S. W. BROTHERS.

ADJUSTABLE SUPPORT FOR ROCK DRILLS.

APPLICATION FILED SEPT. 28, 1908.

929,826.

Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.

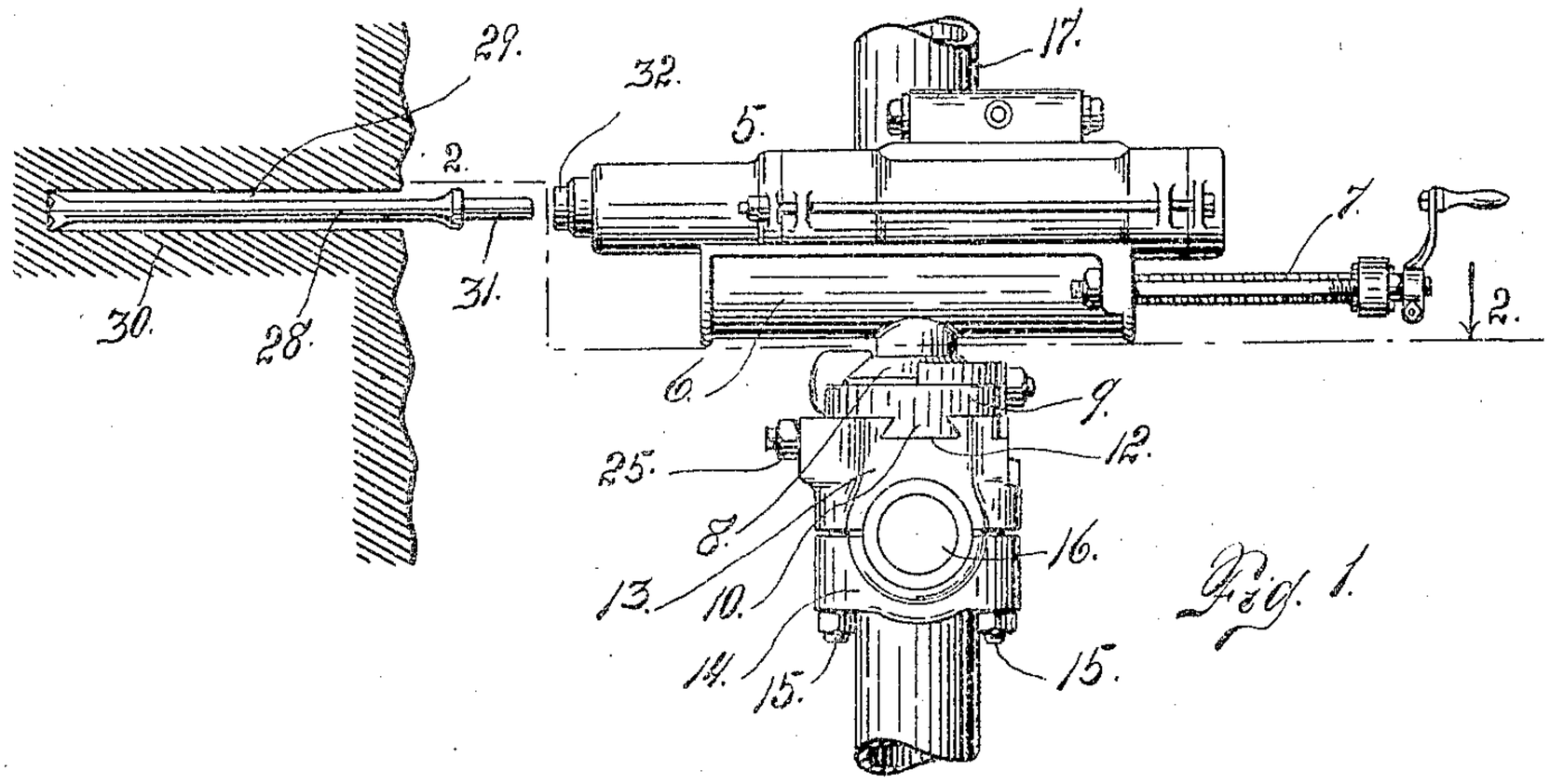

Fig. 1.

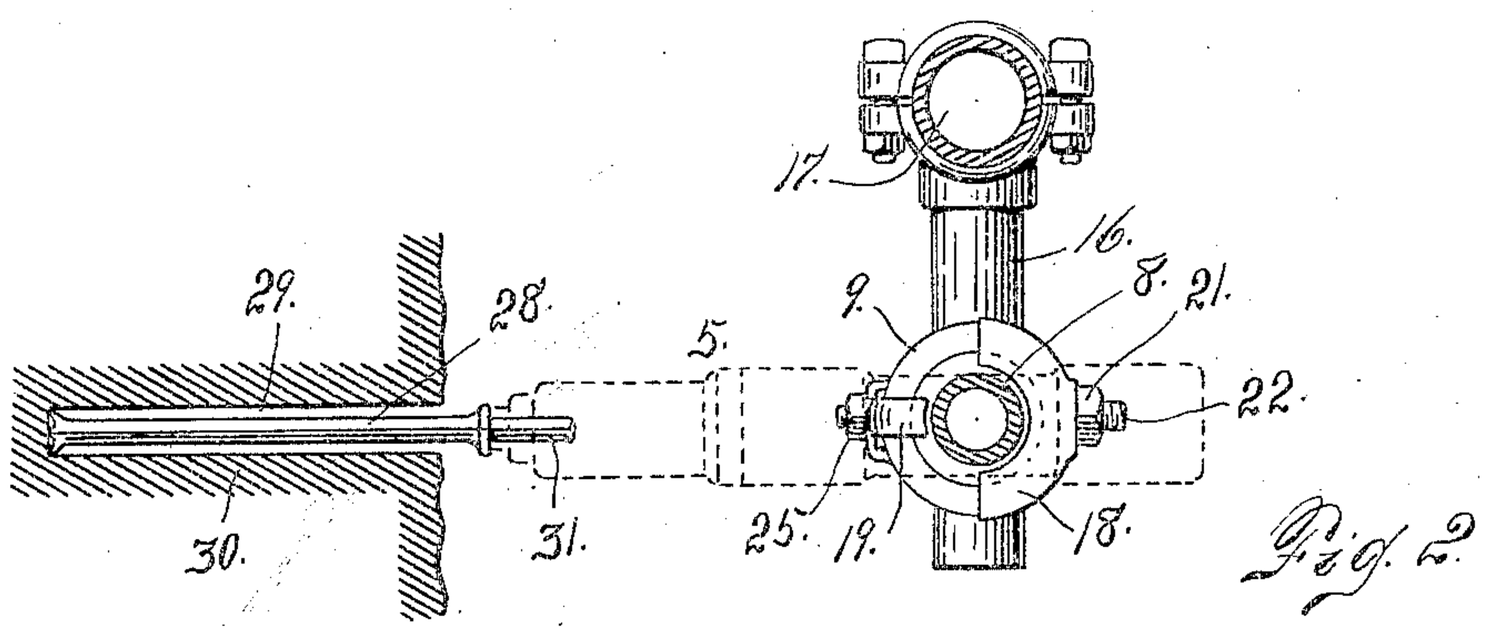

Fig. 2.

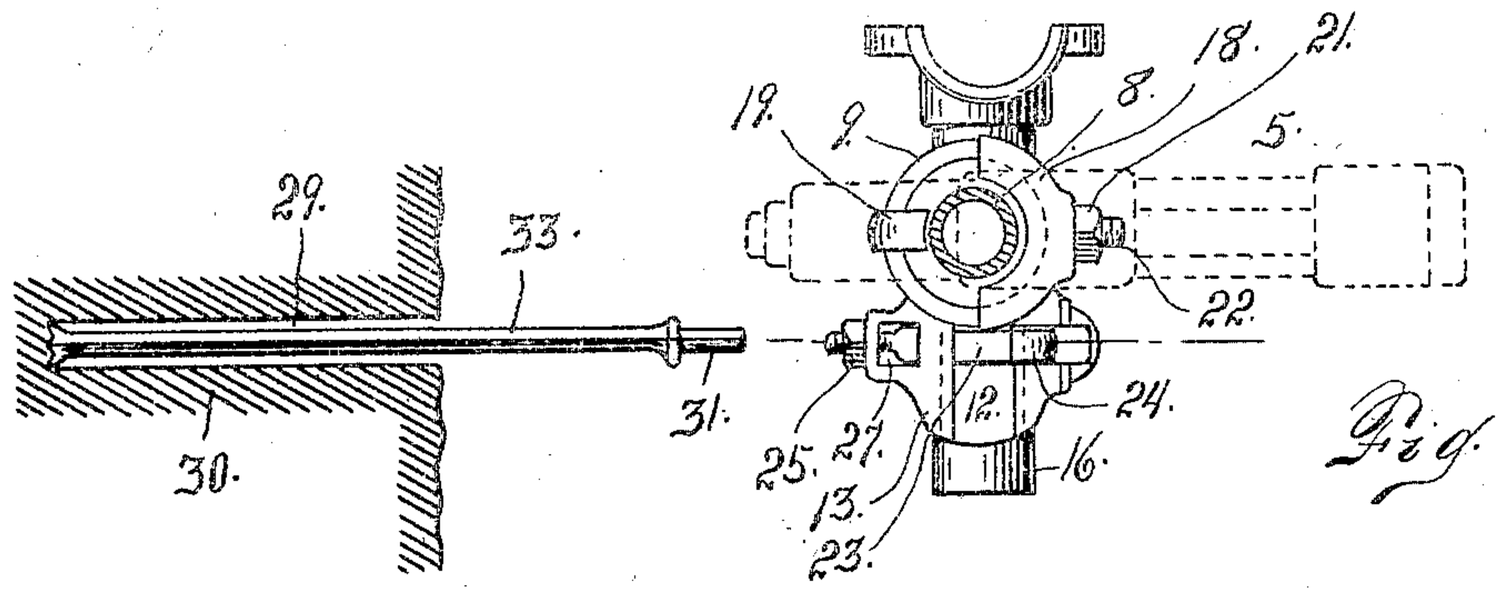

Fig. 3.

Witnesses
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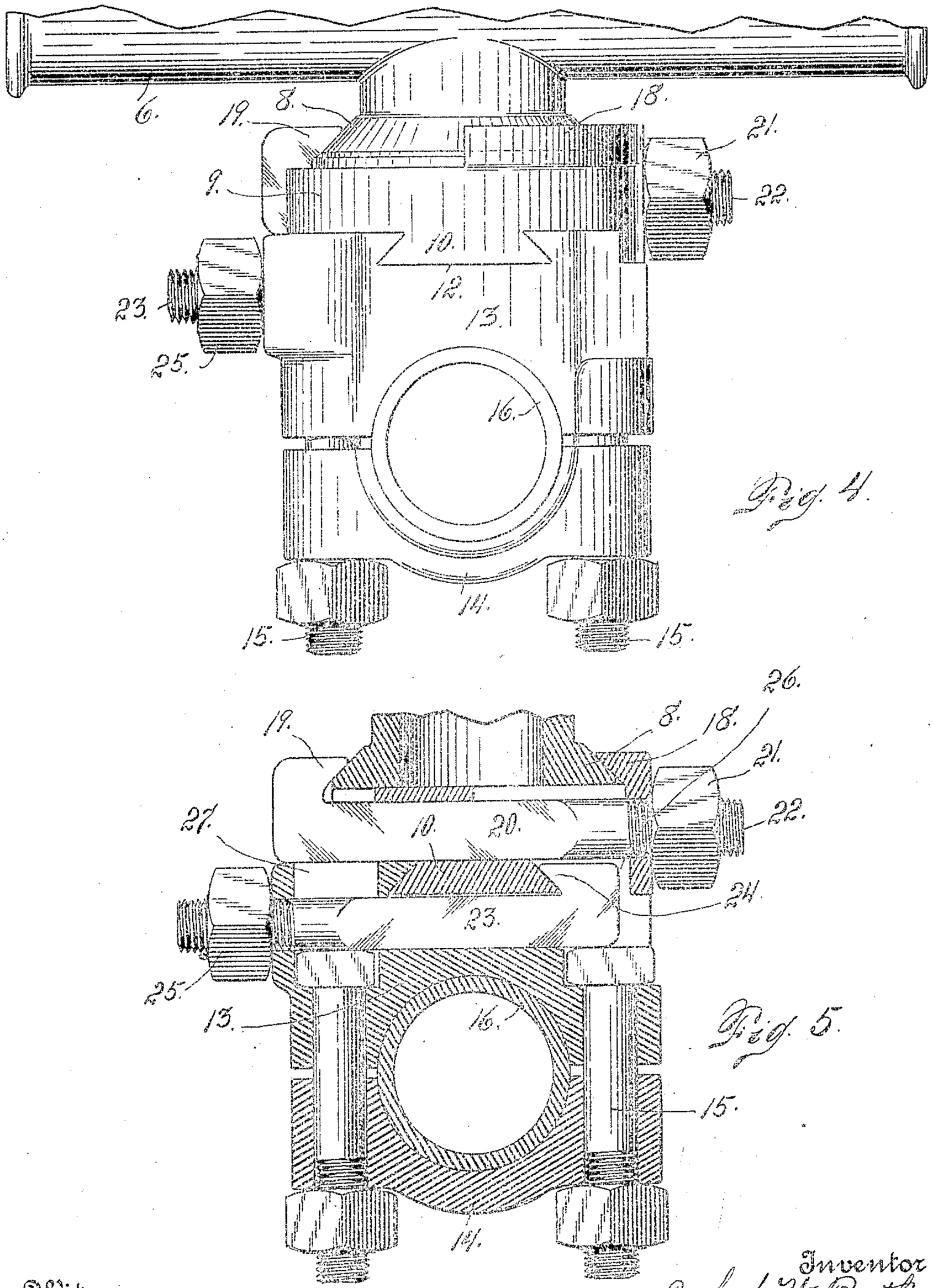

Fig. 4.

Fig. 5.

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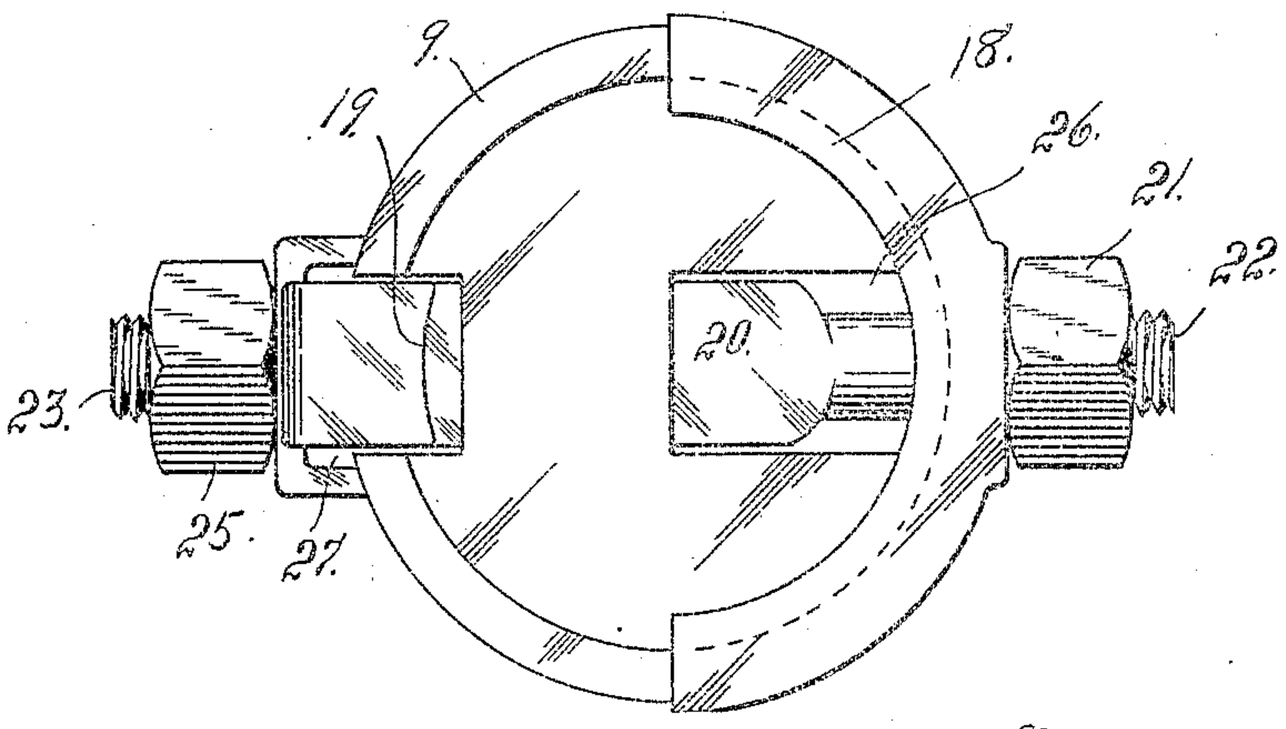

Fig. 6.

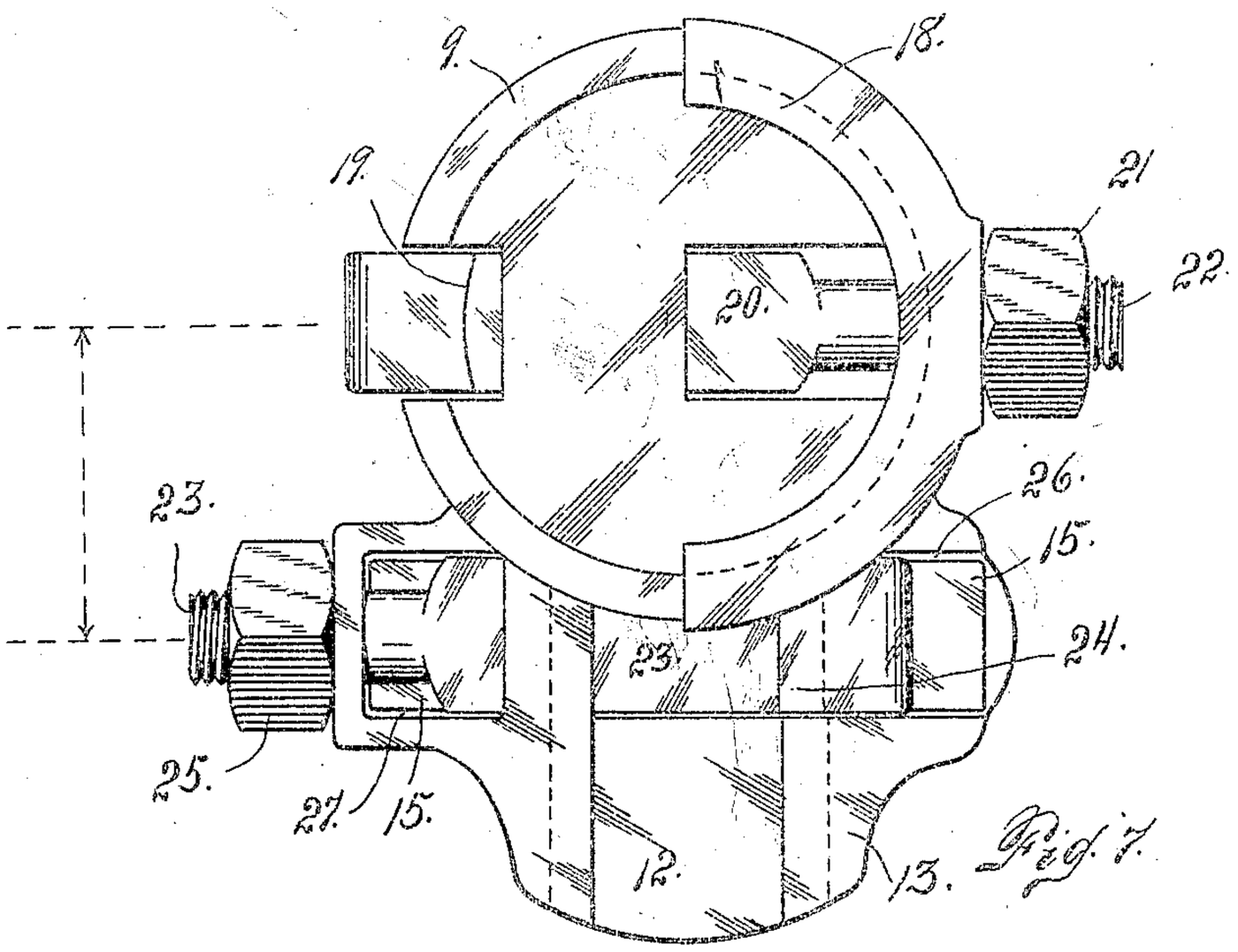

Fig. 7.

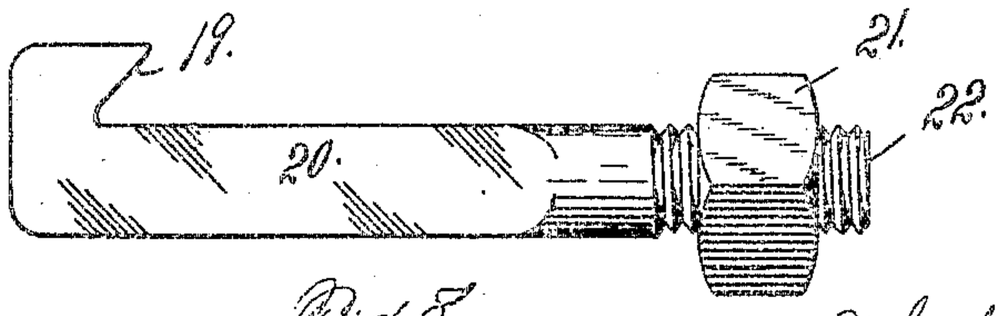

Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SUPPORT FOR ROCK-DRILLS.

No. 929,823. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed September 26, 1908. Serial No. 455,064.

To all whom it may concern:

Be it known that I, SANFORD W. BROTHERS, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Adjustable Supports for Rock-Drills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in adjustable supports for rock drills.

My object is to provide a construction whereby the entire machine will be shifted laterally to bring it out of alinement with the hole in the breast of the rock, to facilitate the change of drill steels.

It is well known that during the early stages of drilling a hole, a relatively short steel is employed, but as the hole increases in depth, it becomes necessary to remove the short steel and substitute longer ones successively until the hole has reached the required depth. Heretofore, so far as I am aware, it has been necessary to move the drill body rearwardly a sufficient distance to permit the removal of the one drill steel and the substitution of longer ones, after which the drill casing is again moved toward the breast of the rock or into proper position for drilling purposes.

In my improved construction it is only necessary to move the casing rearwardly a sufficient distance to permit the removal of the rear extremity of the steel from the chuck, after which the entire drill body may be caused to slide laterally in a horizontal plane a sufficient distance to throw it out of alinement with the hole, whereby the one drill steel may be removed and a longer inserted in the drill hole, after which the drill may be returned to its normal position and the drill steel connected with the chuck. In order to permit this adjustment, it is only necessary to loosen a single nut which is applied to a bolt which secures the slidable supporting disk or member to one of the clamp members employed in mounting the drill upon the column.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of a drill shown in connection with my improved adjustable support or saddle. Fig. 2 is a section taken on the line 2—2 Fig. 1 looking downwardly, the position of the drill body being indicated by dotted lines. Fig. 3 is a similar view showing the drill body shifted laterally to throw it out of alinement with the drill hole, the drill steel having been disconnected from the chuck. Fig. 4 is a detail view of a drill saddle equipped with my improvements. This view of the saddle is the same as in Fig. 1 but shown on a much larger scale. Fig. 5 is a central vertical section taken through the saddle mechanism, on the same scale as Fig. 4. Fig. 6 is a top plan view in detail of the saddle mechanism. Fig. 7 is a similar view showing the adjustable member shifted laterally. Fig. 8 is a detail view of one of the clamping bolts employed in my improved drill saddle construction.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the drill casing, 6 the guide shell and 7 the feed screw for shifting the casing longitudinally upon the shell. The depending disk 8 of the guide shell is seated upon the slidable member 9, whose bottom is provided with a dovetailed tongue 10 engaging a groove 12 of counterpart shape, formed in a clamp member 13, which coöperates with a member 14. These clamp members 13 and 14 are connected by bolts 15, whereby the saddle is secured to the stub-shaft 16 projecting from the vertical column 17 which is of ordinary construction.

The drill disk 8, engages a rim 18 projecting upwardly from the body of the adjustable member 9, the said rim being undercut to receive the beveled edge of the disk. The opposite side of the disk is engaged by the hook extremity 19 of a clamping bolt 20 which passes through an opening formed in the member 9, a nut 21 being applied to its threaded extremity 22. When this nut is screwed tightly against the member, the guide shell of the drill is securely connected with the saddle.

The top portion of the clamp member 13 is provided with a central horizontal opening through which is passed a clamping bolt 23 having a hooked extremity 24 adapted to

engage the dove-tailed tongue 10 of the adjustable member 9 on one side, the wall of the groove being cut away on that side to permit this result. By means of this bolt, to the threaded extremity of which is applied a nut 25, the adjustable saddle member 9 may be secured tightly in place. This bolt 23 occupies a position directly above the heads of the bolts 15 which connect the clamp members 13 and 14 as heretofore explained. In assembling the saddle members the bolts 15 are placed in position before the saddle member 9 and the bolt 23 are put in place, the upper portion of the clamp member 13 being cut away, as shown at 26 and 27, to permit this result.

From the foregoing description the use and operation of my improved construction will be readily understood. Assuming that the drill steel 28 has been used to drill a hole 29, in the rock 30, if it is desirable to remove this drill steel and introduce a longer one for the purpose of drilling the hole deeper, it is only necessary to first move the drill casing 5 rearwardly upon the guide shell 6, through the medium of the feed screw 7, a sufficient distance to detach the rear end 31 of the steel from the chuck 32 of the casing. Then by loosening the nut 25 upon the bolt 23 sufficiently to permit the movement of the tongue 10 in the groove 12, the entire drill mechanism may be moved laterally with the adjustable member 9 to the position indicated by dotted lines in Fig. 3. The drill steel 28 may then be removed and a longer steel 33 put in its place, after which the drill mechanism may be returned to its original position after moving the casing rearwardly a sufficient distance u on the guide shell to permit the rear extremity of the drill steel to be inserted in the chuck.

The adjustable member 9 is so constructed with reference to the clamp member 13 upon which it is mounted, that when the member 9 is returned to the proper position, the member 9 and the clamp 13 will register as to their outer curved edges, so that the workmen will always know when the proper adjustment is made without paying attention to the position of the drill steel.

Having thus described my invention, what I claim is:

1. A drill saddle provided with a top member and a lower member, the top member being provided with means on its upper surface for rotatably mounting the drill thereon, and suitable means on its under surface for slidably mounting said top member upon the adjacent lower member, the top member also having a clamping bolt passed therethrough, at right angles to the direction of its sliding movement, for locking the drill in place, the adjacent lower member being also provided with a clamping bolt passed therethrough parallel with the clamping bolt of the top member, the threaded extremities of the two bolts being exposed on opposite sides of the saddle, and provided with fastening nuts, for the purpose set forth.

2. A drill saddle provided with a top member and a lower member, the top member being slidably mounted upon the adjacent lower member, the top member having a tongue engaging a counterpart groove formed in the adjacent lower member, the top member having a clamping bolt passed therethrough, at right angles to the direction of its sliding movement, for locking the drill in place, the adjacent lower member being also provided with a clamping bolt passed therethrough parallel with the clamping bolt of the upper member, the threaded extremities of the two bolts being exposed on opposite sides of the saddle, and provided with fastening nuts, for the purpose set forth.

3. A drill saddle comprising a pair of clamping members, bolts connecting said members, the upper member having an opening extending at right angles to the clamp bolts, said opening being located directly above the heads of the bolts, a clamping bolt passed through said opening and serving to lock the clamp bolts in place, the said saddle having a top member provided with a tongue engaging a counterpart groove formed in the adjacent clamping member, the clamping bolt having a hook-shaped extremity adapted to engage said tongue, the said top member being also provided with a clamping bolt, passed through an opening formed therein, and having a hook-shaped head for locking the drill in place upon the saddle, substantially as described.

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

SANFORD W. BROTHERS.

Witnesses:
A. J. O'Brien,
A. Ebert O'Brien.