

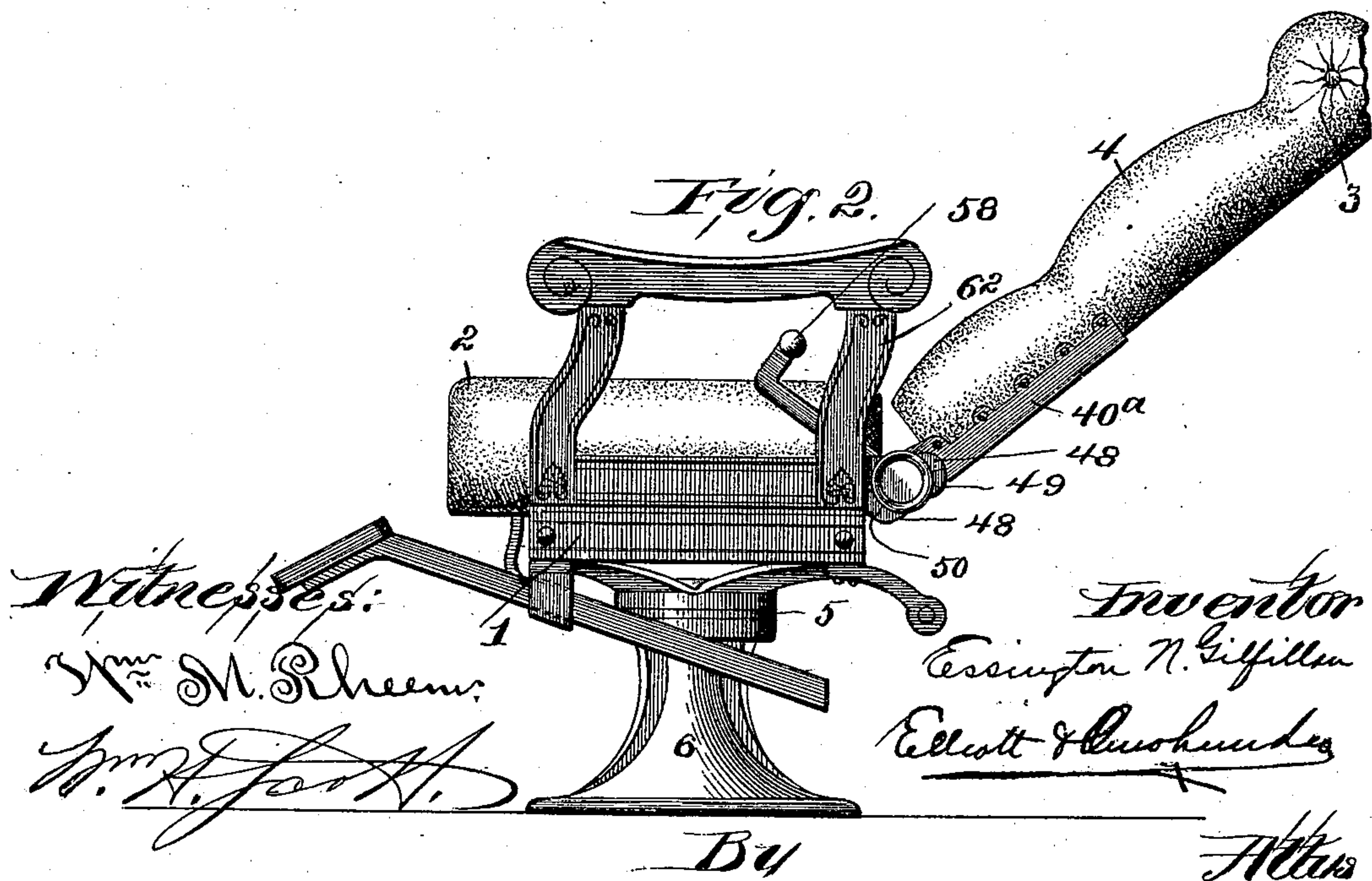
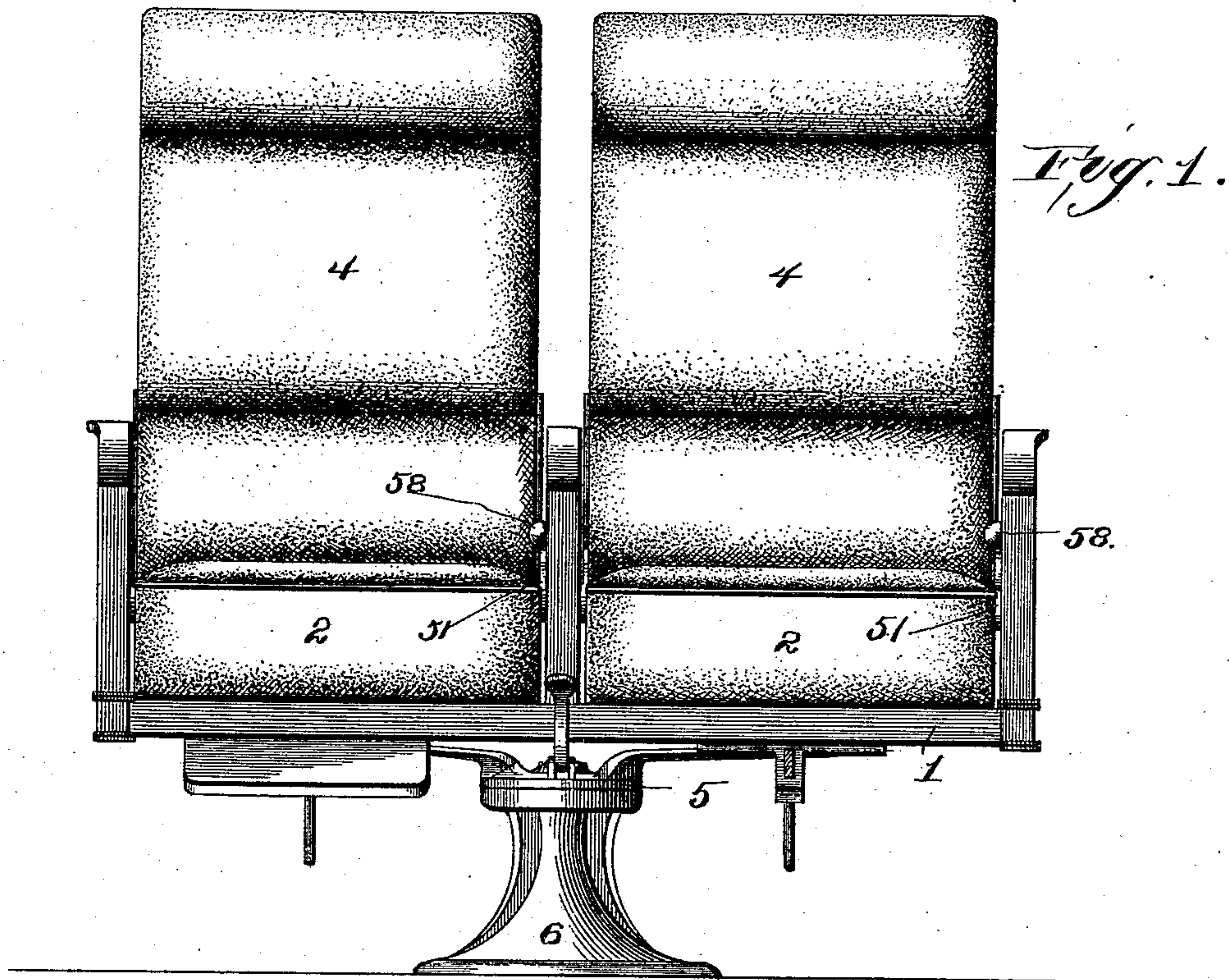
(No Model.)

3 Sheets—Sheet 1.

E. N. GILFILLAN.
RECLINING CHAIR.

No. 549,599.

Patented Nov. 12, 1895.



(No Model.)

3 Sheets—Sheet 2.

E. N. GILFILLAN.
RECLINING CHAIR.

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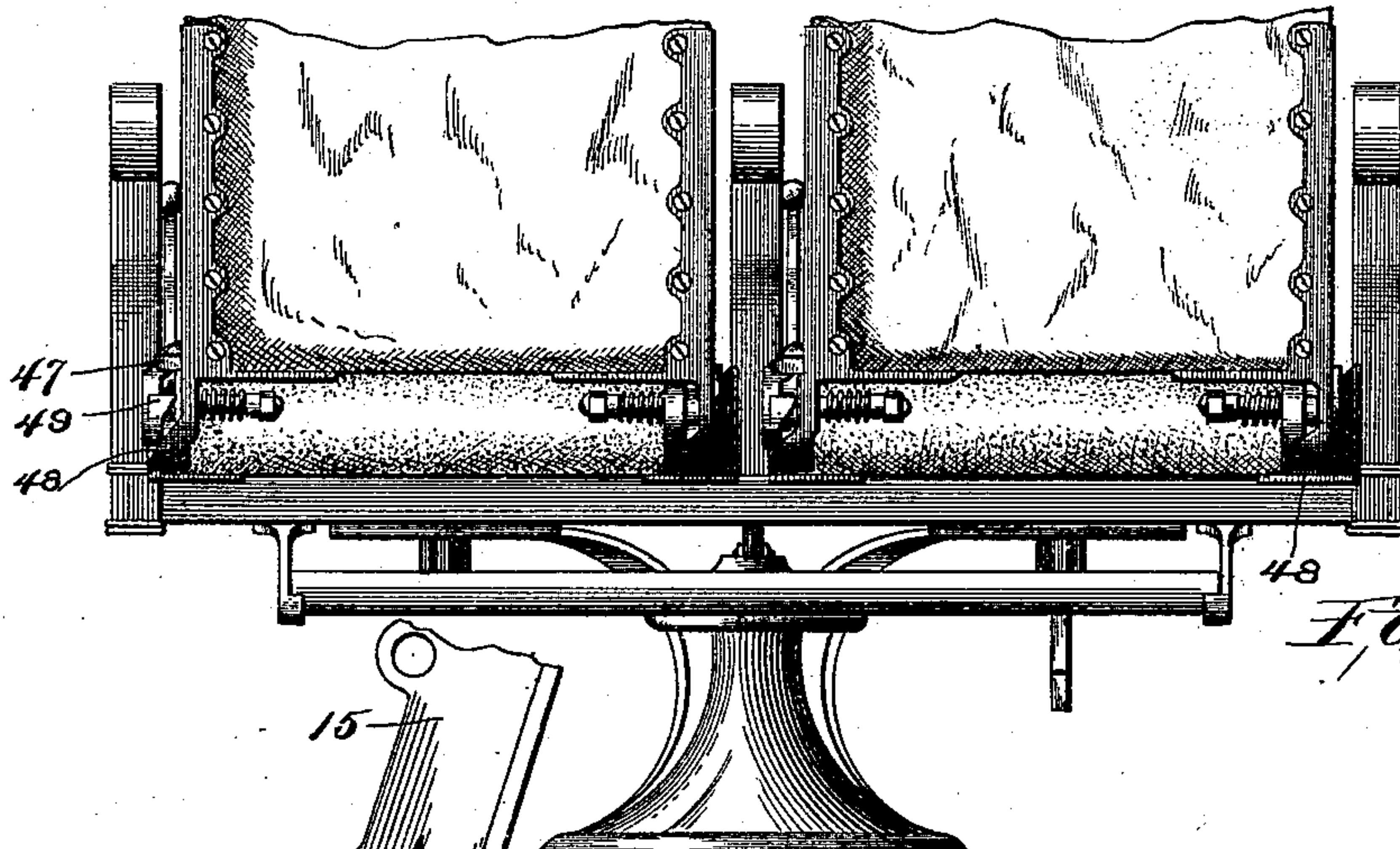


Fig. 3.

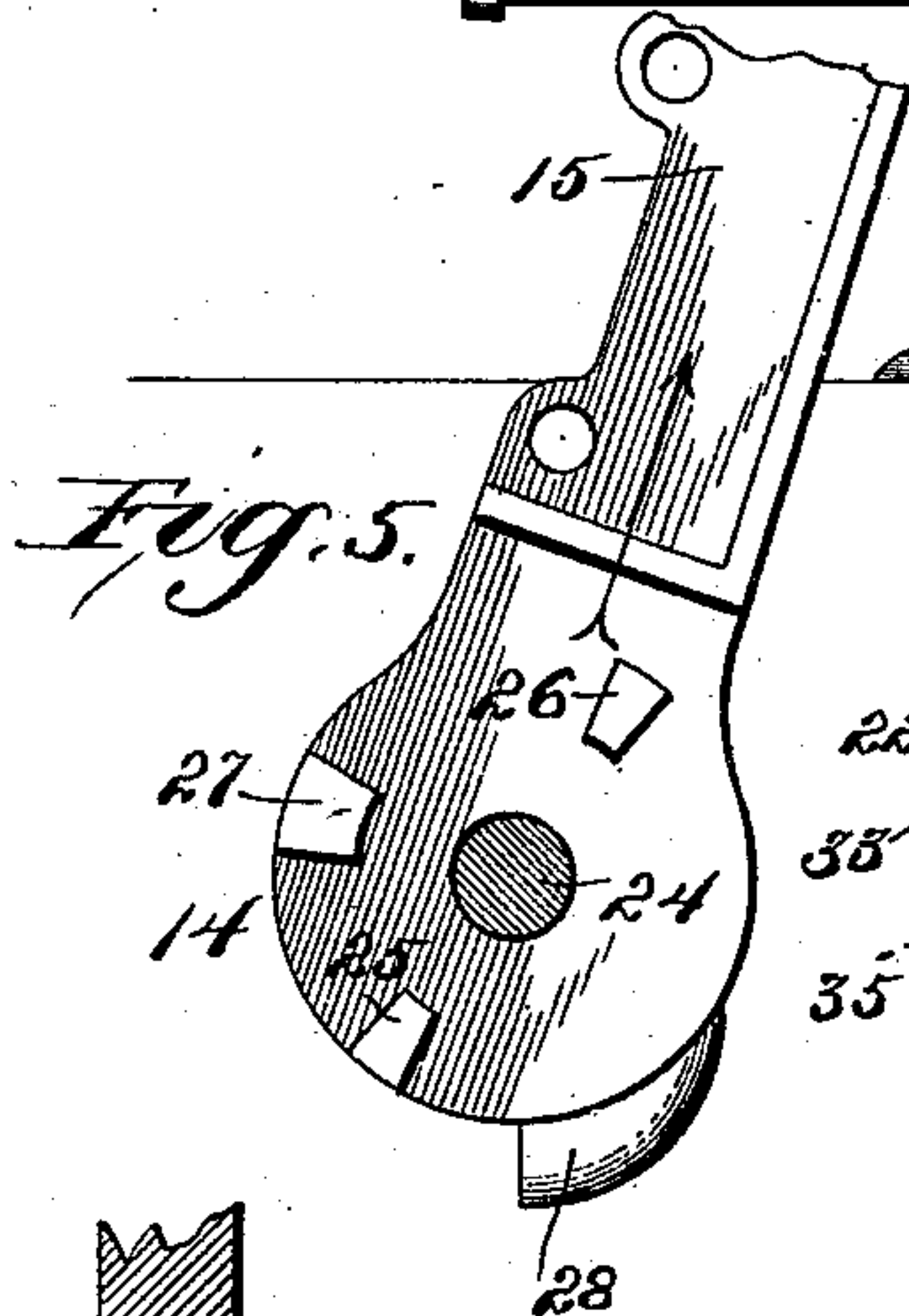


Fig. 5.

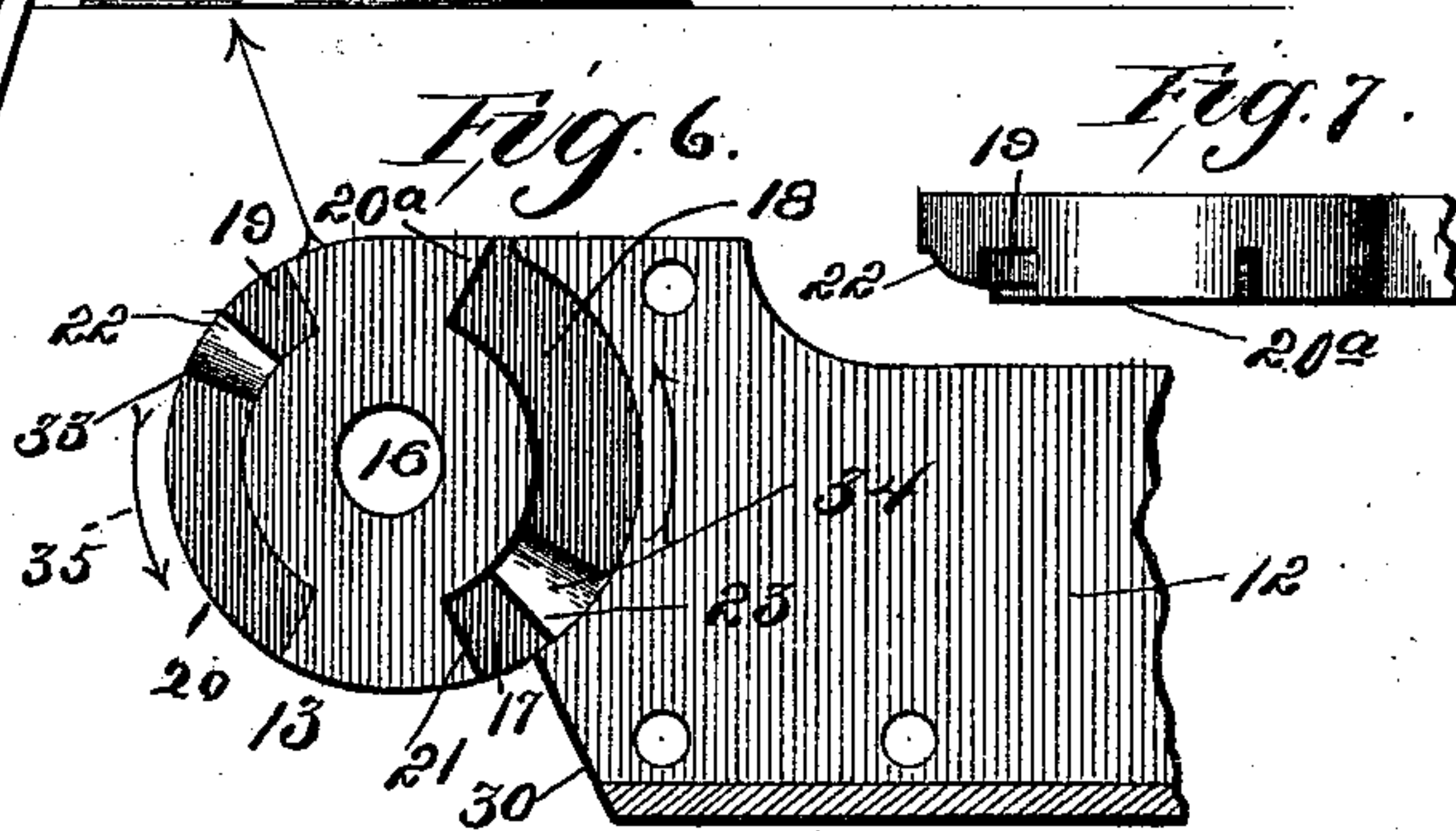


Fig. 6.

Fig. 7.

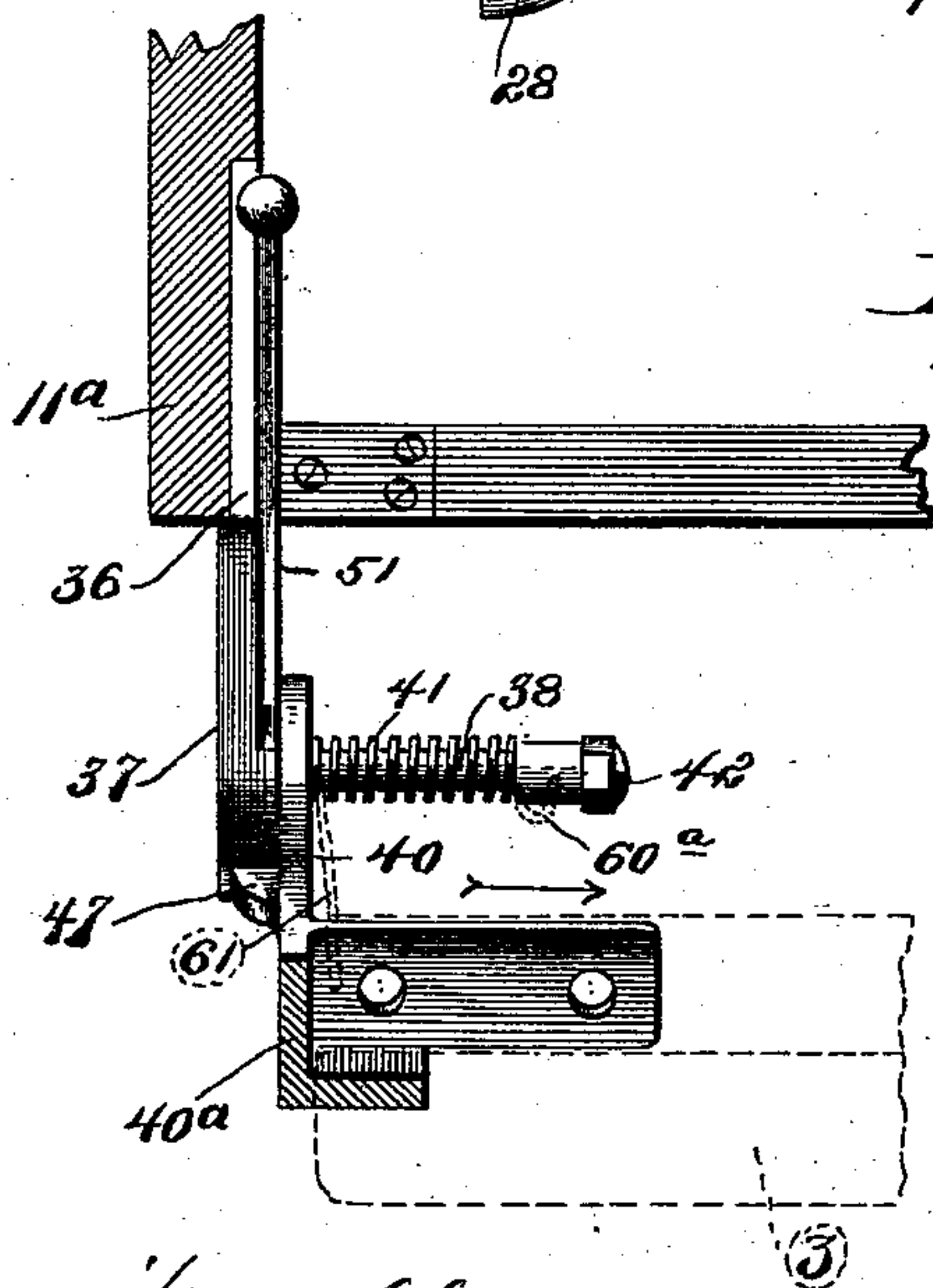
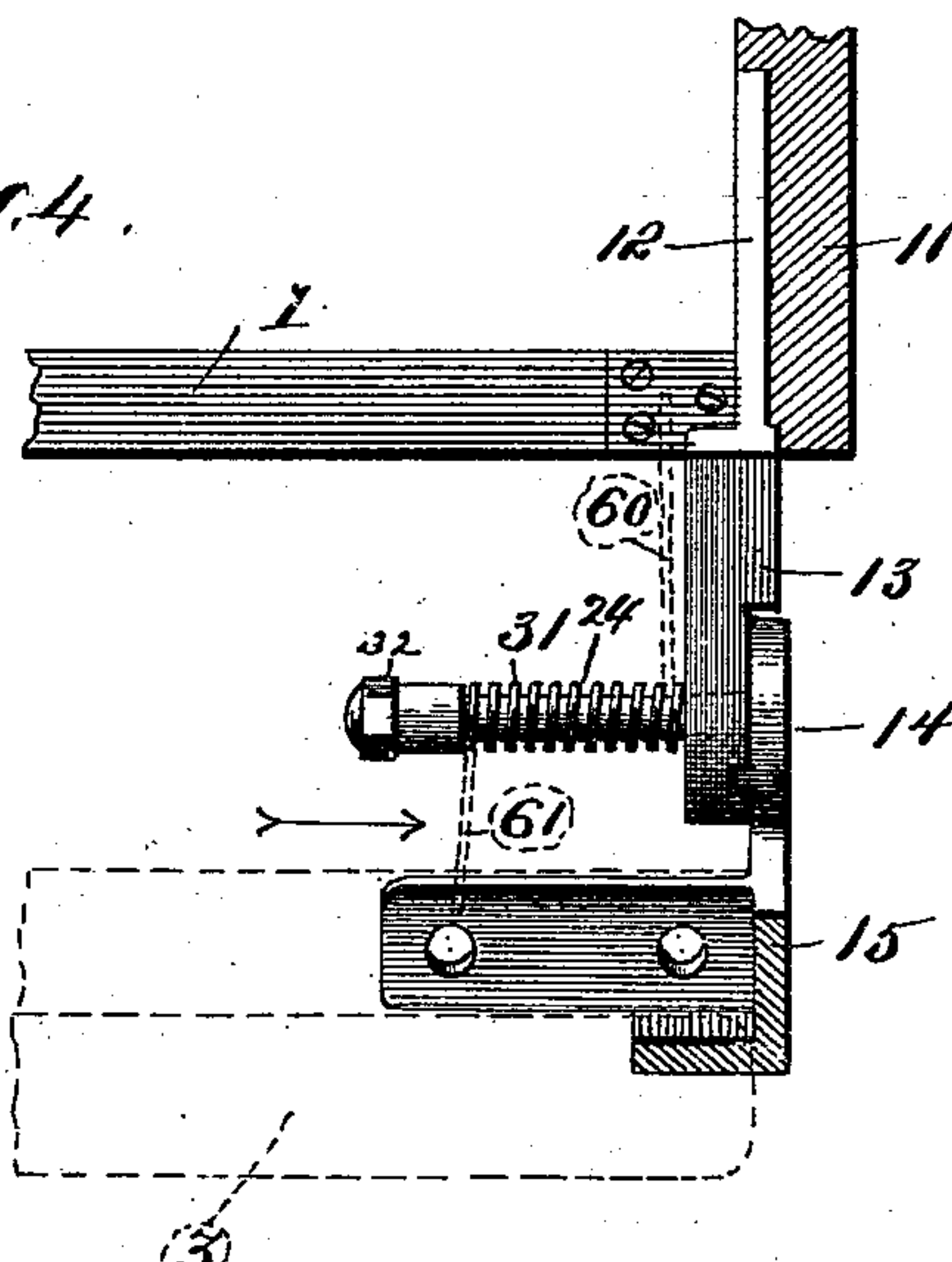


Fig. 4.



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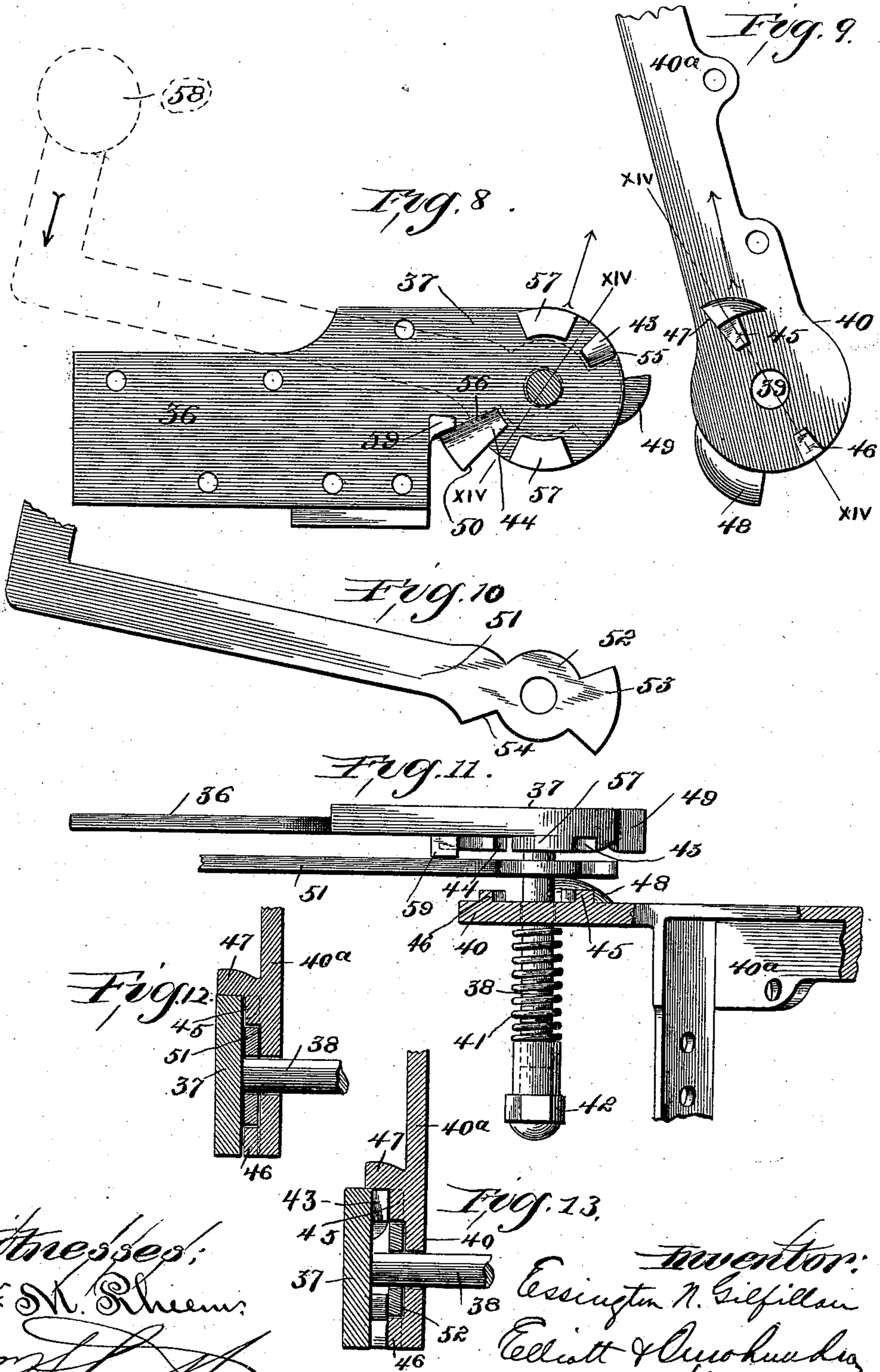
(No Model.)

3 Sheets—Sheet 3.

E. N. GILFILLAN.
RECLINING CHAIR.

No. 549,599.

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UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO HARRIS A. WHEELER, OF SAME PLACE.

RECLINING-CHAIR.

SPECIFICATION forming part of Letters Patent No. 549,599, dated November 12, 1895.

Application filed November 24, 1891. Serial No. 412,963. (No model.)

To all whom it may concern:

Be it known that I, ESSINGTON N. GILFILLAN, a citizen of the United States, residing in the city of Chicago and State of Illinois, have invented certain new and useful Improvements in Reclining Seats or Chairs, of which the following is a specification.

My invention relates to reclining car-seats, and more particularly it has reference to the mechanism for adjusting the back of the seat to the desired inclination and locking the same in position when so adjusted.

The object of my invention is to provide the seat with improved mechanism for this purpose which shall occupy a minimum of space and will enable the occupant of the seat to readily adjust the back to the desired inclination without rising from a sitting posture.

A further object of the invention is to provide the back of the seat with means which when the back is shifted sidewise in one direction will lock the back in position and when the back is shifted sidewise in the opposite direction will permit the back to be adjusted to the desired inclination.

With these ends in view my invention consists of certain features of novelty hereinafter described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a front elevation of a double reclining car-seat having my improvements applied thereto. Fig. 2 is a side elevation of the same, showing the back in its lowermost position. Fig. 3 is a rear elevation of a double reclining car-seat, showing my improvements applied thereto. Fig. 4 is an enlarged detailed plan view showing the hinge-clutch on both sides of one of the seats. Fig. 5 is an enlarged detailed view showing the face portion of one member of one of the hinge-clutches. Fig. 6 is a similar view of the other member of the same hinge-clutch, the member shown in Fig. 5 being adapted to be turned over and fitted onto the member shown in Fig. 6, with the arrow on the former pointing in the direction of the straight arrow in Fig. 6. Fig. 7 is a plan view of the member shown in Fig. 6 on the same scale. Fig. 8 is a face view of one

member of the hinge-clutch employed on the opposite side of the chair. Fig. 9 is a face view of the other member of the hinge-clutch employed on the same side, the member shown in Fig. 9 being adapted to be turned over and fitted against the member shown in Fig. 8, with the straight arrow in Fig. 9 pointing in the direction of the arrow in Fig. 8. Fig. 10 is a detail view of the disengaging-lever hereinafter described. Fig. 11 is a plan view, partly in section, of the portions shown in Figs. 8, 9, and 10, showing the relative arrangement of the portions, but the portions being pulled apart an abnormal distance for the sake of illustration. Fig. 12 is a sectional view of the complete hinge-clutch shown in Figs. 8, 9, and 10, taken on the line XIV XIV, Fig. 8, which line will also cut the casting shown in Fig. 9, as indicated by the line XIV XIV therein. Fig. 13 is a similar view showing the members separated by the disengaging-lever.

In the drawings I have shown my invention as applied to the usual double seat; but inasmuch as the seats, so far as the back adjusting and locking mechanism which forms the subject of my present application is concerned, are entirely independent of each other it will of course be understood that the device and its operation are the same when applied to a single seat, and as this adjusting and locking mechanism for the backs is the same on both seats but one need be described, and in order to avoid confusion it might be here stated that the invention will be described with reference to one of the seats only, as though but one were shown.

In the drawings, wherein like signs of reference indicate like parts throughout the several views, 1 represents the bottom frame, carrying a removable cushion 2; 3, the back-frame having a cushion 4, all of the usual or any suitable construction, supported upon a base-plate 5, which in turn is revoluble upon a pedestal 6.

Secured to the side bar 11 of the bottom frame, preferably on the inner side, at one side of the seat—say the right-hand side—is a bracket-casting 12, having suitable flanges and screw-holes for its secure attachment. (See Fig. 4.) This casting is provided with a

rearwardly-extending portion 13, which constitutes one member of the hinge-clutch on one side of the seat and which co-operates with the other member 14 of the hinge-clutch on the same side, made integrally or otherwise secured to a casting or bracket 15, that is provided with suitable perforated flanges for its secure attachment to the frame 3 of the back.

The member 13 in one of its faces, preferably its outer face, is provided on one side of its central hub or perforation 16 with a short and a long circular cut-away portion or groove 17 18, respectively, and on the other side of such perforation 16 with similar grooves or notches 19 20, arranged, however, in the reverse position—that is, with the shorter one 19 at the top—thus forming stops or catches 20^a 21 at top and bottom, respectively, and at a short distance from each of these other stops 22 23, respectively. The other member 14, the inner face of which is shown in Fig. 5, is provided with a central pin or shaft 24, rigidly planted therein or made integrally therewith, which projects inwardly through the perforation in the member 13, the member 14 coming on the outside, as more clearly shown in Fig. 4. The coacting faces of the members 13 14 are held normally in contact, as shown in Fig. 4, by means of a coiled spring 31, sleeved upon the inner end of the pin or shaft 24 and bearing between the inner side of the member 13 and a nut 32 on the end of the shaft or pin 24.

The member 14 is provided at two points, preferably diametrically opposite each other, with two lugs 25 26, which are of about the same dimensions as the notches formed by the grooves 17 19 in the member 13, and when the back of the seat is in its uppermost position these lugs 25 26 fit in said notches 17 19, respectively, and thus hold the back firmly in place. When the back is in its lowermost position, the lugs 25 26, having been caused by the shifting of the back (which movement is accomplished by mechanism hereinafter described) to rise out of their respective notches, slide over or pass the outer edges of the stops 22 23 and travel, respectively, in the grooves 18 20 in the direction of the curved arrows, Fig. 6, until a lug 27 on the face and a lug 28 on the edge of the member 14 simultaneously strike against the stop 20^a and a stop 30, respectively, formed on the lower edge of casting 12, the lug 27 of course riding in the groove 18. When the lugs 25 26 retrace their course in the grooves 18 20—that is, when they return to their former positions as the back of the seat is again elevated to its uppermost position—such lugs strike against inclined or beveled edges 33 34 on the stops 22 23, respectively, and, riding upward over these inclines against the pressure of the spring 31, drop off of the precipitous edges on the opposite side of each of said stops back into the notches 17 19. It will now be seen that when pressure is applied to the member 14 in the direction of the arrow, Fig. 4, the

spring 31 will be compressed and the lugs 25 26 withdrawn clear of the stops 22 23, whereupon the said member 14 will be free to rotate downward or in the direction of the arrow 35, Fig. 6, until the lugs 27 28 come against their respective stops 20^a 30.

In order to insure the striking of the lug 27 against its stop 20^a, the stops 22 23 are made of less depth or height than the stop 20^a, as more clearly shown in Fig. 7, so that the lug 27 need not be withdrawn entirely from alignment with the latter. This failure of engagement on the part of the lug 27, however, is not likely to occur for the further reason that the spring begins to return the lugs 25 26 again into the grooves 18 20 as soon as the summits or outer ends of the stops 22 23 are passed, and at this time the lug 27 has, of course, not as yet reached the stop 20^a, and hence by the time it does reach it it is well projected into its groove 18. The possibility of any failure of the lug 27 to strike its stop 20^a is further provided against by making the lug 28 sufficiently long, as shown in Figs. 5 and 6, to engage its stop or shoulder 30, even though the lug 27 should be withdrawn entirely from the groove 18.

The mechanism thus described forms the hinge-clutch for one side of the back. In the drawings it is shown as applied to the right-hand side. The clutch at the other side and the mechanism for imparting a side shift to the back in the direction of the arrow, Fig. 4, and releasing the engaging-faces of both of such clutches will now be explained, with reference more particularly to Figs. 4 and 8, to 13, inclusive.

Secured to the other side bar 11^a of the bottom frame is another bracket-casting 36, which, like the casting 12 is provided with a rearward projection 37, constituting one member of the hinge-clutch. The other member of the hinge-clutch is a rigid part of a bracket-casting 40^a, secured to the back-frame similarly to the casting 15. These members are held in engagement by means of a coiled spring 41, sleeved on a pivot pin or bolt 38 and bearing between a nut 42 on the end of said bolt and the member 40, secured to the back. In this instance, however, instead of passing the pivot pin or bolt 38 through the member 37 I prefer to form such pin rigid therewith and pass it through a perforation 39 in the other member 40 in such a manner that the member secured to the back on one side of the seat will come on the outer side of the member secured to the bottom on that side and the member secured to the back on the other side of the seat will come between the two members secured to the bottom, thus leaving the back free to shift sidewise in the direction of the arrow, Fig. 4; but this particular arrangement, as will readily be seen, is not absolutely essential.

The member 37 has its engaging-face preferably on the inner side, while the member 40 has its engaging-face preferably on its outer

side, or the relative arrangement being just the reverse of that described with reference to the hinge-clutch on the opposite side of the seat. The member 37 is provided at its upper side with a stop 43 and at its lower side with a stop 44, with which stops engage, respectively, a lug 45 on the upper part and another lug 46 on the lower part of the member 40 when the back is in its uppermost position. When the back is shifted in the direction of the arrow, Fig. 4, these lugs 45 46 will withdraw from engagement with the stops 43 44, and the back may then be lowered until a lug 47, just above the lug 45, and a lug 48 on the lower edge of the member 40 simultaneously strike against a stop 49 on the rear edge of the member 37 and a downward extension or enlargement 50 on the stop 44, thus arresting further downward movement of the back and holding it in its lowermost position. As more clearly shown in Figs. 3, 4, and 13, the lugs 47 48 are longer than the lugs 45 46, so as to project beyond them and overlap the stops 49 50 when said lugs 45 46 are withdrawn from engagement with the stops 43 44.

Interposed between the members 37 40 is a disengaging lever 51, having a circular centrally-perforated portion 52, through which the pivot-pin 38 passes, arranged between and being about flush with the inner ends of the stops 43 44, so as to be capable of turning on said pivot. The rear end of this lever, however, is provided with a nose or a projection 53, and just forward of its pivotal point with another nose or projection 54, which noses when the lever occupies the position shown in dotted lines in Fig. 8 lie flat against the faces of both members, the said noses being flush with the outer edges of the lugs 45 46 and stops 43 44, as shown in Figs. 11 and 12; but when the outer end of the lever is depressed the noses 53 54 will ride up inclined sides 55 56, respectively, on the stops 43 44, and in doing so will withdraw the lugs 45 46 from engagement with their respective stops 43 44, as shown in Fig. 13, over which stops they slide as the back lowers and gradually slip down the inclines 55 56 under the influence of the springs 31 41, the downward motion continuing until the lugs 47 48 strike their respective stops 49 50, as explained. It is of course understood that during the downward movement of the back the said noses on the lever cannot engage with the abrupt sides of the stops 43 44, because such noses are of greater width than the distance between such stops and the adjacent stops 57.

When it is desired to return the back to its former uppermost position, it is only necessary to force it upward, whereupon the lugs 45 46 will ride up the inclines 55 56, respectively, of the stops 43 44 and drop off at the opposite sides of the latter, the upward movement of the back being limited by stops 57, against which the lugs 45 46 impinge as soon as they leave the precipitous edges of the

stops 43 44. The foremost advantage of this lever, however, is that it enables the occupant to adjust the back with one hand without rising from the seat, as the back is entirely under the control of such lever. This is because when the noses 53 54 ride up the inclines 55 56 and disengage the lugs 45 46 from the stops 43 44 the said lug 45 comes into engagement with and is supported by the upper edge of the nose 53, while the lug 46 strikes against the lower edge of the nose 54. When the parts are in this position, the back is supported by the lever so long as said lever is held by the operator and may be raised or lowered by the lever, as desired. After the lugs slide down the inclines 55 56 they are supported by the noses of the lever, as described, and hence the back may be raised by means of the lever alone, or it may be raised independently of the lever.

From the foregoing the great advantages derived from disengaging the clutch members by shifting the back sidewise will be readily understood, for it is quite obvious that by securing the back to the shiftable clutch members it, as well as such members, may be under the control of the lever, whereby they may be simultaneously operated by one hand of the occupant of the seat; and, moreover, by such an arrangement I am enabled to make a simple, strong, and rigid construction, and one which is operative even without the lever above described.

In order that the downward movement of the outer end of the lever may be limited, I provide the casting 36 with a stop 59, which, as shown in Fig. 11, is of greater length or lateral extent than the stops 43 44, so that the lever when it is bearing upon the summit of the latter stops will not fail to strike the stop 59.

The lever 51 is preferably arranged on the left-hand side of the seat, between the bottom cushion and the arm 62, and has a handle 58, which projects upward within convenient reach of the occupant of the seat. This lever, however, together with the hinge-clutch, with which it co-operates, may, if desired, be arranged on the opposite side.

In order that the spring 31 may be made to serve for returning the back to its normal uppermost position or to assist in so doing, one end of it may be secured to the seat, as shown at 60 in dotted lines, and its other end carried upward under the back, as shown at 61. The other spring 41, however, which is on the bolt that is secured to the portion 37, may have one of its ends secured to such bolt, as shown at 60^a, and its other end arranged under the back, as shown at 61.

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

1. In a reclining seat, the combination with the bottom, of the reclining back shiftable sidewise, and a hinged clutch connecting the back and seat and provided with a series

of projections adapted to contact and hold the back in any desired position, and a stop upon one section of the clutch adapted to limit the rear movement of said back, substantially as described.

2. In a reclining seat, the combination with the bottom, of the reclining back shiftable sidewise, a two-part hinge clutch for connecting the bottom and back and locking the back in any desired position, and a lever interposed between the members and adapted to effect the sidewise motion to disengage the parts of the clutch, substantially as described.

3. In a reclining seat, the combination with the bottom, of the reclining back shiftable sidewise, a two-part hinge clutch for connecting the bottom and back and locking said back in any desired adjustment, one part of said hinge clutch being provided with stops, and the other with lugs for engaging the stops, a spring for holding the parts into engagement, and a lever arranged between the said parts, and adapted to shift one part sidewise to effect the disengagement, substantially as specified.

4. In a reclining seat, the combination with the bottom; of a reclining back shiftable sidewise, a two part hinge-clutch, connecting said back and seat and whose one member is provided with inclined or beveled stops and the other with lugs for engagement with said stops for locking the back at various inclinations and a lever arranged between said members and having noses or projections adapted to slide over said inclines and disengage said lugs and stops, substantially as set forth.

5. In a reclining seat, the combination of the bottom; of a reclining back shiftable sidewise, a two part hinge-clutch connecting said back and seat and whose one member is provided with inclined stops and the other with lugs for engagement with said stops for locking the back at various inclinations, a lever arranged between said members and adapted to be crowded between the said lugs and stops for forcing them out of engagement, a pin pivoting said members and the lever together and a spring for holding said members in engagement, substantially as set forth.

6. In a reclining seat, the combination with the bottom; of a reclining back shiftable sidewise, a two part hinge-clutch, connecting said back and seat and whose one member is provided with inclined or beveled stops and the other with lugs for engagement with said stops, for locking the back at various inclinations, a lever arranged between said members and having noses or projections adapted to be crowded between said lugs and stops, a

pivot pin projecting from one of said members through the other and through said lever, a coiled spring sleeved on said pin and bearing between one of said members and a nut on the pin, substantially as set forth.

7. In a reclining seat, the combination with the bottom; of a hinge clutch member secured to each side thereof, the back shiftable sidewise, a hinge clutch member secured to each side of said back and engaging the aforesaid members respectively, a spring tending to force the back bodily in one direction and a lever arranged between two of said members and adapted to shift the back bodily in the opposite direction, substantially as set forth.

8. In a reclining seat, the combination with the bottom; of a hinge clutch member secured at each side thereof, the back shiftable sidewise, a hinge clutch member secured to each side of said back and engaging with the aforesaid members respectively, a pivot pin projecting from one of said members through the other in both pairs, a spring on each of said pins, tending to force the back bodily in one direction and a lever arranged between the two members of one pair and adapted to shift the back bodily in the opposite direction, substantially as set forth.

9. In a reclining seat, the combination with the bottom; of the reclining back shiftable sidewise, a pair of hinge clutches securing said back to the bottom, a spring for forcing said back in one direction and a lever for disengaging the members of said clutches and forcing the back in the opposite direction, projecting up at the side of the seat and having a knob or handle arranged above the bottom thereof, substantially as set forth.

10. In a hinge clutch for reclining chairs, the combination with the back and bottom of one member fixed to the bottom of the chair and having the beveled stops 43, 44, 50, a disengaging lever pivoted between the ends of the said stops and being substantially flush with the summits thereof, having the noses 53, 54 adapted to ride over the inclines of said stops, the stop 59 for limiting the downward movement of said lever, the other member of said clutch attached to the back and having lugs for engaging with the stops 43, 44 for locking the back in its upper position, and the lug 48 adapted to strike the lug 50 for limiting the downward movement of the back, substantially as set forth.

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