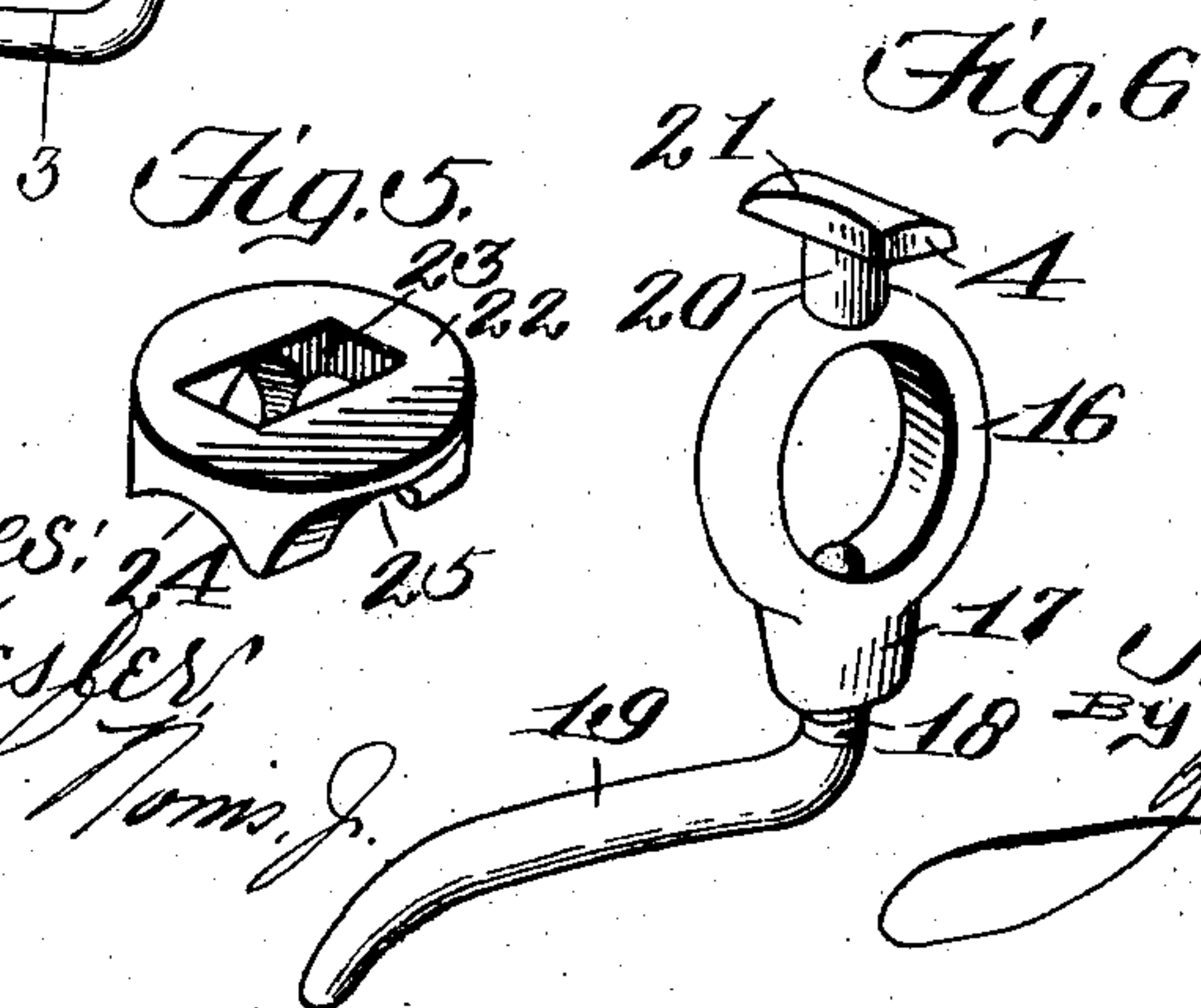
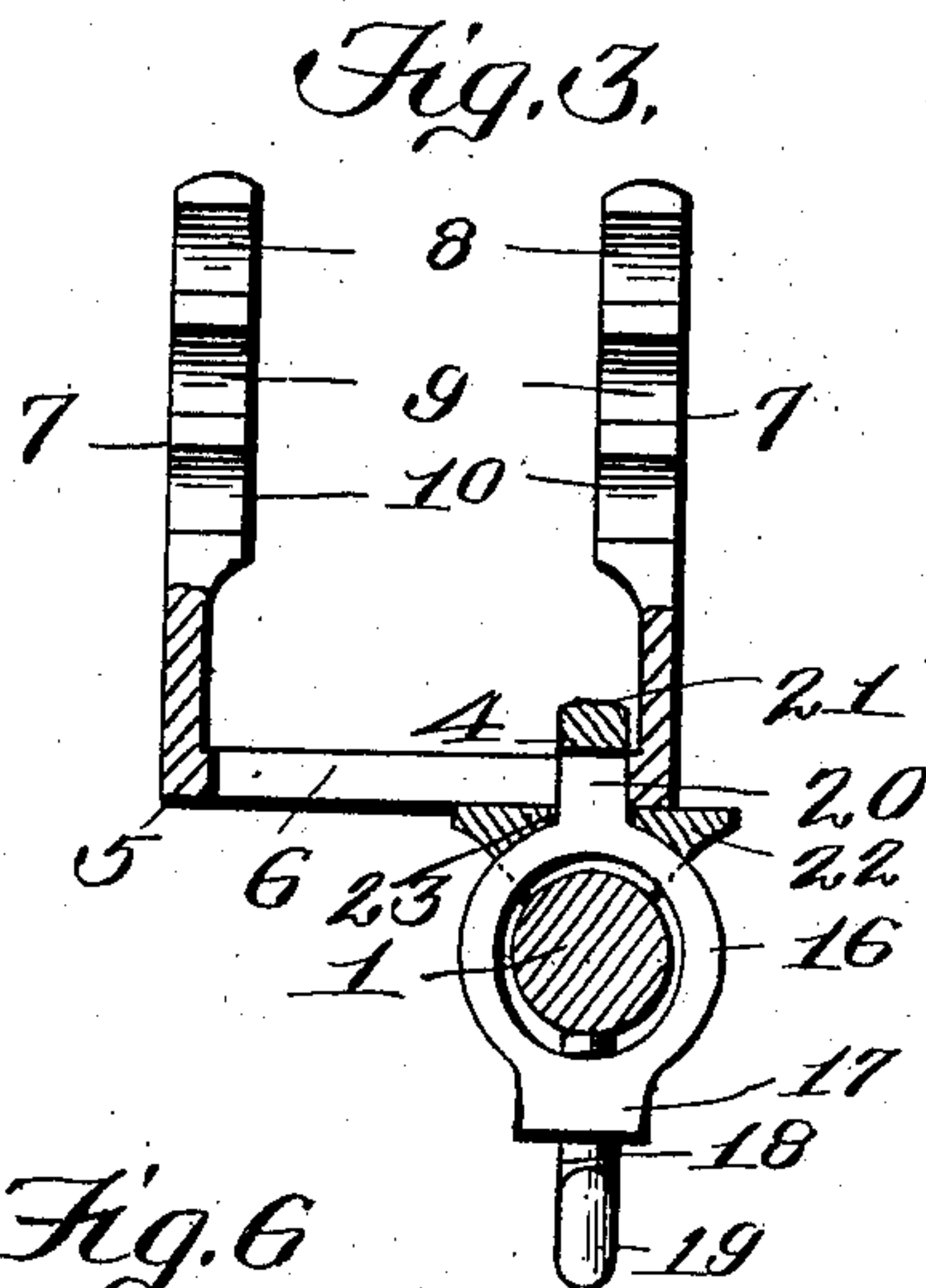
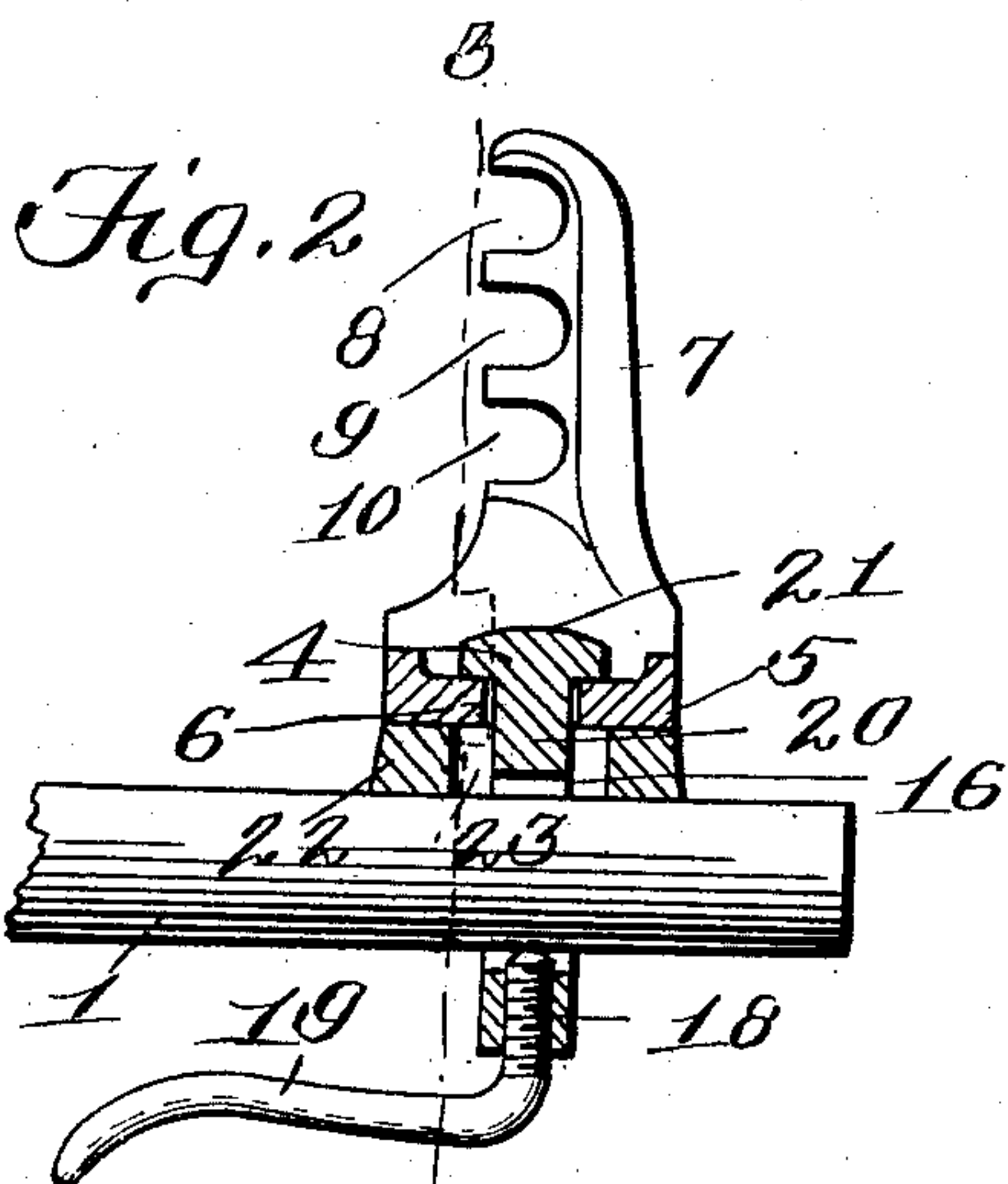
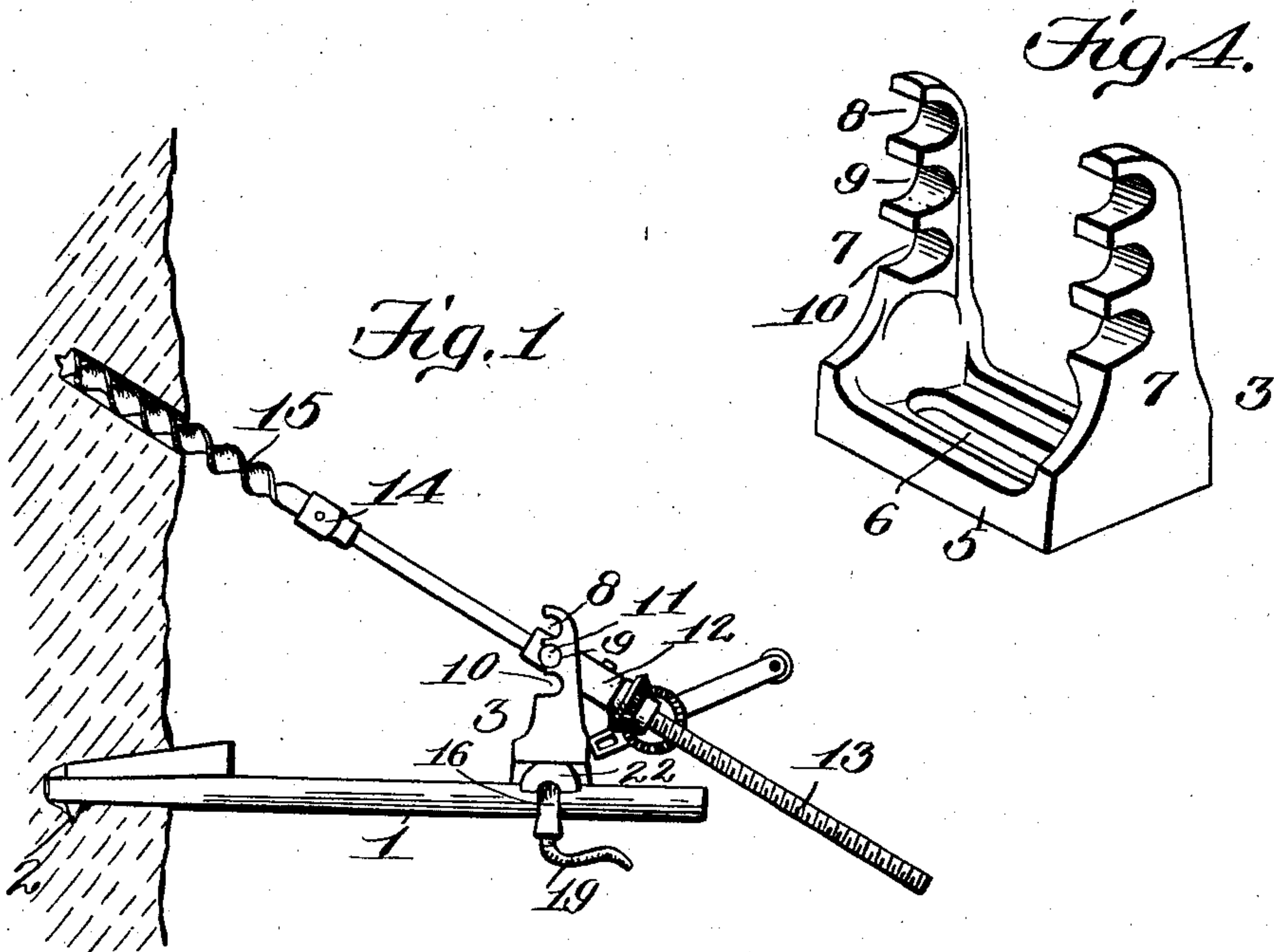


No. 733,775.

PATENTED JULY 14, 1903.

A. WALKER.
COAL DRILL SUPPORT.
APPLICATION FILED SEPT. 27, 1902.

NO MODEL.



Witnesses:
C. D. Mesker,
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UNITED STATES PATENT OFFICE.

ALEXANDER WALKER, OF WHATCHEER, IOWA, ASSIGNOR TO WHAT CHEER DRILL AND MINERS TOOL CO., OF WHATCHEER, IOWA, A CORPORATION OF IOWA.

COAL-DRILL SUPPORT.

SPECIFICATION forming part of Letters Patent No. 733,775, dated July 14, 1903.

Application filed September 27, 1902. Serial No. 125,075. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WALKER, a citizen of the United States, residing at Whatcheer, in the county of Keokuk and State of Iowa, have invented new and useful Improvements in Coal-Drill Supports, of which the following is a specification.

My invention relates to drilling apparatus, the same residing particularly in a support for a miner's coal-drill while the latter is in operation.

The object of the invention is to provide means for longitudinally and laterally adjusting the chair on the supporting-bar and means for vertically adjusting the feed-screw nut of the drill on said chair to enable the device to be used with drills which have become worn to variable degrees.

Other objects of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming a part of this specification, Figure 1 is a side elevation of my improved device. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the longitudinally and laterally adjustable chair, and Figs. 5 and 6 are detail views of the two parts of the clamp.

Like reference-numerals indicate like parts in the different views.

My improved drill-support is made up of a supporting-bar 1, having an outwardly-extending tooth or projection 2 adjacent to its inner end, a chair 3, and a clamp 4 for adjustably securing said chair to said supporting-bar. The outer end of the bar 1 is preferably cylindrical in form, and the chair 3 is preferably made of a casting comprising a base 5, having a transverse slot 6 therein, and substantially parallel uprights 7, having a series of sockets or notches 8 9 10 on the inner sides thereof. Three of said sockets or notches have been illustrated in the drawings; but a greater number may be employed, and two only may in some cases be found sufficient. These sockets or notches are for the reception of the trunnions 11 on the sides of the feed-screw nut 12, having the feed-screw 13 extending therethrough. Said feed-screw may be rotated in any suitable manner and is pro-

vided with a drill-socket 14 for the reception of the drill or auger 15.

The clamp 4 consists of a ring or collar 16, of slightly larger diameter than that of the bar 1 and adapted to embrace said bar. The said collar is formed with a boss 17 on the under side thereof, through which extends a clamping-screw 18, having a handle 19 thereon. The collar 16 is also provided on the side thereof opposite the boss 17 with a lug or projection 20, having an elongated cross-head 21 thereon. Coöperating with the ring or collar 16 is a base-piece 22, having a flat upper face forming a bearing-surface for the chair 3 and an elongated slot 23 therein, through which the head 21 is adapted to freely pass. The lower face of the clamping member 22 is provided with a groove 24 for the reception of the bar 1 and is also provided with grooves or recesses 25, which intersect the groove 24 and are provided for the reception of the ring 16. This construction provides for the projection of the head 21 of the lug 20 upwardly through the slot 23, so that when the parts of the device are in place said head may be passed through the elongated slot 6 in the base 5 of the chair 3 and engage the upper surface of said base, so as to clamp said chair in any position upon the supporting-bar 1.

In the use of my device the supporting-bar 1 is secured in place by nicking or cutting out a recess in the wall of coal, introducing one end of said bar into said recess with the prong or tooth 2 projecting downwardly, and applying a wedge to the upper side of said bar in said recess. The chair 3 may then be adjusted in proper position, the drill applied, with the trunnions 11 of the feed-screw nut fitting within one pair of the notches or sockets 8 9 10, and the drilling operation proceeded with.

As is well known, it is customary to use drills of three different sizes, generally two, four, and six feet in length, respectively. The two and four foot drills are used more frequently than the six-foot drills, and consequently they wear down more quickly. When worn down, it is difficult after using, say, the two-foot drill to introduce the four-foot drill into the device unless means be

provided for enabling the two-foot drill to be introduced into the coal a greater distance than it could be with the old form of device. When the drilling operation with my device is first commenced, the trunnions 11 are located in the central pair of notches or openings of the series—that is, in the notches or openings 9. If the two-foot drill has been worn down to, say, eighteen inches and the same has been operated as far as possible, the four-foot drill cannot be introduced into the device, for the simple reason that the hole bored by the first or two-foot drill is not sufficiently deep to enable the four-foot drill to enter far enough to enable the feed-screw nut 12 to register with the openings 9 in the chair 3. To remedy this defect, however, it is merely necessary to loosen the clamp 4 and move the chair 3 inwardly toward the wall of coal. The trunnions 11 may then be introduced into the upper series of notches or openings 8 and the two-foot drill operated to a further extent. When thus further operated, a four-foot drill may be inserted into the device and the operation proceeded with as before. It may be necessary in order to provide for the reception of the four-foot drill to move the chair 3 outwardly on the supporting-bar, so that the trunnions 11 of the feed-screw nut 12 may be fitted in the lower series of notches or sockets 10. If it be desired to drill a deeper hole than would ordinarily be produced by the six-foot drill, it is merely necessary to move the chair 3 inwardly on the supporting-bar 1 and introduce the trunnions 11 in the upper set of sockets or notches 8. When the chair 3 and the clamp 4 are located at the extreme outermost end of the supporting-bar 1, there will of course be no interference between the lower projecting end of the feed-screw 13 and the outer end of the supporting-bar 1. When, however, the chair 3 and the clamp 4 are adjusted inwardly on the supporting-bar 1, the supporting-bar would interfere with the lower projecting end of the feed-screw 13 unless means were provided for preventing it. I prevent this interference by providing for the lateral adjustment of the chair 3 and the supporting-bar 1. This is accomplished by loosening the clamping-screw 18 and moving the chair 3 laterally in one direction or the other, which movement is permitted by the provision of the elongated slot 6, and retightening said clamping-screw, causing the head 21 of the lug 20 to engage the upper side of the base 5 of the chair 3 at a different point. The feed-screw 13 may then project downwardly along one side of the supporting-bar 1 without interference.

It will be noted that the chair 3 is capable of both lateral and longitudinal adjustment on the supporting-bar 1. It is also capable of swinging or pivotal adjustment in a horizontal plane by loosening the clamping-screw 18, turning the chair 3 to the desired angle upon the base-piece 22, and then retightening

the clamping-screw 18. When the chair 3 is turned slightly to one side or the other, the cross-head 21 will of course lie in oblique relation to the transverse slot 6 of the chair 3. All adjustments of the chair 3 are effected by means of the single clamp 4, it being merely necessary in order to effect any one of the desired adjustments of the chair to loosen the clamping-screw 18, move the parts in one direction or the other, and retighten said screw. Furthermore, it will be noted that the chair 3 is capable of a rotary adjustment on the round supporting-bar 1—that is, it can be rotated or turned on said bar for the purpose of drilling a circular series of holes, as will be apparent.

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

1. In a coal-drill support, a supporting-bar, and a chair at right angles thereto and longitudinally and laterally adjustable thereon, said chair being provided with a series of notches or sockets for the vertical adjustment of the drill.

2. In a coal-drill support, a supporting-bar, a chair mounted on said bar at right angles thereto, said chair having parallel uprights provided with a series of notches or sockets for the reception of the trunnions of the feed-screw nut of the drill, and means for adjusting said chair longitudinally and laterally on said bar.

3. In a coal-drill support, a supporting-bar, a chair having parallel uprights provided with a series of notches or sockets for the reception of the trunnions of the feed-screw nut of the drill, and means for adjusting said chair laterally, obliquely and longitudinally on said bar.

4. In a coal-drill support, a supporting-bar, a chair having parallel uprights provided with a series of notches or sockets for the reception of the trunnions of the feed-screw nut of the drill, and means for adjusting said chair laterally and longitudinally on said bar.

5. In a coal-drill support, a supporting-bar, a chair thereon and a clamp for securing said chair to said bar, said chair comprising a base having a transverse slot therein and parallel uprights having a series of notches or sockets therein, and said clamp comprising a ring embracing said bar and having a lug thereon provided with a cross-head adapted to be passed through said transverse slot, a clamping member interposed between the said bar and the base of said chair, and a clamping-screw extending through said ring on the side thereof opposite said lug, as and for the purpose set forth.

6. In a coal-drill support, a supporting-bar, and a laterally and rotatably adjustable chair on said supporting-bar, said chair having means for adjusting the drill thereon.

7. In a coal-drill support, a supporting-bar and a chair longitudinally, laterally, and ro-

tatably adjustable on said supporting-bar, said chair having means for adjusting the drill thereon.

5 8. In a coal-drill support, a supporting-bar, and a chair longitudinally, laterally and obliquely adjustable and rotatable axially on said supporting-bar, said chair having means for adjusting the drill thereon.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALEXANDER WALKER.

Witnesses:

O. L. CRITCHFIELD,
SAMUEL GILLFOY.