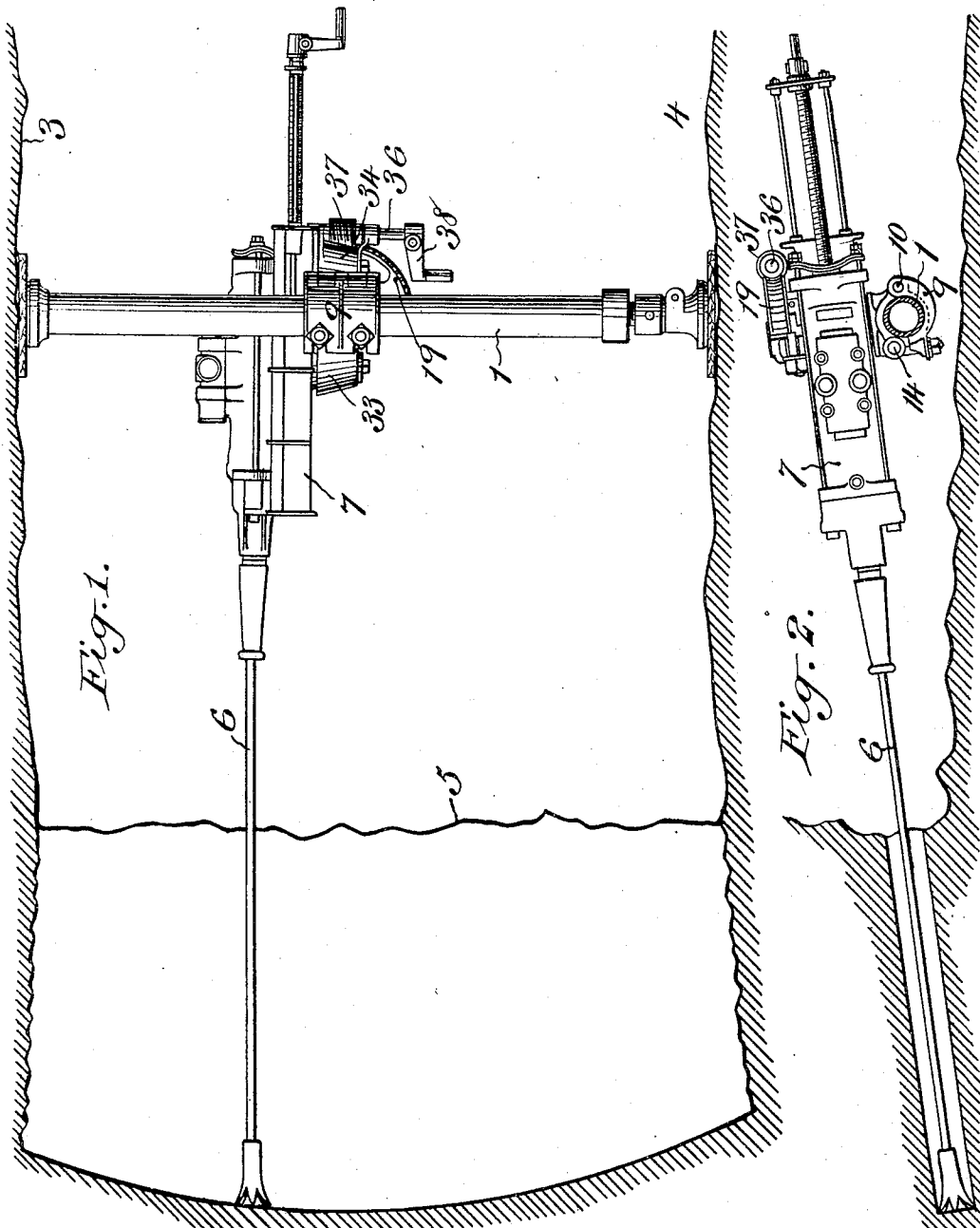


No. 792,288.

PATENTED JUNE 13, 1905.

W. PRELLWITZ.
CHANNELING MACHINE.
APPLICATION FILED SEPT. 2, 1904.

5 SHEETS—SHEET 1.



Witnesses:-
J. George Barry.
Henry Thieme.

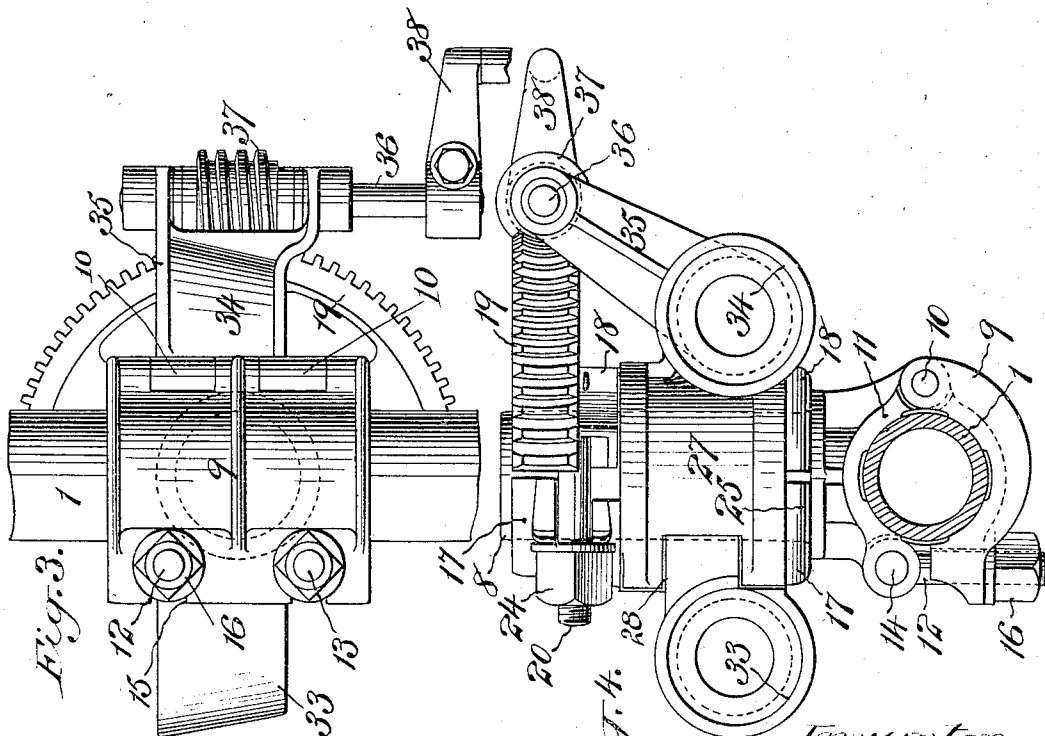
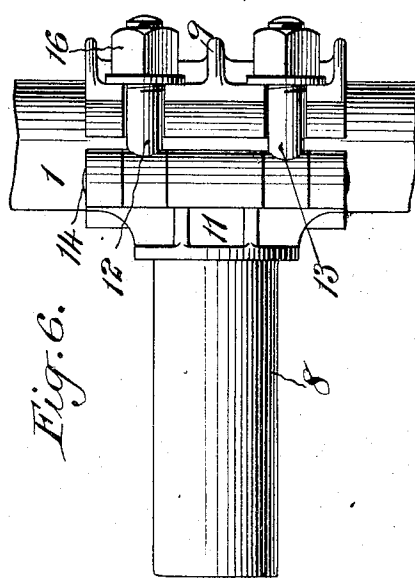
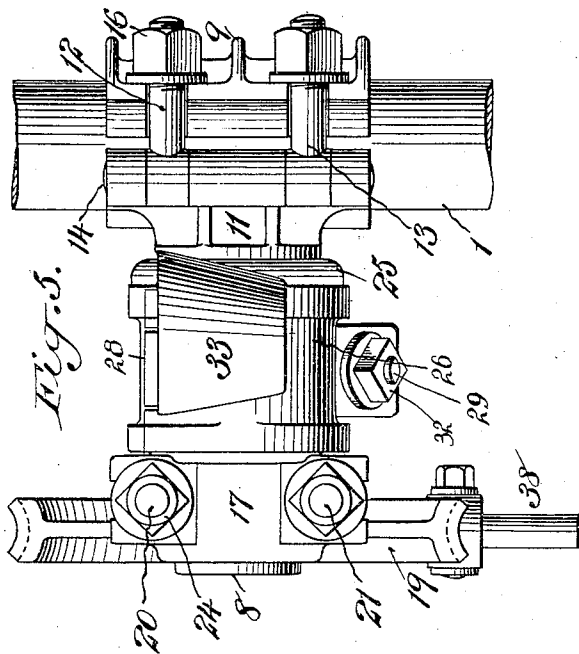
Inventor:-
Wm Prellwitz
by attorneys
Munn & Seward

No. 792,288.

PATENTED JUNE 13, 1905.

W. PRELLWITZ.
CHANNELING MACHINE.
APPLICATION FILED SEPT. 2, 1904.

5 SHEETS—SHEET 2.



Witnesses:
F. George Barry,
Henry Thime.

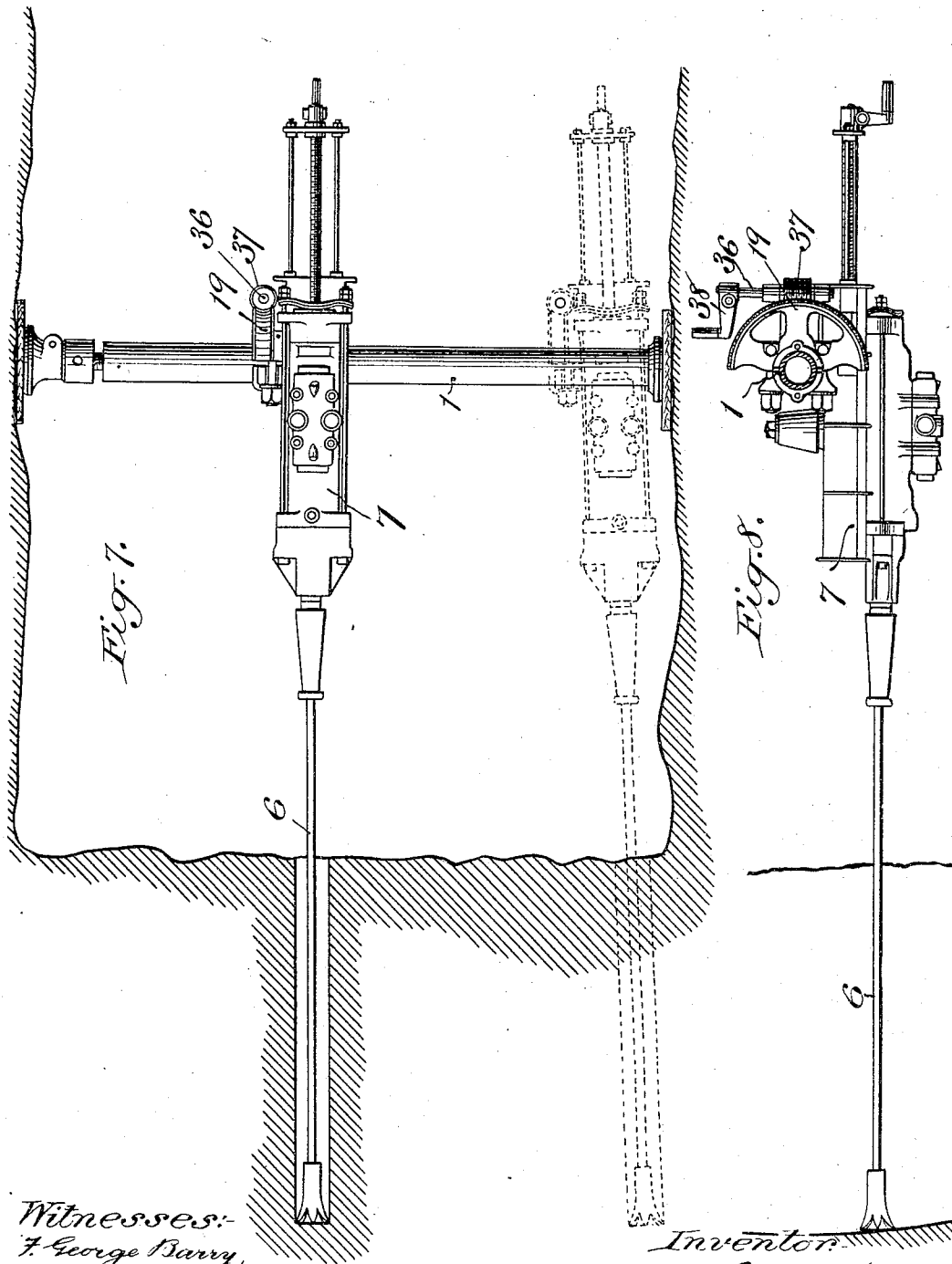
Inventor:
Wm. Prellwitz
by attorneys
Mount Sward

No. 792,288.

PATENTED JUNE 13, 1905.

W. PRELLWITZ.
CHANNELING MACHINE.
APPLICATION FILED SEPT. 2, 1904.

5 SHEETS—SHEET 3.



Witnesses:
F. George Barry,
Henry Thiem,

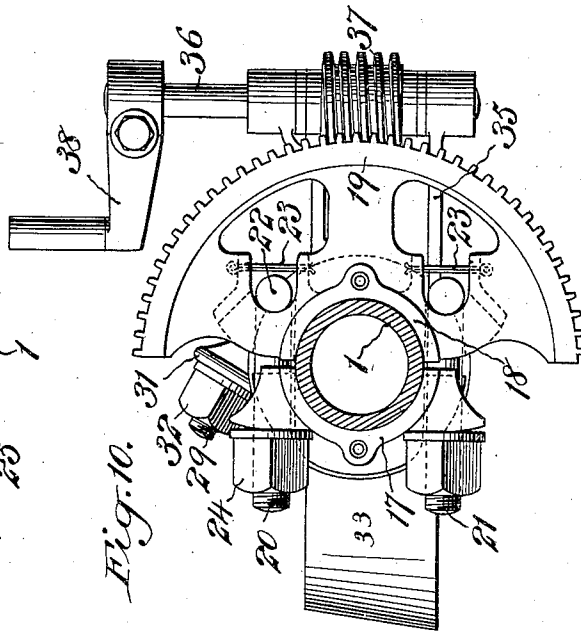
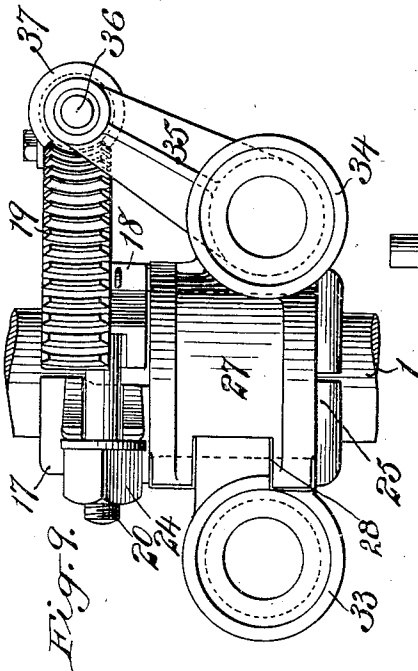
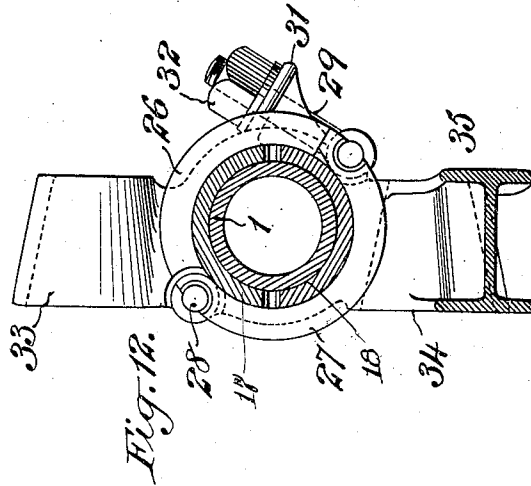
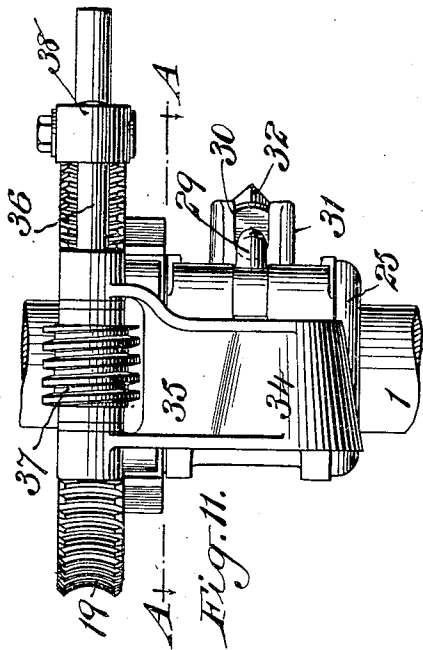
Inventor:
Wm. Prellwitz
by attorneys
Brown & Shrank

No. 792,288.

PATENTED JUNE 13, 1905.

W. PRELLWITZ.
CHANNELING MACHINE.
APPLICATION FILED SEPT. 2, 1904.

6 SHEETS—SHEET 4.



Witnesses:
J. George Barry,
Henry Thime.

Inventor:
Wm. Prellwitz
by attorneys
Brown & Swann

No. 792,288.

PATENTED JUNE 13, 1905.

W. PRELLWITZ.
CHANNELING MACHINE.
APPLICATION FILED SEPT. 2, 1904.

5 SHEETS—SHEET 5.

Fig. 14.

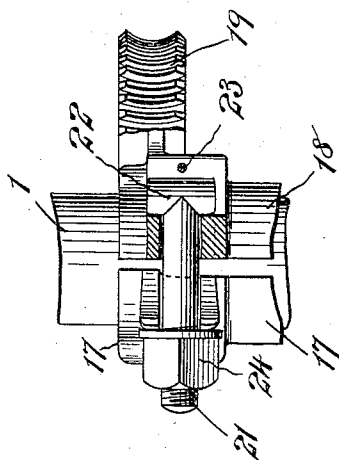
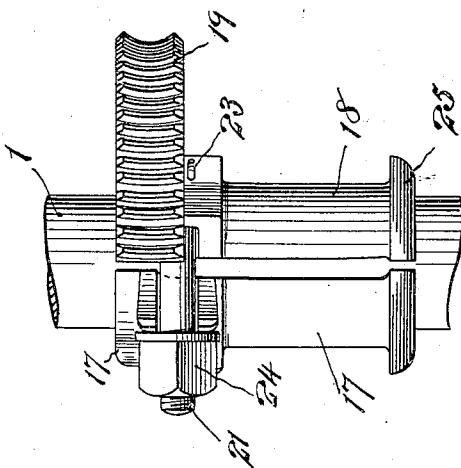


Fig. 13.



Witnesses:
J. George Barry,
Henry Thieme.

Inventor:
William Prellwitz
By Brown & Devore
his attorneys

UNITED STATES PATENT OFFICE.

WILLIAM PRELLWITZ, OF EASTON, PENNSYLVANIA, ASSIGNOR TO THE
INGERSOLL-SERGEANT DRILL COMPANY, OF NEW YORK, N. Y., A COR-
PORATION OF WEST VIRGINIA.

CHANNELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 792,288, dated June 13, 1905.

Application filed September 2, 1904. Serial No. 223,103.

To all whom it may concern:

Be it known that I, WILLIAM PRELLWITZ, a citizen of the United States, and a resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Channeling-Machine, of which the following is a specification.

My invention relates to a channeling-machine, and more particularly to what is known in the art as a "tunnel-channeler" for coal-mining, with the object in view of bringing the tool close to the column which supports it whatever be its angular position relative to the column and to increase the scope of the tool and its direction of cut without changing the position of the supporting-column.

With these ends in view my invention consists in certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation, showing the main column in position and the tool supported on an arm at right angles to the main column as in use in a tunnel. Fig. 2 is a top plan view of the same, showing the main supporting-column in section. Fig. 3 is an enlarged view in detail, showing a portion of the main supporting-column and the parts immediately connected therewith in elevation, the tool-shell and tool being removed and the worm-handle turned a part revolution from the position shown in Fig. 1. Fig. 4 is a top plan view of the same, showing the main supporting-column in transverse section. Fig. 5 is a view of the same in end elevation. Fig. 6 is a similar view of the main supporting-column and arm attached thereto, the other parts being removed. Fig. 7 is a view in side elevation, showing the main supporting-column and tool attached to the main supporting-column as distinguished from a tool attached to the main supporting-arm as shown in Fig. 1, Fig. 7 also showing in dotted lines the position of the tool with respect to the main supporting-column adjusted at a lower position thereon. Fig. 8 is a top plan view of the same, showing the main supporting-col-

umn in transverse section. Fig. 9 is an enlarged view in elevation of a portion of the supporting-column and parts immediately connected therewith, the tool-shell and tool being removed. Fig. 10 is a top plan view of the same, showing the main supporting-column in transverse section. Fig. 11 is a view of the same in end elevation. Fig. 12 is a horizontal section taken in the plane of the line A A of Fig. 11. Fig. 13 is a view in side elevation, showing the two-part trunnion applied to the column with the shell-bearing removed; and Fig. 14 is a view in side elevation of the upper portion of the two-part trunnion applied to the column and partly broken away to show the head of one of the retaining-bolts.

It is to be noted that the bearing to which the tool-supporting shell is fixed is the same whether the tool be attached to an arm on the main supporting-column or to the main supporting-column itself and also that the trunnion on which the said bearing revolves is the same whether it be adjusted to the arm or to the column, the difference in structure between the form shown in the group of figures 1 to 6, inclusive, and the group of figures 7 to 12, inclusive, being simply the introduction in the group of figures 1 to 6, inclusive, of an arm clamped to the main supporting-column and extending at right angles thereto for the purpose of supporting the tool in a position to make a vertical cut as well as a horizontal cut by clamping the tool either to the arm or to the main supporting-column, as may be desired, while in the construction shown in the group of figures 7 to 12, inclusive, provision is made for clamping the tool to the main supporting-column only, and hence limiting the plane of the cut to a horizontal plane or a plane transverse to the axis of the main supporting-column.

The main supporting-column is denoted by 1. It is intended to be fixed, as is common, between the upper and lower walls 3 and 4 of a tunnel and in such proximity to the wall 5 to be channeled as will bring the drill 6 into its desired position to make the cut.

My present invention is directed to the means for supporting the drill and its shell 7, and a detailed description of the said drill 6 and its shell 7 is therefore omitted.

5 The arm for use in connection with the main supporting-column 1 when it is desired to mount the tool in position to make a cut in a plane parallel with the axis of the main supporting-column is denoted by 8 and may conveniently be of the same diameter as the
10 main supporting-column 1. The said arm is provided with a bearing, one part 9 of which is hinged, as at 10, Fig. 4, to the stationary part 11 of the bearing, and the free end of
15 the part 9 may be drawn toward the part 11 to clamp the bearing on the column 1 by means of one or more bolts, in the present instance two, (denoted, respectively, by 12 and 13,) hinged to the stationary part of the
20 bearing at 14 and their free ends arranged to swing into slots 15, formed in the free end of the swinging part 9 of the hinge, the threaded ends of said bolts 12 and 13 being provided with nuts 16.

25 On the arm 8, as shown in Figs. 1 to 5, inclusive, or on the column 1, as shown in Figs. 7 to 12, inclusive, I fix a trunnion on which the shell-support may rotate. This trunnion consists of two half-sections, denoted, respectively, by 17 18, (shown in end view in Fig.
30 10,) one of these half-sections, in the present instance 18, being provided with a worm-wheel or segment of worm-wheel 19 and the two half-sections being firmly clamped to the
35 arm or main column by means of bolts 20 21, provided with T-heads 22, engaged with the body of the worm-wheel segment 19, as shown in Fig. 10, and held against dropping out when released by means of cotter-pins 23.

40 The bolts 20 21 are provided with nuts 24, which bear against the section 17 of the trunnion and draw the two parts 17 and 18 into tight gripping contact with the arm or column, thus holding the segment worm-wheel
45 19 in fixed position for any particular adjustment. The said sections 17 and 18 are also provided on their outer faces with a retaining-flange 25 for holding the shell-support in position thereon.

50 The shell-support is arranged to be removably secured to the trunnion by forming it with two half-bearings, (see in particular Figs. 11 and 12, where the half-bearings are denoted, respectively, by 26 and 27,) the half-
55 bearing 27 being hinged at 28 to the half-bearing 26 and the said half-bearing 27 having at its free end a bolt 29, hinged thereto, the latter being arranged to swing into a slot 30, (see Fig. 11,) formed in a boss 31 on the half-
60 bearing 26, so that its nut 32 shall bear against the face of the boss and draw the parts into the desired adjustment with respect to the trunnion. This adjustment is intended to be a close rotary fit.

65 The half-bearing 26 has formed integral

therewith a hollow cone 33 for attaching the drill-shell thereto, and in the present structure I have shown a second hollow cone 34 formed on the half-bearing 27, also for the purpose of attaching the drill-shell thereto, 70 so that a choice may be had as to the side of the bearing to which the shell shall be attached. The half-bearing 27 also has formed integral therewith a bracket 35 for the reception of the worm-wheel shaft 36, carrying a
75 worm 37 in engagement with the worm-wheel segment 19.

A crank-handle 38 is attached to the worm-wheel shaft 36 for convenience in rotating the worm, and hence swinging the shell-support 80 on the trunnion to feed the drill forward and backward along the path of its cut.

The cones 33 and 34 have their faces in a plane which extends near the surface of the column 1 or arm 8, as the case may be, so that 85 the shell when attached thereto will be near the supporting column or arm, and whatever the rotary position of the shell-support may be on its trunnion the shell will remain in the same relation to the column 1, thereby bring- 90 ing for all angular positions of the drill the strain upon the shell-support close to the column about which it rotates.

By the above arrangement the main supporting-column may be utilized to support the 95 drill for making horizontal cuts at any desired height throughout the height of the column, and it may also be utilized as a support for the arm 8, which without any change in the parts may serve as a support for the drill 100 to make vertical cuts at any desired angle in a plane transverse to the axis of the main supporting-column.

It will further be observed that the worm-wheel segment is a part of the hollow trun- 105 nion about which the shell-support revolves, thus admitting of an adjustment of this trunnion to suit any desired position of the drill with respect to either the supporting-arm or the supporting-column. 110

What I claim is—

1. The combination with a supporting-column, of a trunnion removably secured to the column with its axis parallel with the axis of the column and a shell-support mounted in a 115 plane transverse to the axis of the trunnion.

2. The combination with a supporting-column and an arm removably secured to the column, of a trunnion adapted to be removably secured to either the arm or the column and a shell-support mounted to rotate about the axis of the trunnion. 120

3. The combination with a suitable support and a trunnion adapted to embrace the support, of a shell-support arranged to embrace 125 the trunnion and means for rotating the shell-support on the trunnion about the axes of the support and trunnion.

4. The combination with a suitable support and a two-part trunnion arranged to be 130

clamped to the support, of a shell-support provided with a two-part bearing arranged to embrace the said trunnion and means for rotating the shell-support on the trunnion about the axes of the support and trunnion.

5 5. The combination with a suitable support and a two-part trunnion arranged to embrace the support, one of the said trunnion parts being provided with a worm-wheel segment, 10 of a shell-support arranged to embrace the said trunnion, the shell-support being provided with a worm adapted to engage the worm-wheel segment to rotate the shell-support on the trunnion about the axes of the support and trunnion.

15 6. The combination with a supporting-column and an arm adapted to be clamped to the column, of a two-part trunnion adapted to embrace either the arm or the column at pleasure, a shell-support provided with a two-part 20 bearing for embracing the trunnion and inter-engaging gear carried by the trunnion and shell-support for rotating the support on the trunnion about the axis of the trunnion.

25 7. The combination with a suitable support

and a two-part trunnion provided with means for binding it on the support, of a shell-support provided with a two-part bearing and with means for locking the parts of the bearing in position around the trunnion, the said 30 shell-support being further provided with a cone-bearing for the attachment of the shell thereto.

8. The combination with a suitable support and a two-part trunnion provided with means 35 for binding it on the support, of a shell-support provided with a two-part bearing and with means for locking the parts of the bearing in position around the trunnion, the said shell-support being further provided with a 40 plurality of cone-bearings for the attachment of the same thereto.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 26th day of August, 1904. 45

WILLIAM PRELLWITZ.

Witnesses:

WARD RAYMOND,
RUSSELL WILHELM.