

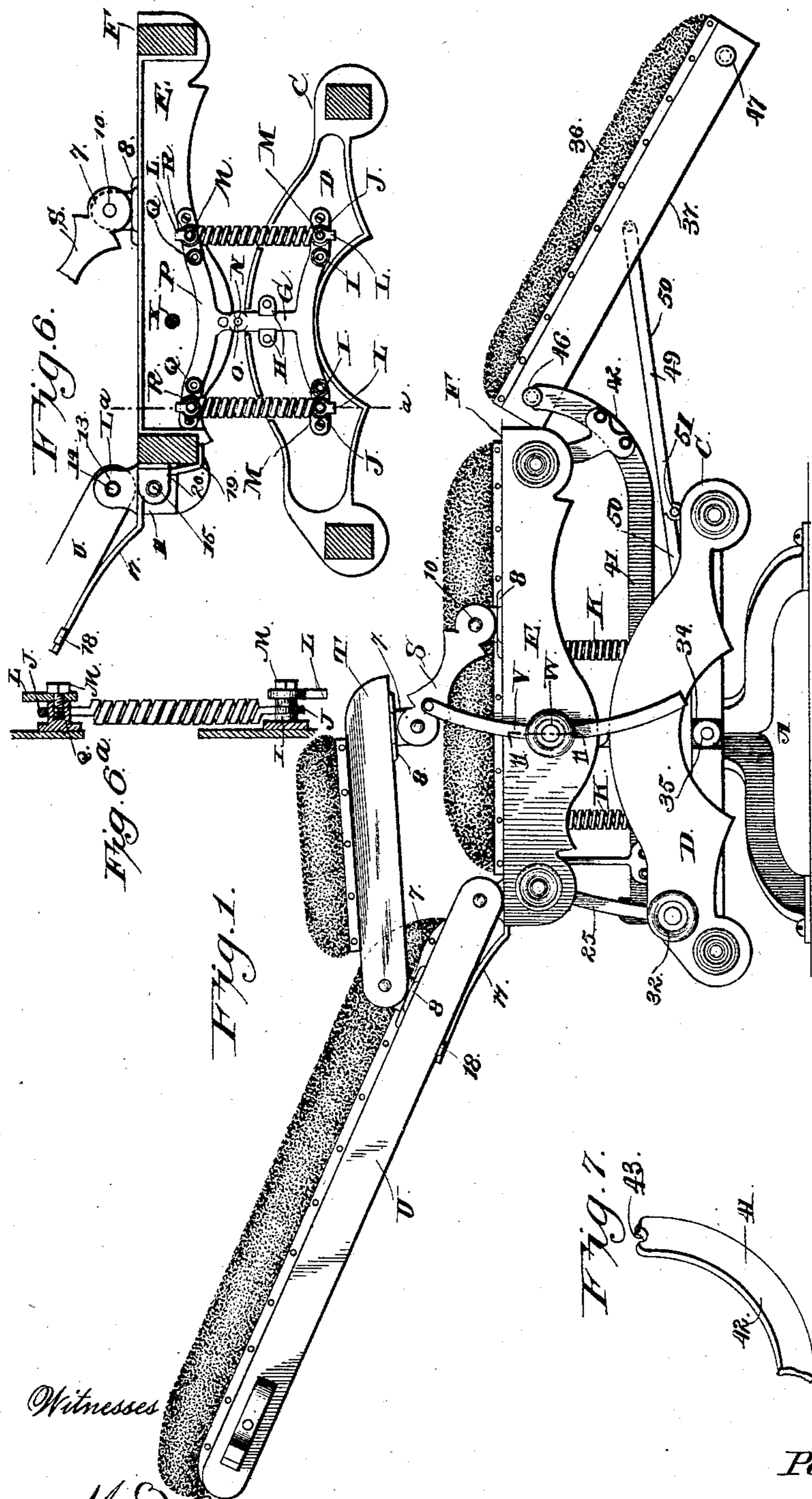
(No Model.)

3 Sheets—Sheet 1.

P. C. LEWIS.
COMBINED ROCKING AND RECLINING CHAIR.

No. 452,713.

Patented May 19, 1891.



Witnesses

M. S. Fowler
E. S. Siggers

Inventor

Pearl C. Lewis

By his Attorneys

C. A. Snow & Co.

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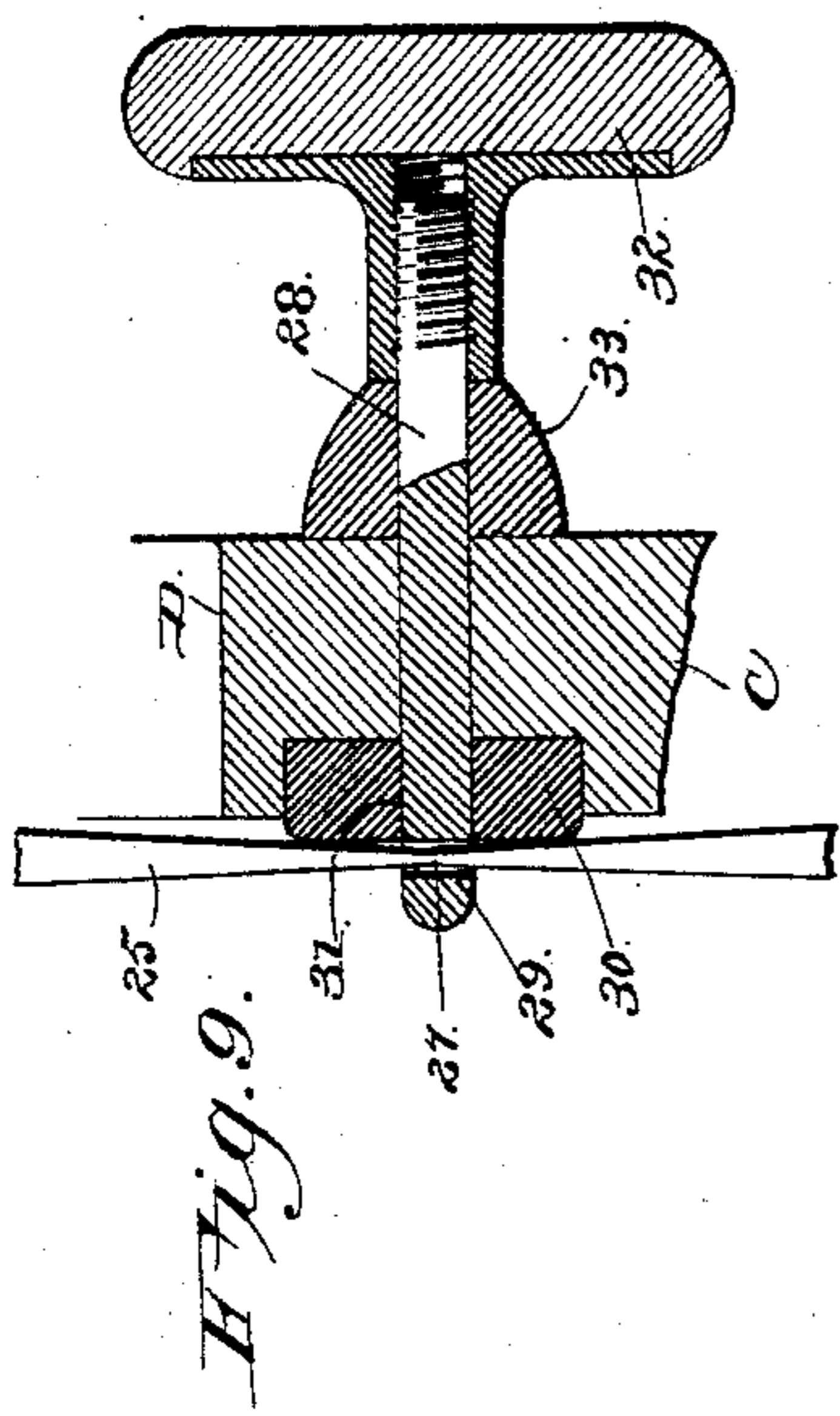


Fig. 2.

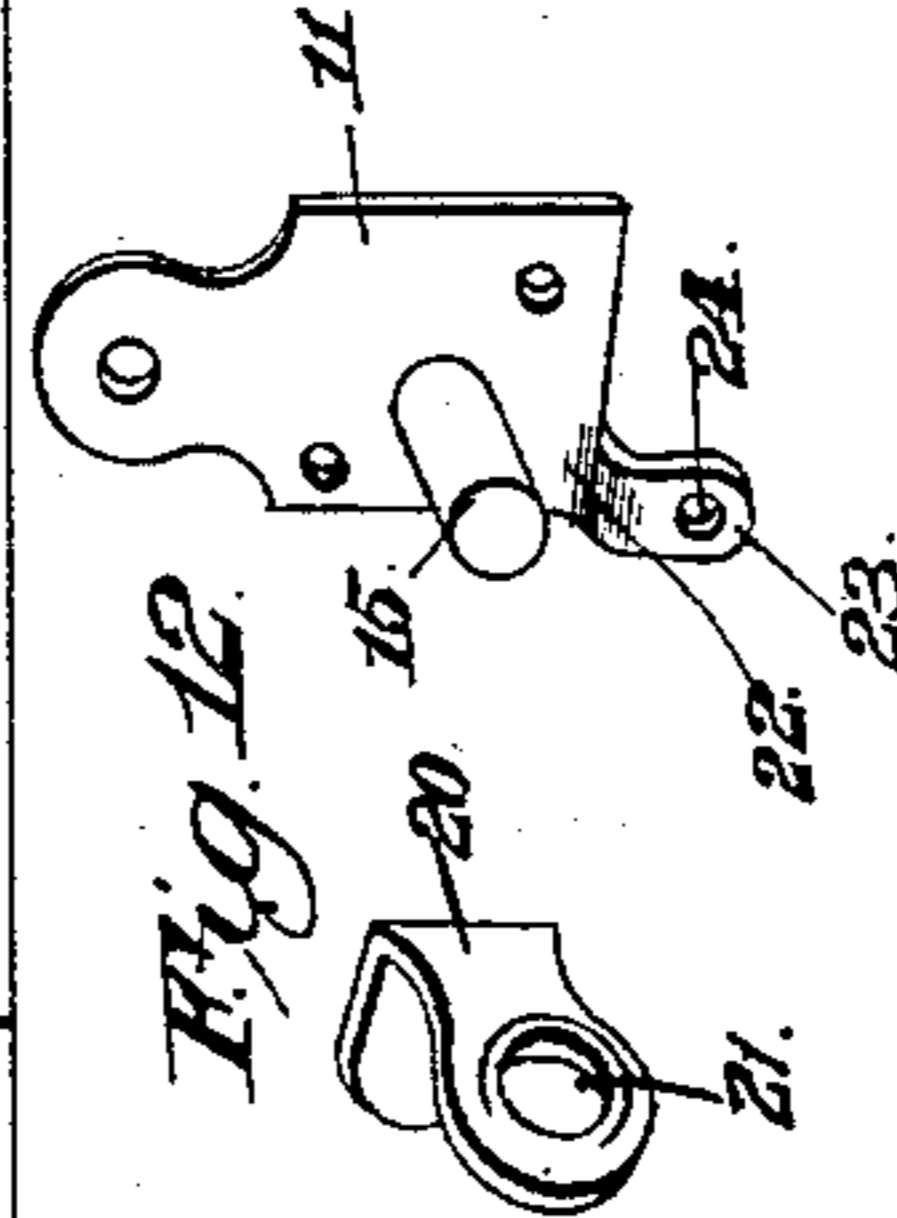
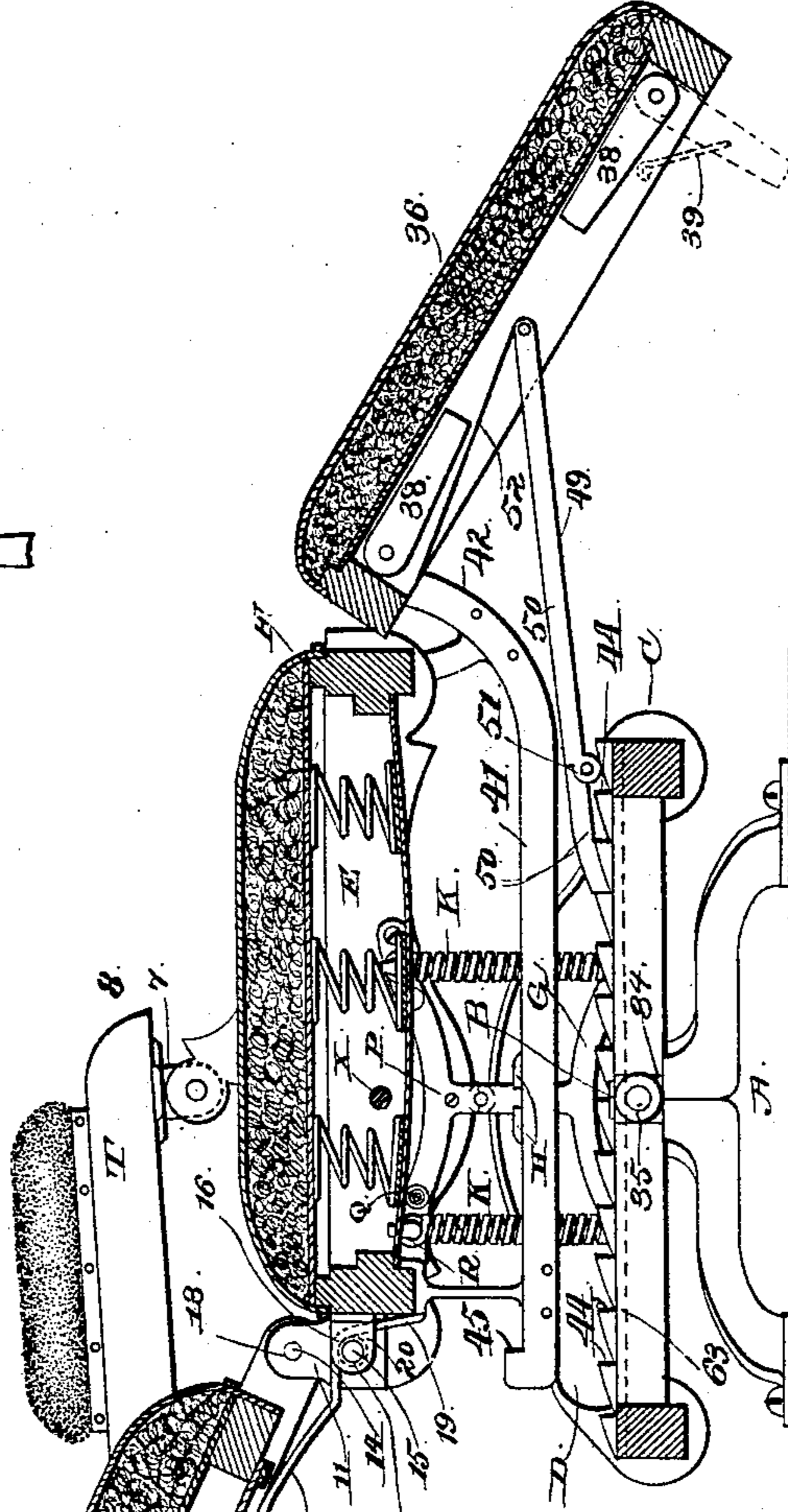
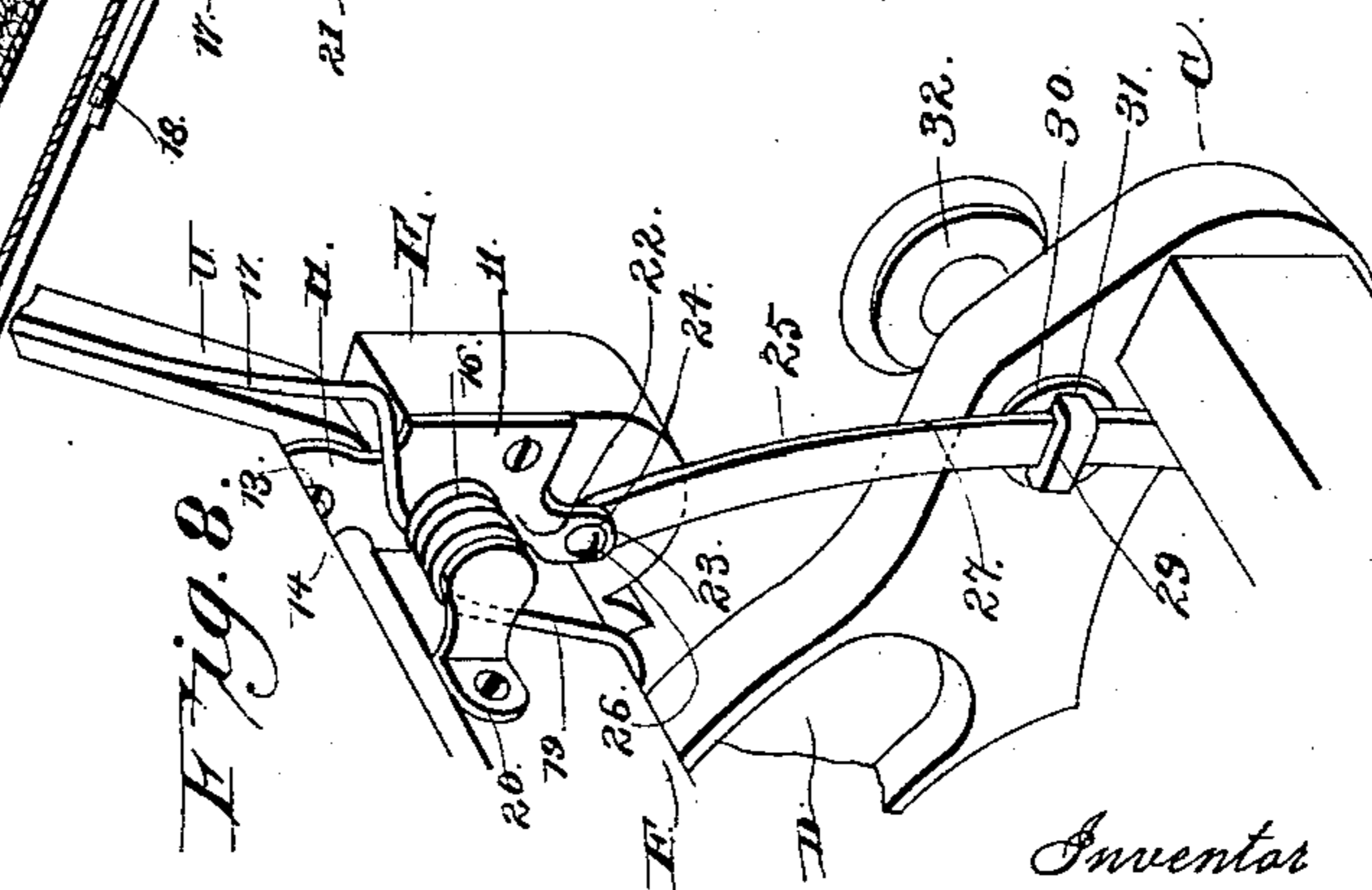


Fig. 8.



Witnesses

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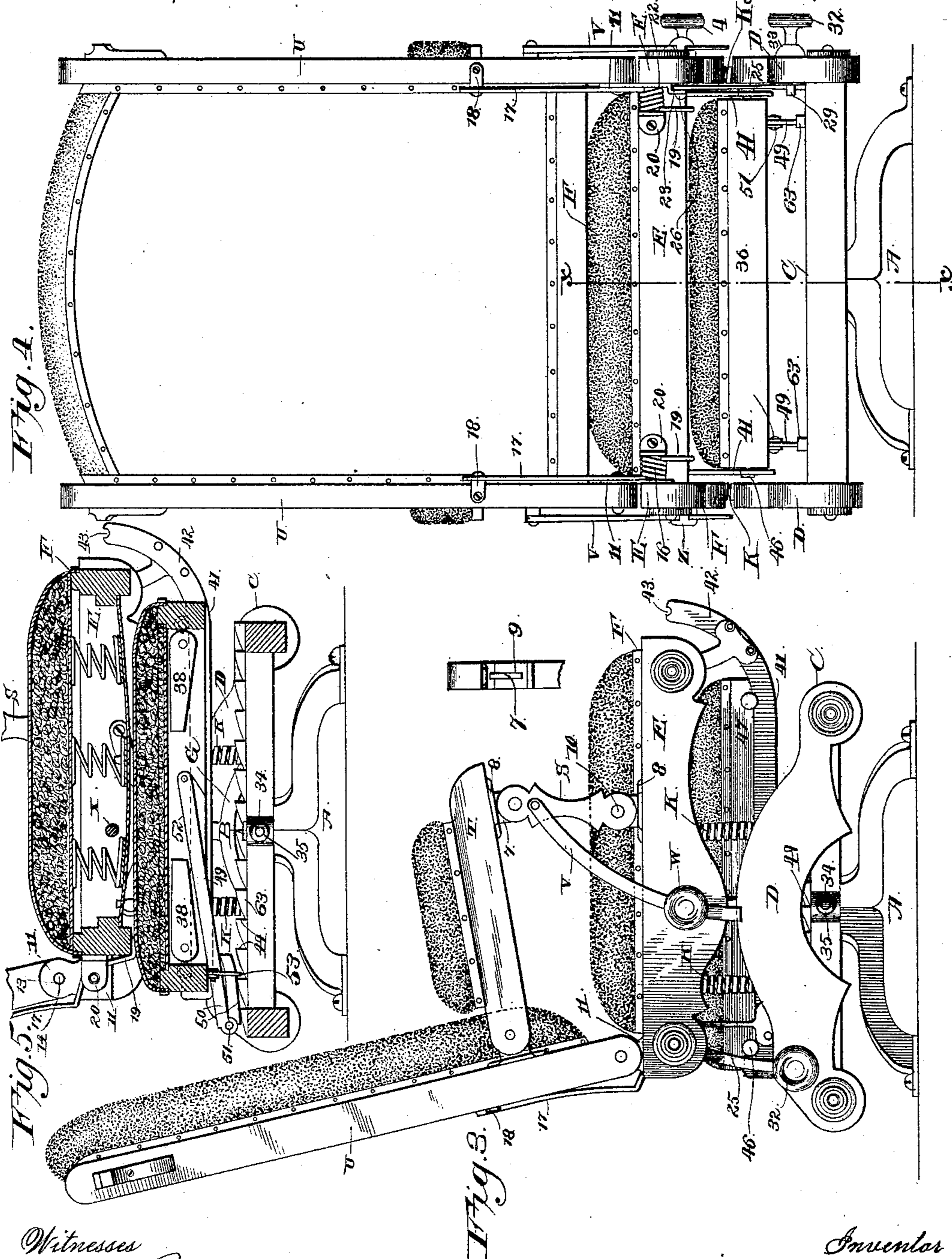
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UNITED STATES PATENT OFFICE.

PEARL CLINTON LEWIS, OF CATSKILL, NEW YORK.

COMBINED ROCKING AND RECLINING CHAIR.

SPECIFICATION forming part of Letters Patent No. 452,713, dated May 19, 1891.

Application filed April 2, 1889. Serial No. 305,711. (No model.)

To all whom it may concern:

Be it known that I, PEARL CLINTON LEWIS, a citizen of the United States, residing at Catskill, in the county of Greene and State of New York, have invented a new and useful Improvement in Combined Rocking and Reclining Chairs, of which the following is a specification.

This invention relates to convertible combined rocking and reclining chairs; and it is an improvement on the convertible chair for which Letters Patent of the United States No. 386,142 were granted to me on the 17th of July, 1888.

The object of my present invention is to produce a chair which shall be well adapted for use as a reclining-chair for railroad-cars, as well as for the general purposes of a reclining-chair.

The invention consists in various improvements in the construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view of my improved reclining-chair extended and ready for use. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a side view showing the back of the chair raised and the leg-rest shoved back under the seat. Fig. 4 is a rear elevation of the same. Fig. 5 is a vertical sectional view taken on the line *xx* of Fig. 4. Fig. 6 is a detail view, on a larger scale, of the pivoting device upon which the seat is mounted, showing, also, the supporting-springs. Fig. 6^a is a sectional detail view taken on the line *aa* in Fig. 6. Fig. 7 is a detail view, on a larger scale, of the front end of the track which serves to support the sliding leg-rest. Fig. 8 is a perspective detail view of the spring-holding device which connects the seat-frame with the back of a chair. Fig. 9 is a vertical sectional view taken through the double-wedge-shaped brace which connects the rocking seat with its base. Fig. 10 is a detail view. Fig. 11 is a detailed vertical sectional view taken on the line 11 11 in Fig. 1 and at right angles to the sectional detail view, Fig. 10. Fig. 12 is a perspective detail view of one of the plates or castings 11 and cap-plates 20.

The same letters and numerals refer to the same parts in all of the figures.

A designates the supporting-frame or leg-frame, which consists of a tripod having a central vertical bearing for the spindle B of the revolving base-frame C. The details of construction of these parts are not of importance, but may be modified to suit the conditions under which my improved chair is to be used. When the chair is to be used for railroad purposes, the leg-frame may be provided with means for securing it to the floor. For household use it may be mounted upon rollers or casters.

The side pieces D D of the revolving base have curved upper sides to correspond with the curved under edges of the side rails E E of the seat-frame F. The seat-frame, as well as the revolving base, is preferably made of cast-iron in order that sufficient strength may be secured without an excessive bulk of material; or, when preferred, cast-iron and wood together may be used in the construction of the said frames. To the inner sides of the side pieces of the revolving base are bolted or otherwise suitably secured the inverted-T-shaped castings G G, which are provided with lugs H to receive the fastening bolts or screws. The horizontal arms of said T-shaped castings are provided near their ends with laterally-extending lugs I I, two or more at each end, adapted to receive the loops J, formed at the ends of the supporting-springs K. These loops are simply adjusted over the proper lugs, and are then retained in position by means of washers L and bolts M entering suitable screw-threaded recesses in the lugs I. The upper ends of the vertical arms of the T-shaped castings G are provided with recesses or bearings N to receive pivots O, which are formed at the lower ends of the vertical arms of T-shaped castings P, which are bolted or otherwise secured to the inner sides of the side rails of the seat-frame. The ends of the horizontal arms of the castings P are provided with laterally-extending lugs Q, corresponding with the lugs I and adapted to receive the loops R at the upper ends of the springs K, which are secured by means of bolts and washers L M, the same as the lower ends of the springs. It will be seen that the

tension of the springs K may be regulated by adjusting them upon different lugs upon their respective castings; also, that the front springs may be so adjusted as to be more or less stiff than the rear springs, as may be desired. It will also be seen that by the herein-described method of mounting the seat-frame pivotally upon its base the curved or bottom ridges of the seat-frame and its base are equidistant from each other at all points to which the seat-frame may be rocked or oscillated and that the much-desired throw of the seat-frame is thereby attained.

To the upper sides of the side rails E of the seat-frame are hinged or pivoted the links S, the upper ends of which are in turn pivoted in the front ends of the arm-rests T. The rear ends of the latter are connected pivotally with the side rails U of the back-frame, and the lower ends of the latter are hinged or pivoted to the rear ends of the side rails of the seat-frame. The connections between these parts is substantially the same as that shown in my patent, No. 386,142, above referred to, and by reason of this construction I am enabled to adjust the back with relation to the seat-frame in the same manner as in the said patent. To retain the back-frame in any desired adjustment with relation to the seat-frame, I also employ devices somewhat similar to those shown in the said patent, the same consisting of braces V, connected pivotally to the links S and extending through clamping devices W, which are attached to the side rails of the seat-frame. The braces V are made segmental or slightly curved, and they are made tapering or wedge-shaped from their pivotal point toward their outer ends, in order that when the pressure of the clamping devices upon the said braces is released the back may be allowed to descend toward a horizontal position evenly and gradually by the weight of the person occupying the chair. The clamping devices comprise a rod extending transversely through the side rails of the seat and composed of two parts or sections X X, connected by a right and left hand threaded sleeve or cup. One of the sections X is provided at its outer end with an eye Y for the passage of the brace, the extreme outer end of said section forming a plate or rosette Z, the inner side of which bears against the outer side of the brace. The eye Y works in a countersunk recess in a plate or washer 2, which is adjusted upon the rod-section X and bears against the outer side of the seat-frame. The other section X is provided at its outer end with a similar eye Y', and it has a screw-threaded extension 3, upon which is adjusted a hand-wheel 4, the inner side of which bears against a washer 5, having a countersunk recess to accommodate the outer half of the eye Y', the inner half of which is accommodated in the recess of a similar washer 6, which is interposed between the brace and the outside of the seat-frame. It will be seen that by this construction, when

the hand-wheel 4 is tightened, both of the braces V are simultaneously clamped between the respective plates or washers. When, on the other hand, the hand-wheel is loosened by the person occupying the chair, the weight of the occupant upon the back of the chair will gradually force the wedge-shaped braces in a downward direction, thus lowering the back gradually and evenly and without the sudden jerky motion which is experienced when braces of the ordinary construction are used. As will be seen, the herein-described construction of this mechanism, while somewhat similar to that shown in my former patent, is simplified, in that I omit the operating hand-wheel at one of the sides of the seat. The construction, while much more effective, is therefore less complicated, and hence preferable. By the construction shown in my former patent, if the operator should forget or neglect to operate both clamping-nuts and hand-wheels simultaneously, or if in attempting to let down the back while his weight was upon it he should unscrew one of the clamping-wheels faster than the other, the curved brace would slide down faster on one side than on the other, and as a consequence the back of the chair would soon become racked and loose and the glued joints would eventually break. Again, in the cheaper grade of chairs, where the curved braces are made of malleable iron galvanized, there would occasionally be small bumps or enlargements, and it would be necessary to unscrew the clamping-wheel on that side until such enlargements would pass through the slot in the clamping-rod, and as soon as this occurred the brace on that side of the chair would run through the clamping device until the gradual increase of the wedge should take up the looseness. This also would rack the back to the detriment of the chair and the discomfort of its occupant. By the use of my improved clamping device such accidents cannot occur. The turning of the single hand-wheel operates both sides simultaneously and equally, and as a consequence both sides of the back are let down equally and alike under all circumstances. There being only one clamping-wheel, it is of course impossible that one side should be loose and not the other, as the pressure is the same on both sides at all times. The importance of the wedge-shaped braces in this connection is also great. If braces of equal thickness throughout were used, great pressure of the clamping devices would be required to sustain the weight of a heavy person reclining upon the back of the chair, while by the use of the wedge-shaped braces the braces themselves jam against the clamping devices, and, no matter what the weight upon the back may be, it may be let down easily and gradually with the utmost facility by operating the single clamping-wheel.

In my former patent the side rails of the back-frame are pivoted to the outer sides of

the seat-rails, as well as the links that support the arm-rests, while the latter are pivoted to the outer sides of the side rails of the back-frame. By my present invention I prefer to pivot the connecting-links to the upper sides of the side rails of the seat-frame and to the under sides of the arm-rests, the rear ends of the latter being pivoted to the front sides of the side rails of the back-frame and the lower ends of the latter being turned on top of the seat-rails. By this construction space is economized and the parts are caused to fold together more compactly than would otherwise be the case, besides making iron instead of wooden bearings. In order to effect this construction, I employ the connecting-castings 7, secured, respectively, to the seat-rails, the back-rails, and the under sides of the arm-rests, and having webs or flanges 8, that are fitted in cuts or kerfs 9 in the adjacent ends of the links S and in the rear ends of the arm-rests, said webs or flanges being provided with perforations 10 for the passage of the pivoting-bolts. To connect the lower ends of the side rails of the back-frame to the rear ends of the seat-rails, I employ the plates or castings 11, which are secured to the inner sides of the seat-rails by means of screws or bolts and are provided with upwardly-extending lugs 12, having perforations 13 to receive the bolts 14, upon which the back-frame is pivoted. The plates 11 are provided with lateral inwardly-extending cylindrical lugs 15, upon which are coiled the springs 16, having upwardly-extending arms 17, which bear against the back-frame of the chair, to which bearing-plates 18 are attached to receive the pressure of said spring-arms and prevent the latter from scratching or injuring the material of the chair. The opposite ends of the spring-coils 16 are provided with angular arms 19, that catch under the rear rail of the seat-frame. It will be seen that by this arrangement the coiled springs serve to force the back-frame of the chair in an upward and forward direction when the pressure upon adjusting-braces V is released. The springs 16 are retained in position upon the cylindrical lugs 15 by means of angular or L-shaped cap-plates 20, which are secured by means of screws to the rear rail of the seat-frame. The inner sides of the said cap-plates are provided with recesses 21, fitting over the outer ends of the lugs 15, so as to retain the parts securely with relation to each other and to insure neatness of finish and convenience in putting the parts together.

One of the plates 11 is provided at its lower end with a flange 22, having a downwardly-extending lip or lug 23, provided with a perforation 24. Between the said lip and the side rails of the seat is inserted the upper end of the brace 25, by means of which the rocking seat is connected with the revolving base. The upper end of the said brace is pivoted upon a bolt or screw 26, extending through the perforation 24 and passing

through the upper end of said brace and to the side rail of the seat. The brace 25 is made in the shape of a double wedge—that is, its sides are made to converge from its ends toward its central or middle portion, or to the point indicated in the drawings by 27—which, when the seat is in its normal or horizontal position, registers with the clamping device, by means of which the said brace is grasped for the purpose of retaining the seat when adjusted to any desired position. The said clamping device consists of a bolt 28, extending through one of the sides D of the revolving-base frame, said bolt being provided at its inner end with an eye 29 to receive the brace 25, between which and the inner side of the base-rail is interposed a plate or washer 30, having a countersunk recess 31 to accommodate the eye 29. The outer screw-threaded end of the bolt 28 has a hand-wheel 32, the inner side of which bears against a washer 33, interposed between the said hand-wheel and the side wheel of the base. It will be seen that when the said hand-wheel is tightened the bolt is drawn up, so as to clamp the brace 25 against the washer-plate 30, thus retaining the said brace and the seat in any position to which the latter may be oscillated.

It will be observed, that owing to the double-wedge shape of the brace 25, the seat when adjusted to its normal position will be held with absolute security, and that there will be no danger of the brace slipping or tilting by reason of excessive weight being applied to either the front or rear end of the seat. At the same time it will be noticed that when the latter is tilted rearwardly the pressure is mainly upon its rear end. When in this position there is no danger of the brace coming loose, because the pressure tends to wedge it more firmly in the clamping device. The same is the case when for any reason the seat may be tilted forwardly and secured in this position.

The sleeve or bearing 34, with which the stationary base is provided to accommodate the spindle B of the revolving base, is provided with a set-screw 35, adapted to bear against said spindle, for the purpose of securing the upper revolving part of the chair in any position to which it may be adjusted.

36 designates the leg-rest which is used in connection with my improved reclining-chair. Said leg-rest is preferably constructed substantially in the same manner as shown in my patent to which reference has herein been made—that is, it consists of a rectangular frame 37, which is suitably upholstered, and to the inner sides of the end rails of which are pivoted the folding legs 38, which, when the device is not in use as a foot-rest, may be extended and retained in their extended position by means of suitable catches 39, thus forming a taboret or ottoman, which may be used independently of the chair. I would state, however, that when my improved reclining-chair is to be used for railroad pur-

poses it may be found preferable to substitute for the upholstered leg-rest having the folding legs a plain cane-seat frame, which, in addition to being lighter and cooler, has the advantage of occupying less space.

To the under sides of the side rails of the seat of the chair are attached a pair of curved metallic rails 41, which extend rearwardly under the seat-frame, and the front ends of which extend slightly in front of the latter, so as to form the brackets 42, the upper outer ends of which are provided with notches or recesses 43. Supporting-rails 63 are secured to the side rails of the revolving base and are provided throughout their length with a series of notches or ratchets 44, and at the extreme rear ends of rails 41 stops 45 are provided. The said track-rails may be attached to the seat-frame in any suitable manner, or they may, when the seat-frame is constructed of cast-iron, be cast or formed integrally therewith. The distance of the said track-rails below the upper side of the seat-frame should be merely sufficient to allow for the thickness of the leg-rest, which is to be supported thereon when not in use.

The side rails of the leg-rest frame are provided near their rear ends with laterally-extending cylindrical studs 46, which serve to support and guide it upon the track-rails 41. The side rails of the leg-rest are also provided near their front ends with similar studs 47 to engage the upper sides of rails 41 when the leg-rest is not in use.

To the side rails of the leg-rest frame are pivoted the folding braces 49, each of which consists of two pieces or sections 50, connected by a knee-joint 51, which, when the said parts or sections are extended so as to be in alignment with each other, shall hold them rigidly in this position. When the leg-rest is constructed with the folding legs, so as to be convertible into an ottoman, the side rails of said frame may be provided with recesses 52 to accommodate the said braces, which may be folded therein and secured by suitable catches or retaining devices 53.

The operation of my improved leg-rest will be readily understood from the foregoing description, taken in connection with the drawings. When the leg-rest is not required, it is shoved back under the seat to the position shown in Figs. 3 and 5, when it is entirely supported upon the track-rails, while the brackets or braces 49 are folded under the side rails of the leg-rest frame. When it is desired to use the leg-rest, the front rail thereof is grasped with the hand, and it is pulled in a forward direction until the supporting-studs 46 of the rear end of the leg-rest frame travel up the curved or inclined front ends of the track-rails and drop into the notches 43 at the front ends of the same. By the same operation the folding braces will be extended or straightened to the position shown in Figs. 1 and 2, when their rear ends will engage the notches or ratchets 44, in which they may be

adjusted so as to secure the leg-rest at any desired degree of inclination with reference to the seat-frame. It will be seen that when the latter rocks or oscillates upon its pivots the leg-rest will receive the corresponding motion which may be easily and without exertion communicated by the person occupying the chair in a reclining posture. When it is desired to return the back to an upright position, this is effected automatically by the action of the springs 16 when the clamping devices of the braces are released and the weight of the occupant taken off the back of the chair. The devices for connecting the back pivotally to the seat of the chair and for retaining the return-springs in position are exceedingly simple, convenient, and durable, and when provided with the lugs 23, as herein described, they serve the additional purpose of attaching to the seat the double-wedge-shaped braces by which the seat may be temporarily connected with its revolving base, so as to prevent it from rocking. When these braces are attached by means of pivoting pins or bolts directly to the seat-rails, the racking strain to which they are subjected will soon weaken and loosen the pivoting-bolts and render the devices ineffective and inoperative. By my improvement the projecting lugs of the metallic plate form rigid bearings for the pivoting-bolts, and loosening or displacement of the braces is positively prevented.

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

1. The combination of the leg-frame, the revolving base, the inverted-T-shaped castings secured to the inner sides of the side rails of the latter and having notches at the upper ends of their vertical arms, a rocking seat, the T-shaped castings secured to the inner sides of the side rails of the latter and having pintles at their lower ends mounted in the notches of the inverted-T-shaped castings, and coiled springs connecting the horizontal arms of the T-shaped castings on both sides of the vertical arms of the latter, substantially as and for the purpose set forth.

2. The combination, with the revolving base and the rocking or oscillating seat, of the T-shaped castings secured to the side rails of the said base and seat, with the ends of their vertical arms adjoining each other and provided, respectively, with notches or recesses and with pintles mounted therein, the horizontal arms of said T-shaped castings being provided with laterally-extending lugs, and the coiled connecting-springs provided at their ends with loops mounted upon said lugs, substantially as and for the purpose set forth.

3. The combination, with the revolving base and the rocking seat, of the herein-described T-shaped castings provided, respectively, with notches or recesses and with pintles mounted therein and forming the pivots upon which the said seat is mounted, the hori-

zontal arms of said castings being provided with laterally-extending lugs having screw-threaded recesses, and coiled springs having looped ends adjustable upon the said lugs and the securing bolts and washers, substantially as and for the purpose set forth.

4. The combination of the back-frame provided with side rails, the rocking seat, the plates or castings secured at the rear ends to the inner sides of the side rails of the same and having upwardly-extending lugs to which the side rails of the back-frame are pivotally connected, the laterally-extending studs, and the coiled springs mounted on said studs and having arms that bear against the seat-frame and the pivoted back-frame, forcing the latter in an upward and forward direction, substantially as set forth.

5. The combination of the rocking seat, the plates secured to the side rails of the same and having laterally-extending studs, the back-frame connected pivotally with the upper ends of the said plates, coiled springs mounted upon the studs of the latter, having arms that bear, respectively, against the seat-frame and the back-frame, and the caps attached to the seat-frame, serving to retain the said spring-coils in position, substantially as set forth.

6. The combination of the rocking seat, the plates secured to the side of the same and having laterally-extending studs, the back-frame, the side rails of which are pivoted to the upper ends of said plates, coiled springs mounted upon the studs of the latter and having upwardly and downwardly extending arms, which latter bear against the rear side of the seat-frame, and bearing-plates secured to the side rails of the back-frame to receive the impact of the upwardly-extending arms of the coiled springs and having grooves forming seats for the said spring-arms, substantially as set forth.

7. The herein-described connecting plates or castings attached to the inner sides of the side rails of the seat near their rear ends, and having upwardly-extending plates to which the side rails of the back-frame may be pivotally connected, laterally-extending studs upon which spring-coils may be mounted, and laterally-extending flanges having downwardly-extending lugs to which the seat-supporting braces may be pivotally connected, substantially as set forth.

8. In a combined rocking and reclining chair, the combination, with the rocking seat, of a double-wedge-shaped brace thick at the ends and tapering toward the center, pivotally connected to said seat at a distance from its pivoting-point or fulcrum, and a clamping device attached to the base and adapted to register with the narrowest point of the double-wedge-shaped brace when the seat is in its normal or approximately horizontal position, substantially as and for the purpose set forth.

9. The combination of the base, the rock-

ing seat, one or more double-wedge-shaped braces tapering from their ends toward their centers, said braces being pivotally attached to the rocking seat, and clamping devices attached to the base and adapted to clamp and hold said pivoted braces securely at any adjustment, substantially as set forth.

10. The combination of the rocking seat, the pivoted back-frame, the arm-rest pivoted to the front sides of the side rails of the latter, and the links connecting the front ends of said arm-rests with the side rails of the seat, the segmental wedge-shaped braces pivoted to the connecting-links, tapering from their pivotal points to their outer ends, and the clamping devices consisting of a rod extending transversely through the side rails of the seat and composed of two sections connected by the right and left hand threaded sleeve, one of said sections being provided at its outer end with an eye and a rosette-plate and the other with an eye and an extended screw-threaded portion, washers adjusted upon the outer ends of said rod-sections against the outer sides of the side rails of the seat and having countersunk outer sides, and a washer having countersunk inner sides, and a screw-threaded hand-wheel or nut adjusted upon the outer end of the rod-section having the projecting screw-threaded end, the whole arranged and operating substantially as and for the purpose set forth.

11. The combination of the rocking seat, the pivoted back-frame, the arm-rests pivoted to the latter, the links connecting the arm-rests with the seat-frame, the wedge-shaped braces pivoted to said links, a rod extending transversely through the side rails of the seat and having eyes for the passage of said braces, and a screw-threaded extension at one end, and a washer having countersunk inner sides, and a nut or hand-wheel mounted thereon, whereby by tightening said nut or hand-wheel both the wedge-shaped braces shall be simultaneously clamped, substantially as set forth.

12. The combination, with the seat-frame, of the track-rails secured to the under side of the same and having upwardly-curved front ends provided with notches or recesses at their extreme upper or outer ends, and the leg-rest frame having laterally-extending studs adapted to rest in the said recesses and to slide upon the said track-rails, substantially as herein described.

13. The combination of the revolving base, the rocking-seat frame, the track-rails secured to the under side of the same and having notches or recesses at their front ends, the leg-rest frame having laterally-extending studs by means of which it may be supported detachably upon the said track-rails, the folding braces connected pivotally to the sides of the leg-rest frame, and the ratchet-bars attached to the base to support the lower ends of the said braces when the latter are extended, substantially as and for the purpose set forth.

14. The combination, with the rocking seat
mounted upon the revolving base, of the track-
rails secured to the seat-frame, the leg-rest
mounted to slide upon said track-rails, and the
5 supporting-braces connected pivotally to the
sides of the leg-rest frame and adapted to
fold under the latter when it is slid back un-
der the seat, each of said supporting-braces
being composed of two parts or sections

hinged together, substantially as and for the 10
purpose set forth.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature
in presence of two witnesses.

PEARL CLINTON LEWIS.

Witnesses:

W. IRVING JENNINGS,
EMORY A. CHASE.