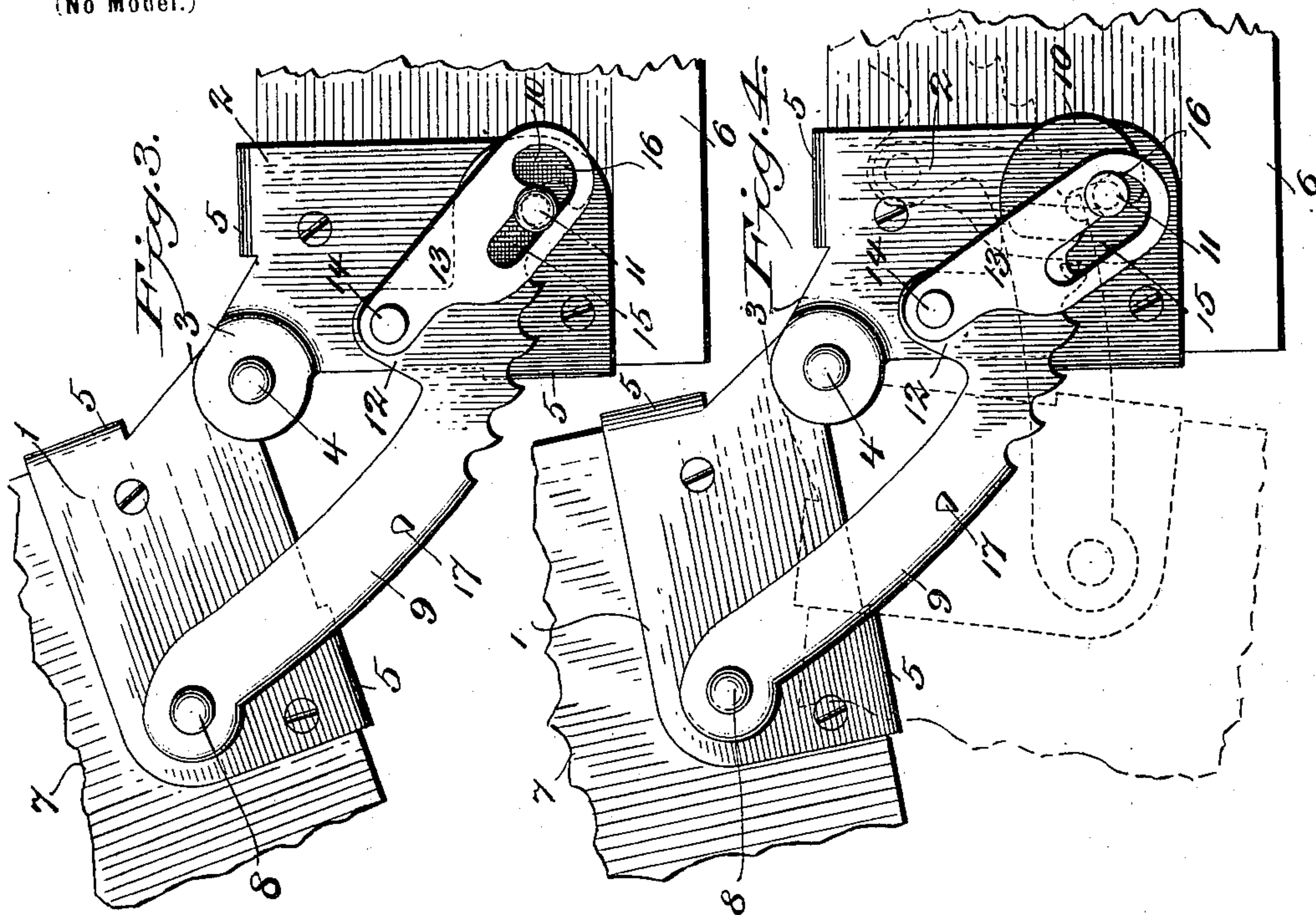
No. 658,125.

Patented Sept. 18, 1900.

J. T. SENG.  
COUCH HEAD HINGE.

(Application filed May 31, 1900.)

(No Model.)



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## COUCH-HEAD HINGE.

SPECIFICATION forming part of Letters Patent No. 658,125, dated September 18, 1900.

Application filed May 31, 1900. Serial No. 18,583. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS T. SENG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Couch-Head Hinges, of which the following is a specification.

This invention relates to improvements in hinges employed for adjustably connecting head-rests to couches.

Heretofore it has been customary to connect head-rests to couches by means of a hinge comprising two securing leaves or members pivoted together and respectively secured to the frames of the couch and the head-rest, a toothed rack being loosely pivoted to one of the members and adapted to engage with a stud projecting from the companion member of the hinge. This provided a very efficient means for adjustably hinging the head-rest to the couch in that any elevation of the rest could be secured by simply raising the rest from its horizontal position to any desired angle or inclination, the rest being held in that position by means of the rack-bars engaging a convenient tooth with the aforesaid studs. The objection to this device consisted in the necessity of employing a string or other means for withdrawing the rack from engagement with the stud.

The prime objects of this invention are to improve upon this construction by obviating the use of the strings or other similar and correspondingly-undesirable devices and by providing a convenient means for automatically unlocking or disconnecting the rack-bars from the studs when it is desired to lower the head-rest, and, finally, to accomplish the same in a simple and economical manner without increasing to any appreciable extent the cost of manufacture of the device.

Referring to the drawings, Figures 1, 2, 3, and 4 are similar views representing the meeting ends of the side rails of a couch and a head-rest frame and illustrating in side elevation one of the improved head-rest hinges, the same being shown in the different positions it assumes during its adjustment, all as will be hereinafter more particularly referred to.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

It will be understood at the outset that two of the hereinafter-described improved hinges constitute a set and that their leaves or members are secured to the meeting ends of both the front and back rails of the couch-frame and head-rest frame. I have, however, deemed it necessary to illustrate but one hinge of the set, it being of course understood that a companion hinge is to be employed and facing the hinge herein shown.

1 and 2 designate the movable and stationary leaves or members, respectively, composing the hinge, the two being extended at their upper meeting corners in the form of lugs or ears 3 and pivoted, as at 4, as is usual. These leaves or members may be given any desired shape, but in the present instance are substantially rectangular and provided at their upper and meeting edges with angular securing lugs or ears 5, which are designed to embrace the upper and meeting ends of the side rails 6 and 7, respectively, of the couch-frame and head-rest frame. The leaves or members are also provided with openings for the reception of the usual screws.

Pivotally and therefore loosely connected to a convenient point of the movable member or leaf 1 by means of a stud or rivet 8 is a gravity rack-bar 9, which extends across the faces of the two leaves or members and the teeth of which are formed on its under side and are disposed toward the free end of said rack-bar, which latter finally terminates in a hook 10. From the inner face of the stationary leaf or member 2 and directly in the path of the teeth of the rack-bar projects a stud 11, designed to loosely engage any one of the teeth or the hook at the end of the rack-bar and by reason of the inclination of the teeth to resist any downward movement of said bar or the leaf or member carrying the same and yet at the same time freely permit of any upward movement of the leaf or member until said stud is engaged by the hook at the free end of the rack-bar. At an intermediary point the rack-bar is provided or formed on its upper side with a slight extension 12 and loosely pivoted upon the same is a gravity-latch 13 by means of a rivet 14. This latch has formed within its edges an angular opening comprising a longitudinal portion 15 and



at its lower end an enlarged offset or eye 16, the said opening receiving the stud 11 and loosely fitting the neck of the same back of its head. The latch is of course capable of swinging upon the pivot 14, and at a point within the circle or arc of a circle which it inscribes is a lug 17, that is formed on and projects from the face of the rack-bar.

This completes the description of the improved hinge, and its operation in detail is as follows: Taking the parts in the positions shown in Fig. 1, which would be the position assumed by the hinge when the head-rest is in its lowest or horizontal position, it will be seen that the stud 11 supports the lower edge of the rack-bar in rear of the inclined teeth of the latter and that the relative position of the stud and the latch is such that the former rests within the longitudinal opening of the latch. In Fig. 2 the parts are illustrated as if the head-rest had been slightly raised, the stud engaging one of the middle teeth of the rack-bar and also the upper end of the longitudinal opening in the latch. It will be apparent that in this position or in any of the succeeding adjustments the inclined teeth engaging with the stud will prevent a subsequent lowering of the head-rest, so that the latter is at all times firm. In Fig. 3 the head-rest has been still further elevated, so that the last tooth of the rack-bar is in engagement with the stud and the latter occupies a position almost at the angle of the opening in the latch. Now, having described the manner of elevating the head-rest, attention is called to Figs. 3 and 4, by which the operation of lowering the head-rest can be best illustrated. To accomplish this latter, the rest is elevated to the highest point, which will cause the last tooth of the rack-bar to pass the stud and will bring the hook 10 of said rack-bar in engagement with the stud. Substantially coincident with the hook is the offset 16 of the latch 13, so that when the hook is thrown into engagement with the stud so also is the offset of the latch brought into such engagement, the parts then being in position shown in Fig. 4. The latch is eccentrically pivoted with relation to the pivot of the rack-bar, and the offset in the latch being slightly beyond the last tooth of the said rack-bar as soon as said offset is in engagement with the stud a reverse or downward movement of the head-rest causes the latch to elevate the rack-bar, so that its teeth escape the stud, thus permitting the head-rest to be lowered to its initial position. (Illustrated in Fig. 1.) When the parts have reached this position, the lug 17 is brought against the edge of the latch and forces the same in an opposite direction, thus disengaging the offset in the latch with the stud.

It will be seen that the usually-employed device such as I have described is greatly improved in that its action is entirely automatic and that I attain this result without

any appreciable increase of cost in the manufacture.

Although I have herein illustrated the invention in connection with a head-rest comprising a part of the couch, and it is primarily so intended to be used, yet it is apparent that it may be employed in other relations.

Having described my invention, what I claim is—

1. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth beyond which teeth it terminates in a hook, and a gravity-latch eccentrically pivoted with relation to and upon the rack-bar and provided with an offset substantially coincident with the said hook, and a lug extending from the rack-bar in the path of the latch and adapted to strike and disengage the latter when the leaves or members are swung toward each other.

2. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth beyond which teeth it terminates in a hook, and a gravity-latch eccentrically pivoted with relation to and upon the rack-bar and provided between its edges with longitudinally and transversely disposed communicating slots, the latter one of which is beyond the last tooth and coincident with the hook, and a lug extending from the rack-bar and into the path of and adapted to strike the said latch and disconnect the same from the stud.

3. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected at their upper inner corners, the stud extending from one of said members, the gravity rack-bar pivotally connected to the face of the companion member and provided upon its under side with teeth, a gravity latch eccentrically pivoted with relation to and upon the rack-bar and provided with an offset occurring beyond the last tooth of the rack-bar and adapted to engage the stud, and a lug extending from the face of the rack-bar and adapted to strike the latch and disengage the same from the stud when the leaves or members approach each other.

4. The combination with a couch-frame and a head-rest frame, of the hinge connection consisting of the leaves or members 1, 2, pivotally connected at their upper ends, the stud 11 extending from one of the same, the rack-bar 9, pivoted as at 8 to the face of the companion member or leaf and provided with teeth beyond which it terminates in the hook



10, the latch 13 pivoted to the extension 12 of the rack-bar, as indicated at 14, and provided with the slots 15, 16 and the lug 17, as and for the purpose set forth.

5 5. The herein-described improved hinge, the same comprising the companion leaves or members pivotally connected, a stud fixedly arranged in relation to one of said members, a gravity rack-bar pivoted at one end with  
10 relation to and adapted to move with the companion member and to engage the stud, the latch 13, pivoted upon and eccentrically with relation to the said rack-bar, and provided with the slot 15, having at one end the  
15 offset 16, to operate as described, and means for liberating the said latch from the stud when the said leaves or members assume a certain relative position.

6. The herein-described improved adjustable connection, the same comprising opposite companion members or leaves pivotally connected, a stud extending from the face of one of said members, a rack-bar loosely pivoted to the opposite member and having teeth  
25 along its under side, and means for automatically disengaging the rack-bar from the stud at a predetermined point and supporting the same out of such engagement during the approach of said leaves or members, and means  
30 for lowering the rack-bar at the end of such movement.

7. The herein-described improved hinge

the same comprising the companion leaves or members pivotally connected, a stud located with relation to one of said members, the rack- 35 bar pivoted with relation to the companion member and adapted to move with the same and to engage said stud, said rack-bar terminating at its free end beyond its teeth in a stop, the latch 13, pivoted upon and in eccentric 40 al relation to said rack-bar, and having the slot 15, provided with the offset 16 coincident with said stop, and means for disengaging said latch from the stud when the leaves or members assume a certain relative 45 position.

8. The combination with the couch or sofa frame, and the head-rest frame, of hinges for the same, studs extending inwardly from the sofa-frame adjacent to the hinge-points, 50 gravity-bars pivotally connected to the head-rest frame and terminating in a hook or stop, a latch pivoted upon and eccentrically with relation to the said gravity-bar and having an engaging means substantially coincident 55 with the hook of said gravity-bar, and means for liberating the said latch from engagement with the stud.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS T. SENG.

Witnesses:

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G. J. BIEHL.