

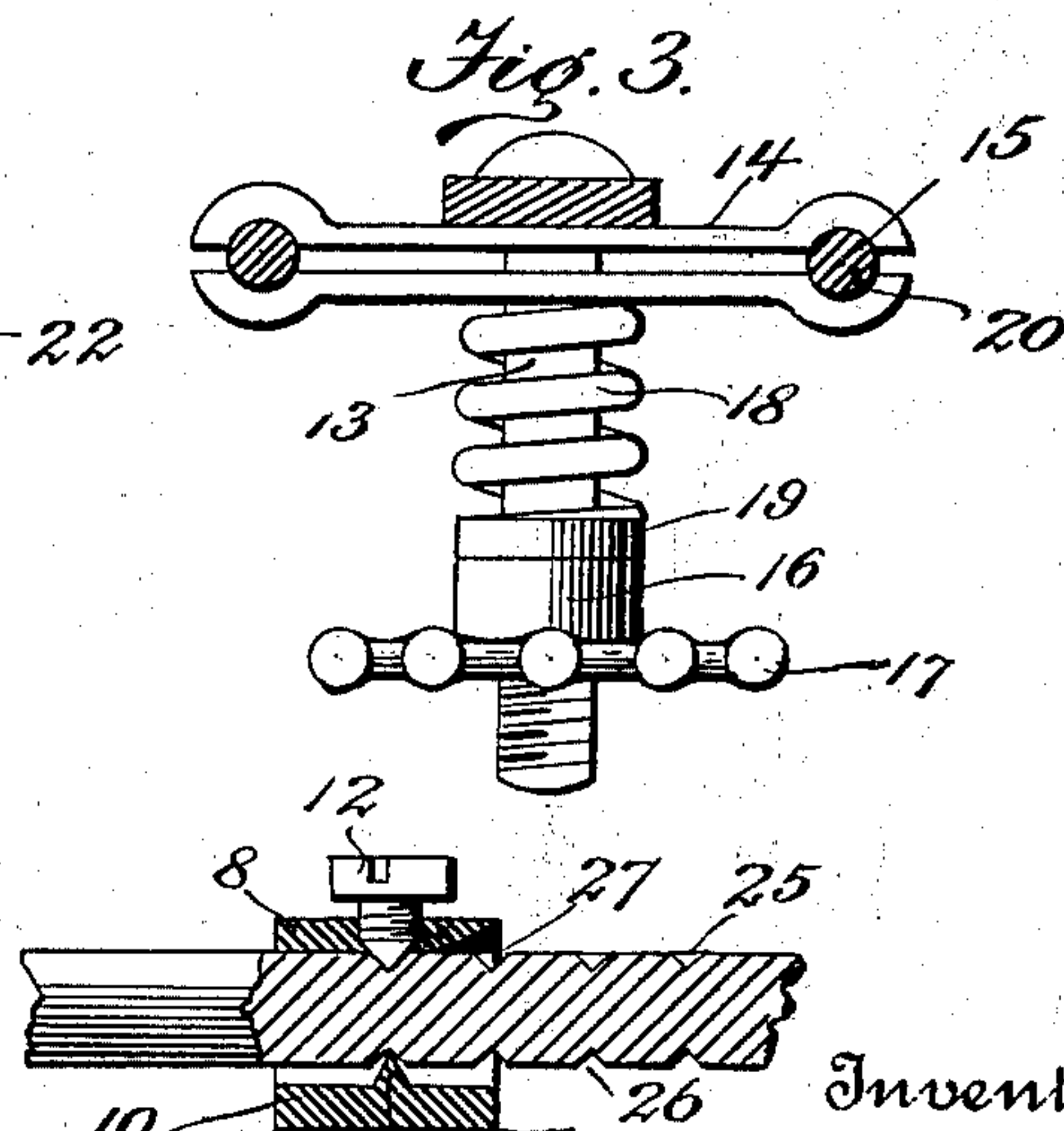
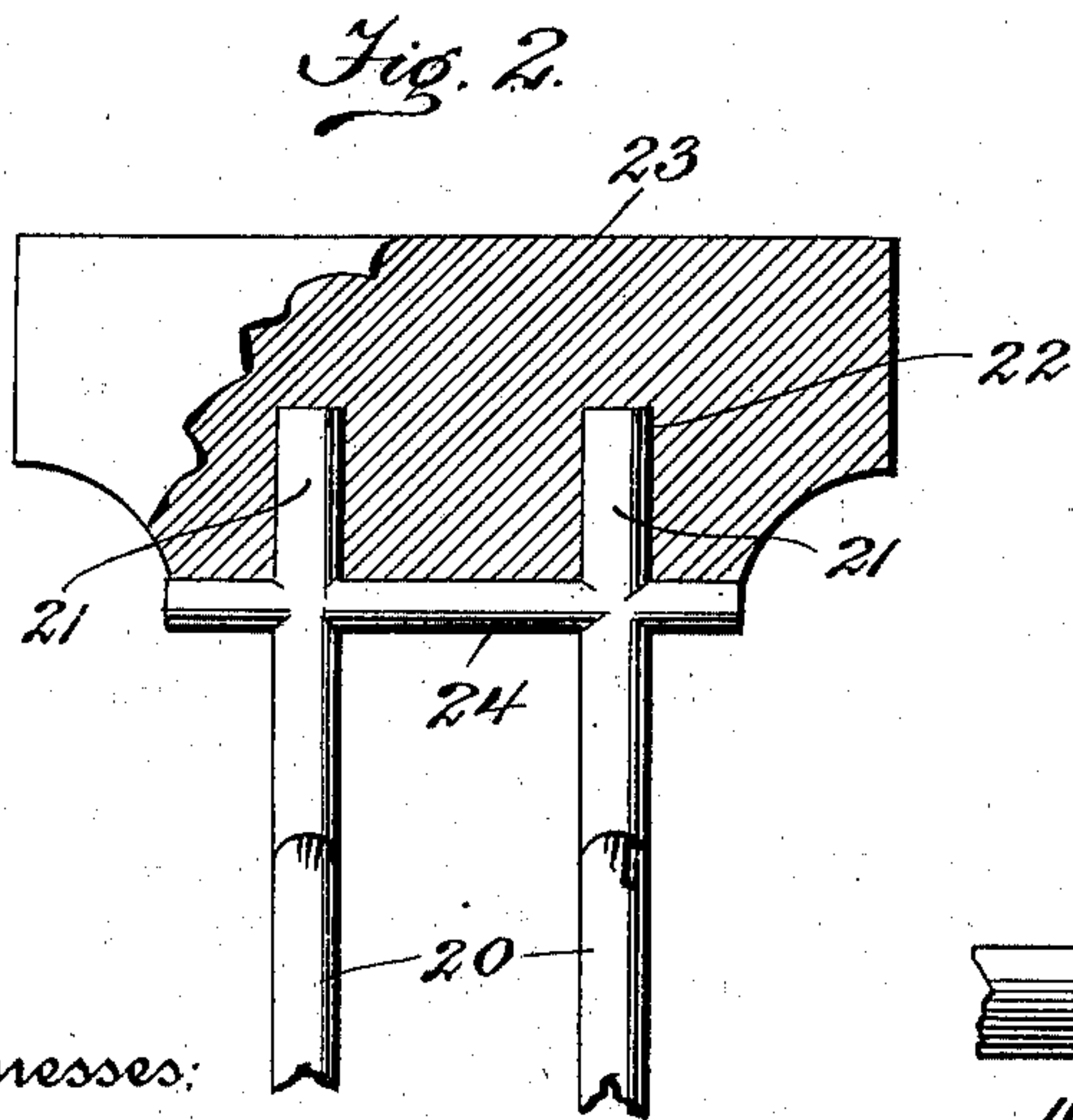
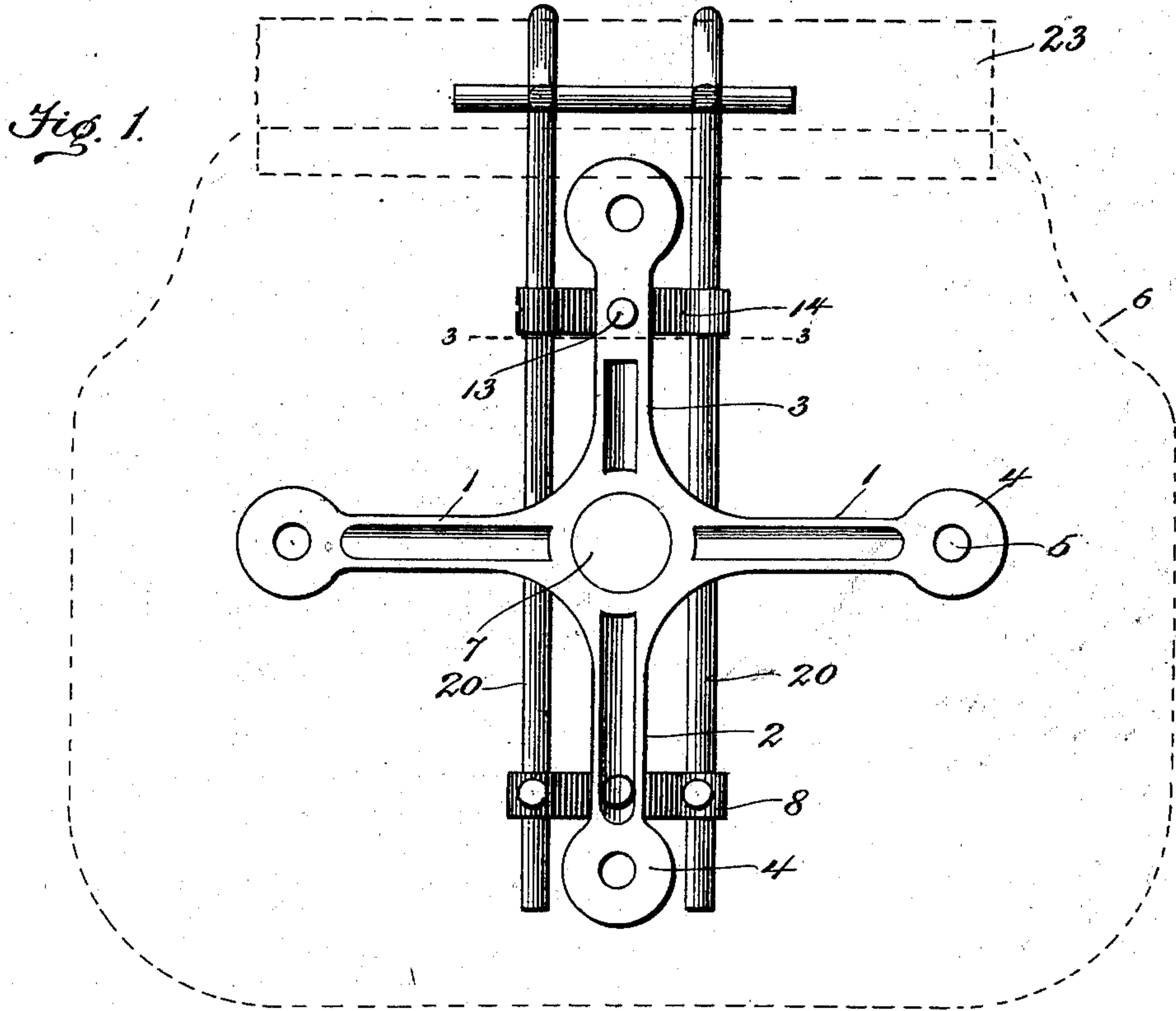
No. 752,751.

PATENTED FEB. 23, 1904.

H. W. BOLENS.
CHAIR.

APPLICATION FILED AUG. 25, 1903.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARRY W. BOLENS, OF PORT WASHINGTON, WISCONSIN.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 752,751, dated February 23, 1904.

Application filed August 25, 1903. Serial No. 170,701. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. BOLENS, a citizen of the United States, residing at Port Washington, in the county of Ozaukee and State of Wisconsin, have invented new and useful Improvements in Chairs, of which the following is a specification.

This invention relates to improvements in chair-irons employed in that class of chairs involving flexible or swinging backs and commonly known as "type-writers' chairs."

The objects of the invention are to produce a cheap, simple, and strong chair-iron designed to be employed between the base and chair-bottom, whereby the latter is swiveled upon the former and which will permit of a limited movement upon the part of the back, so as to fit the same to the various operators that may occupy the chair, and also a limited adjustment vertically of the back itself whereby the back, which is usually padded, may be caused to support the back of the operator at a desired point.

Other objects and advantages of the invention will readily appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan view of a chair-iron embodying my invention, the seat and back being shown by dotted lines. Fig. 2 is a rear elevation of the back, a portion of which is shown in section. Fig. 3 is a transverse vertical sectional view on the line 3 3 of Fig. 1, and Fig. 4 is a sectional view and partial side elevation through one of the back-rods and the front clamp.

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

In practicing my invention it will be understood that I may employ any of the various constructions of chair-spiders desired and also that the same may be cast or formed of sheet metal, as preferred. In the present instance, however, I have shown the same as the usual four-arm cast-iron spider, 1 1 designating the transverse arms, and 2 and 3 designating, respectively, the front and rear arms. Each arm terminates in a flattened head 4 and is provided with a screw-hole 5, whereby it is

adapted to be applied to the under side of the chair-seat 6. (Shown by dotted lines.)

7 designates the usual swivel or screw, which may be secured to the spider in any desired manner.

Projecting from opposite sides of the front spider-arm 2 and cast or otherwise connected therewith is the upper half 8 of a forward clamp, (see Figs. 1 and 4,) the opposite terminals of said clamp being concave or half-round on their under sides. A bolt-hole may be formed in the spider-arm 2 coincident with the upper half 8 of the clamp, and through said bolt-hole may be passed a bolt 9, the same holding in position the lower half 10 of said clamp, which, coincident with the upper half 8, may have its terminals on its upper side made concave or half-round. In each of the concave half-sockets of the lower half 10 of the clamp a knife-edge 11 may be formed, and in each of the half-sockets of the upper half 8 of said clamp a set-screw 12 may be threaded, the same having a lower pointed or centering end.

Secured by a bolt 13 or otherwise to the rear spider-arm 3 and projecting at each side of the same is a pair of transverse clamping members 14, the same having at their ends half-round bearings 15. (See Fig. 3.) The bolt 13 depends below the clamp and is threaded to receive a nut 16, which may have a hand-wheel 17. An expansion-spring 18 is coiled upon the bolt and interposed between the lower half of said clamp 14 and a loose washer 19 located above the nut.

20 designates a pair of heavy rods, which are preferably non-resilient, though they may be formed of spring metal, if desired. These rods are located between the clamping members 14 and 8 and 10, extend rearwardly beyond the seat 6, are bent upwardly and over upon themselves, and preferably terminate in vertical ends 21, which take into sockets 22, formed in the back 23 of the seat, though said rods may be fastened to said back in any preferred manner. A cross pin or bar 24 may connect the rods near their upper ends, said cross-pin being let into the under side of the back, whereby said rods are maintained

in their relative position and any lateral movement of the back prevented. Near their forward ends the rods on their upper sides are provided with shallow cavities 25, (see Fig. 4,) which are designed to receive the lower pointed end of a set-screw 12. The under sides of the rods are also provided with V-shaped recesses 26 to receive the knife-edge 11 of the lower half 10 of the clamp. The front edges of the upper halves 8 of said clamps may be cut away, as at 27, to give a slight vertical play to the front ends of the rods 20 as said rods are raised or depressed.

The operation of the chair will be obvious from the foregoing description, but may be briefly stated as follows: In order to arrange for an adjustment of the back 23 in a horizontal manner with relation to the chair-seat, I provide adjusting mechanism of some preferred style and in the front clamp, such adjustment being as I have described or otherwise. In the present instance by loosening the screws 12 the rods may be slid backward or forward and in such movements carry the back of the chair. For all vertical adjustments of the back I prefer to employ the mechanism illustrated in detail in Fig. 3, where it will be obvious that by operating the hand-wheel 17 the nut 16 will be fed upward or downward upon the lower threaded end of the bolt 13, and thus cause the spring 18 to exert more or less tension upon the lower half of the clamp, and consequently upon the rods 20. It will be obvious that if the weight exerted by the occupant against the back 23 exceeds the tension of the spring 18 the said rods may have a downward movement from their fulcrum-points, which will be the knife-edges 11, and in this manner the back is caused to yield to the pressure of the back of the occupant of the chair. Of course, as will be obvious, the greater the pressure on the spring the more pressure against the back will be required to cause this yielding movement.

Various changes may be made as regards the details of the invention which are not necessary to mention and illustrate in this application, and I would therefore have it understood that the means herein shown are merely to illustrate what I consider a preferred form and that my invention is not to be understood as merely comprehending the specific details shown and described.

Having described my invention, what I claim is—

1. In a chair, the combination with a spider

and its swivel, of supports arranged at opposite sides of the swivel and connected to the spider, a pair of rods located in said supports and extending upwardly and above the chair-seat, and a back secured to the upper ends of said rods.

2. In a chair, the combination with a spider, a pair of rods located under the seat, clamps carried by the spider and arranged to support said rods, and set-screws passing through the clamps and impinging on said rods.

3. In a chair, the combination with a chair, of rods arranged under the seat, a pair of clamping members concave to fit said rods, set-screws passing through one of said clamping members and impinging on the rods, a knife-edge bearing formed in the companion member opposite said set-screws.

4. In a chair, the combination with a spider, of the rods 20 having the countersinks 25 in one of their sides and the V-shaped notches 26 in their opposite sides, set-screws 12 passing through one of the members of the clamp and adapted to take into said countersinks, and knife-edges 11 formed in the other clamping member and adapted to take into said notches.

5. In a chair, the combination of a pair of fixed bearings located under the seat near the front thereof, back-supporting rods mounted to vibrate therein, rear bearings for said rods, and means for yieldingly supporting the rear bearings.

6. In a chair, the combination of a pair of fixed bearings located under the seat near the front thereof, back-supporting rods mounted to vibrate therein, rear bearings for the rods, and means for yieldingly and adjustably supporting the same.

7. In a chair, the combination of a pair of fixed bearings located under the seat near the front thereof, back-supporting rods mounted to vibrate therein, and means at the rear for limiting the downward movements of the rods.

8. In a chair, the combination with the seat, a chair-spider, bolts depending through the front and rear spider-arms, clamps carried by said bolts, a spring arranged on the rear bolt and an adjustable nut below the spring, and back-supporting rods arranged in said clamps.

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

HARRY W. BOLENS.

Witnesses:

EMORY H. BOGLEY,
W. S. DUVALL.