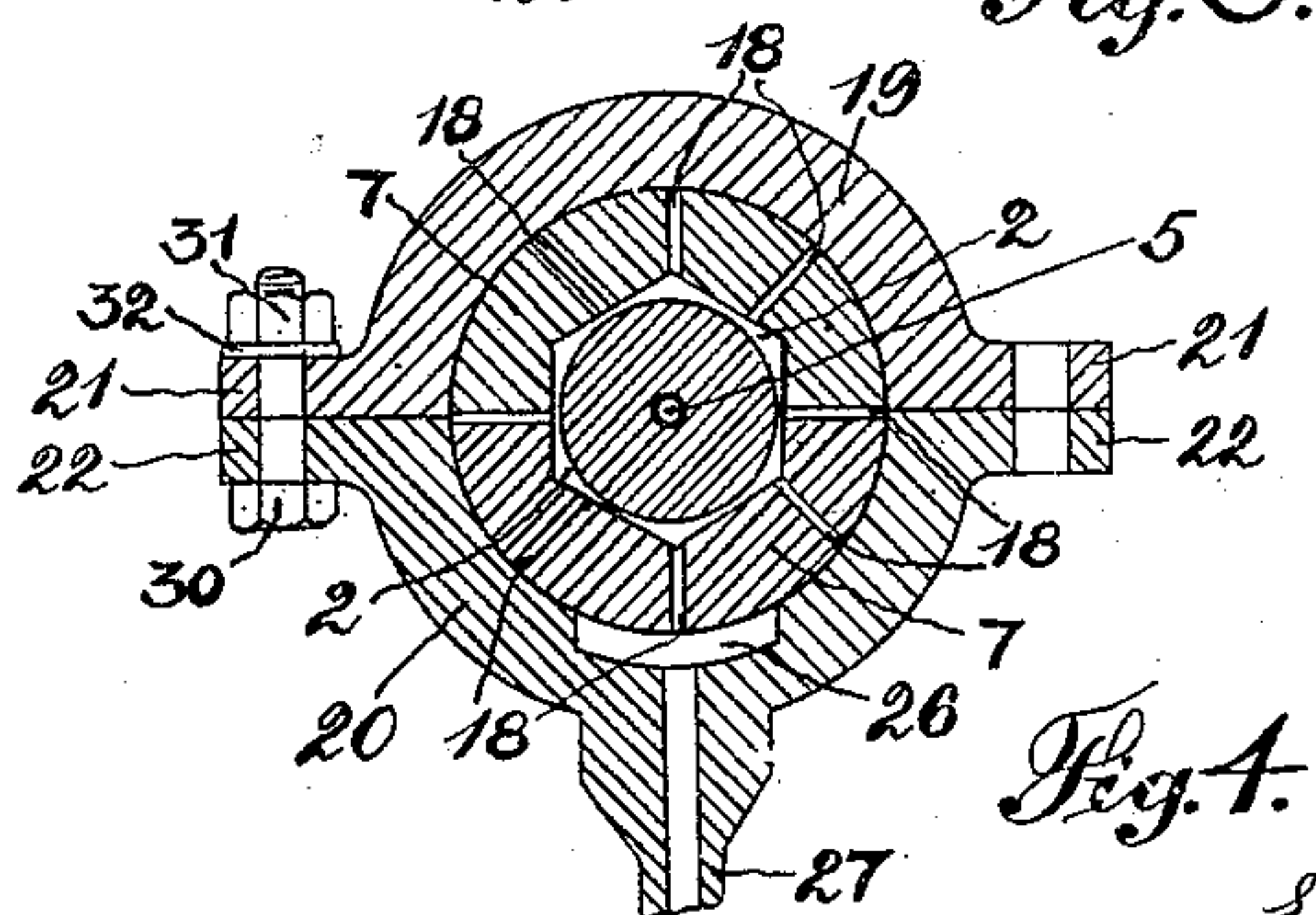
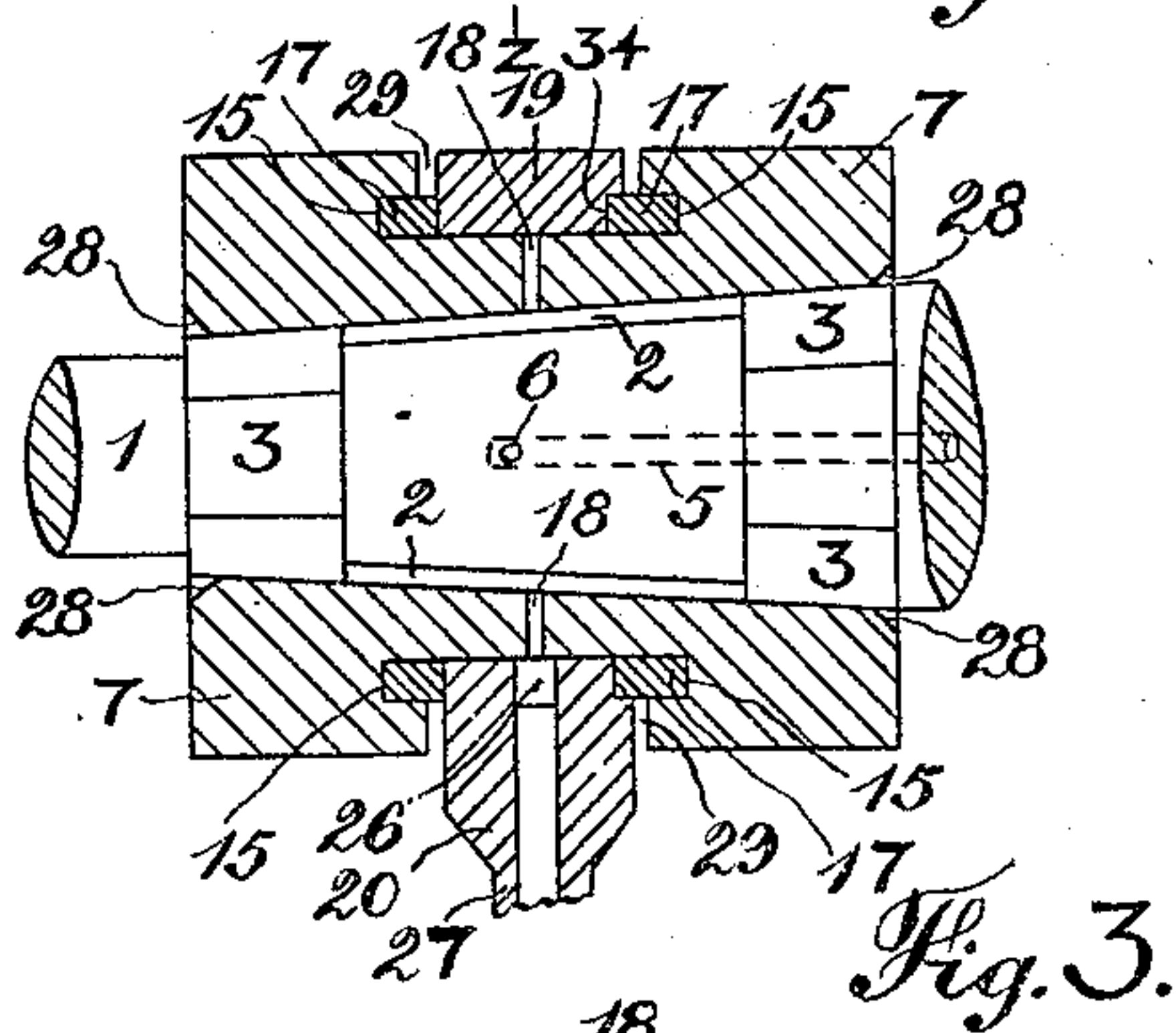
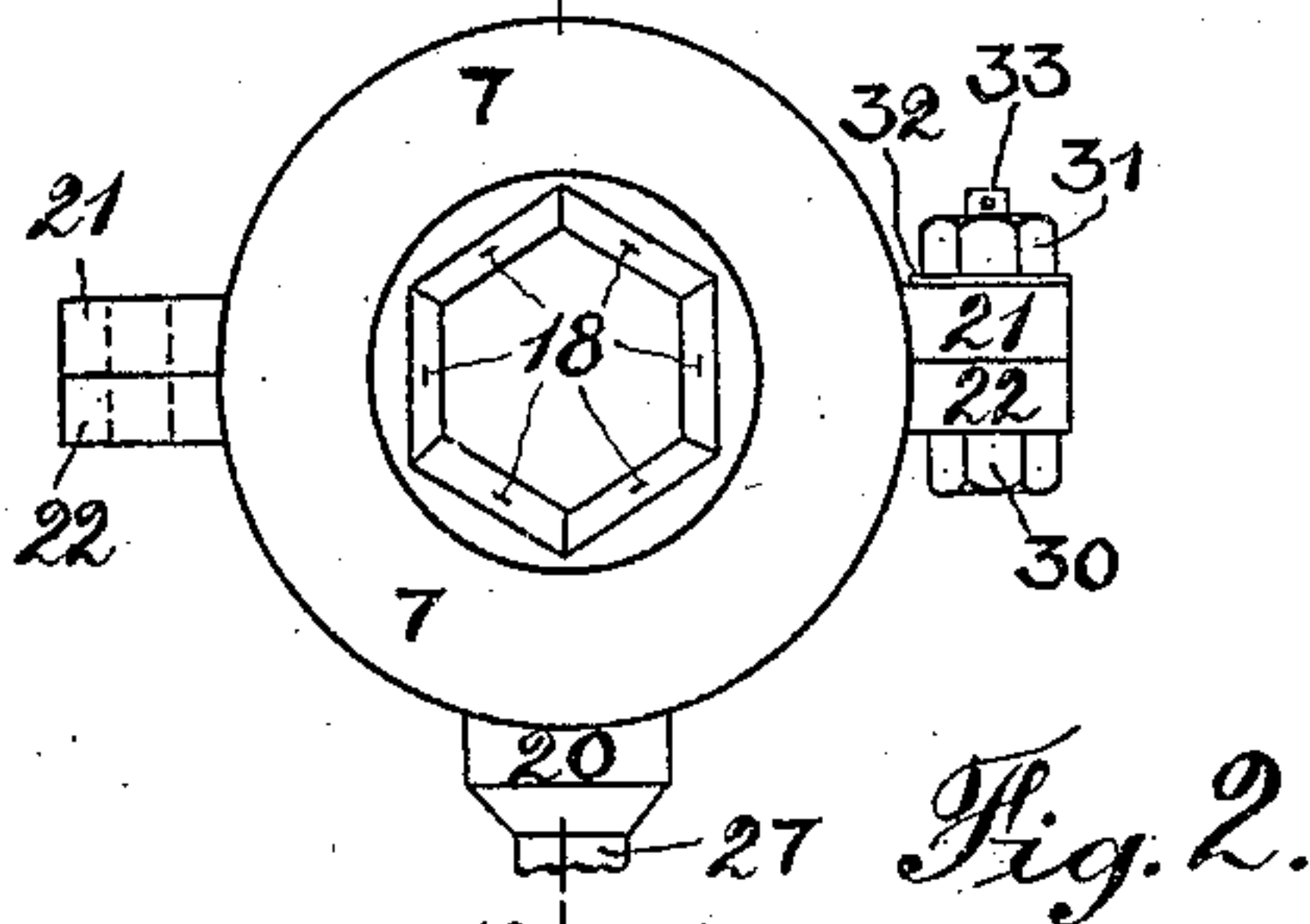
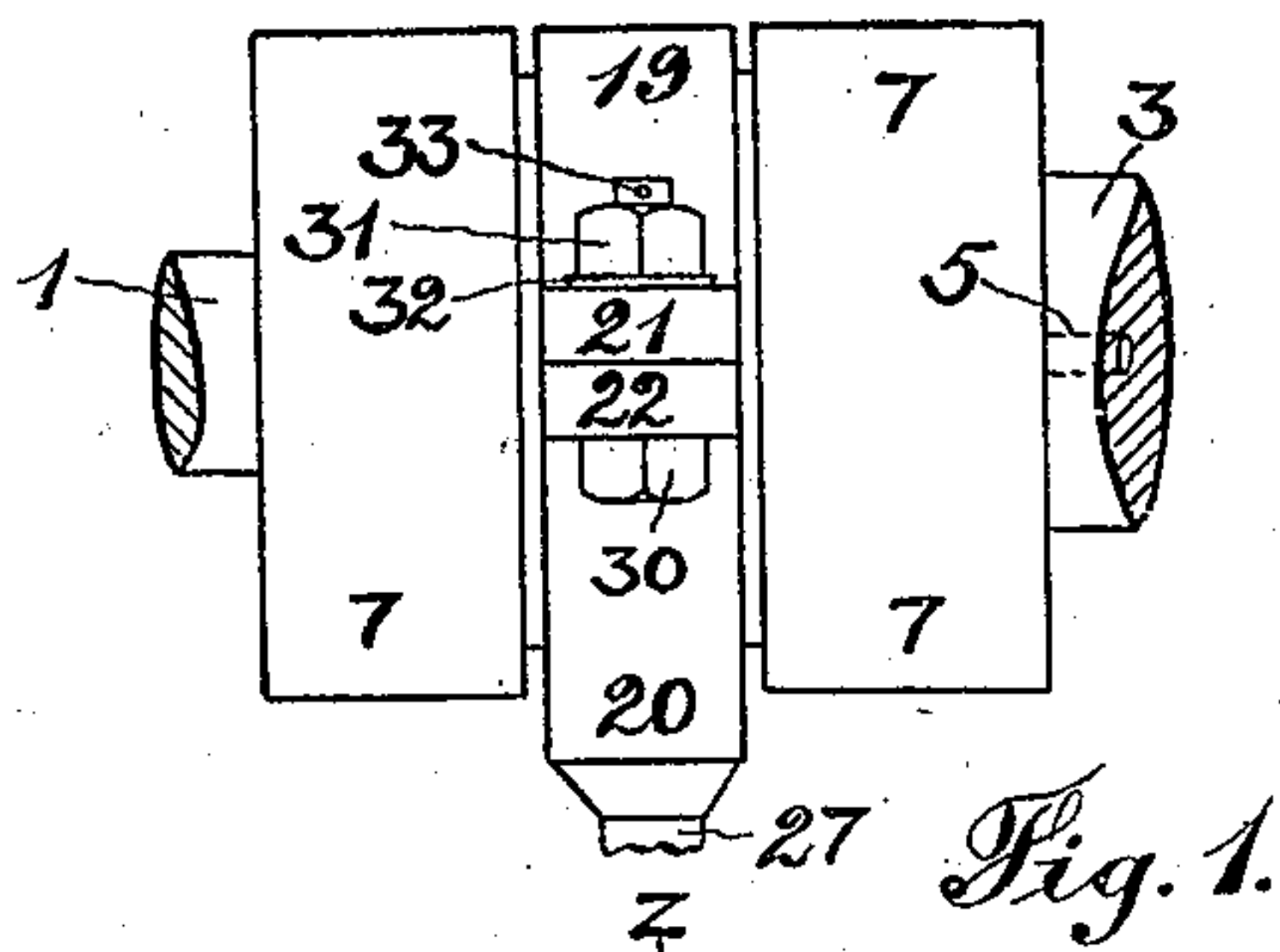


No. 842,598.

PATENTED JAN. 29, 1907.

E. M. WESTON.
DEVICE FOR USE WITH ROCK DRILLING MACHINES.
APPLICATION FILED OCT. 30, 1906.



Witnesses:

H. K. B. Miller

[Signature]

Inventor:
Eustace Moriarty Weston
by *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

EUSTACE MORIARTY WESTON, OF JOHANNESBURG, TRANSVAAL.

DEVICE FOR USE WITH ROCK-DRILLING MACHINES.

No. 842,598.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed October 30, 1905. Serial No. 285,187.

To all whom it may concern:

Be it known that I, EUSTACE MORIARTY WESTON, a subject of the King of Great Britain, residing at Johannesburg, Transvaal, have invented certain new and useful Improvements in Devices for Use with Rock-Drilling Machines for Supplying Water to the Holes While Being Drilled, of which the following is a specification.

10 This invention relates to means or contrivances intended to be employed with rock-drills or rock-drilling machines for providing either a continuous or intermittent supply of water to the holes as they are being drilled, 15 with the primary object of preventing the dust produced in the operation of drilling from escaping and being disseminated in the surrounding atmosphere.

20 The invention has reference more particularly to an apparatus of the kind described and claimed in a prior application for United States patent filed by the present applicant on the 1st day of August, 1905, and bearing Serial No. 272,205, or to an apparatus in 25 which a cylinder which encircles a portion of the drill steel or shank of the drill or bit is provided, said cylinder being adapted to rotate with the drill or bit, in combination with a ring revolubly mounted on said cylinder, 30 which ring serves for conveying the water to a chamber, from which it enters the drill-steel and along which latter it flows to or in the vicinity of the cutting end of the drill or bit. The apparatus may be utilized with the best 35 results in the drilling of holes inclined in an upward direction.

40 A further advantage of the invention lies in the fact that the water introduced into the hole washes out the detached particles of rock and keeps the hole clear, so that the efficiency of the tool is increased.

45 To simplify the detailed description of my present improvements, I append a sheet of drawings illustrative thereof, which drawings are marked with numerals of reference corresponding to the following description.

In the several figures of the drawings like parts are designated by like numerals of reference.

50 Figure 1 is a side elevation of a portion of the drill-steel, illustrating a modification. Fig. 2 is an end elevation of Fig. 1 with the drill-steel removed. Fig. 3 is a section of Fig. 2 on line *z z* with the drill steel or bit in 55 position. Fig. 4 is a cross-section taken through the water-ring and radial ports,

showing the hexagonal shape of the hole through the cylinder.

Referring now to the construction illustrated in Figs. 1 to 3, the shank or rear end 60 of the drill or bit is made with a tapered part 3 of hexagonal section and a rear portion 1, which is adapted to fit or be projected into the chuck, and with an annular recess 2 in the tapered portion 3, which forms the water- 65 space with which the transverse holes 6 communicate, placing said water-space in communication with the longitudinal hole 5. It will be evident that the tapered portion 3 of the drill or bit may be made octagonal or 70 of any other suitable polygonal section. The cylinder 7, which surrounds the tapered portion 3 of the drill or bit, is bored out or fashioned internally to correspond to the shape of said tapered portion 3—that is to 75 say, if said tapered portion 3 is made hexagonal, as shown, the bore of the cylinder 7 is also made hexagonal and correspondingly tapered. The ends of the bore are cham- 80 fered or beveled off, as indicated at 28, to prevent their burring up with the repeated insertion therein of the drills or bits. The cylinder 7 is formed with an annular recess 29 and in the sides of said recess 29 with the 85 annular grooves 15, in which latter are located the resilient packing-rings 17. The water-ring, as shown in Figs. 1 and 2, is made in halves 19 20 and constructed with the lugs 21 22, through which the halves are bolted to- 90 gether by the bolts 30 and nuts 31. 33 are the split pins which serve for keeping the nuts 31 on the bolts, and 32 are preferably spring-washers surrounding the bolts 30 be- 95 neath the nuts 31. The ring at one side, as seen in Fig. 3, is formed with an annular groove or recess 34, which fits over the re- 100 silient packing-ring 17 and serves to make a better joint between the ring and cylinder 7. The ring is constructed with the recess 26, which serves for placing one of the radial 105 ports or passages 18, formed in the cylinder 7, in communication with the water-supply, so that the water may enter the space 2 round the drill or bit and pass from the lat- 110 ter through the transverse and longitudinal holes 6 5 to the cutting extremity thereof. The manner in which this arrangement operates will be readily understood from the description, taken in connection with Figs. 1 to 3. In this case the cylinder 7 tends to

What I claim as my invention, and desire to protect by Letters Patent, is—

1. In apparatus of the nature specified, the combination with a drill-steel formed with an external annular recess and with a longitudinal hole terminating at or in proximity to the cutting end and with a transverse hole placing the longitudinal hole in communication with said recess, of a cylinder encircling the recess and non-rotatably carried by the drill-steel and formed with a plurality of radial ports communicating with the recess in the drill-steel, a water-ring revolvably mounted on the cylinder, said water-ring being formed with an internal recess which serves for conducting water to one of the radial ports as the cylinder rotates in the water-ring, and means for conducting water to the recess in the water-ring, as and for the purposes set forth.

2. In apparatus of the nature specified, the combination with a drill-steel made taper for a portion of its length, said tapered portion being of polygonal transverse section, and with an annular recess in said tapered portion, and with a longitudinal hole at one end terminating at or in proximity to the cutting end of the bit and at the other end with a transverse hole communicating with

the annular recess, a cylinder, the bore of which is made of corresponding taper and of corresponding polygonal transverse section, which cylinder incloses the annular recess in the bit and is non-rotatably carried by the bit, the cylinder being constructed with an external annular recess and with a plurality of radial ports placing said recess in communication with the annular recess in the bit and with grooves in the sides of the external annular recess, a water-ring made in halves detachably connected, said water-ring being rotatably mounted in the external recess in the cylinder and constructed with an internal recess which serves for conducting water to one of the radial ports in the cylinder and with a port for conducting water to said recess, packings located in the grooves in the sides of the external annular recess for making a water-tight joint between the cylinder and water-ring, as and for the purposes set forth.

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

EUSTACE MORIARTY WESTON.

Witnesses:

W. LAUD,

TOM FROST.