

(No Model.)

P. J. HOENSCHIED.
SELF OILING DRILL.

No. 580,399.

Patented Apr. 13, 1897.

Fig. 1.

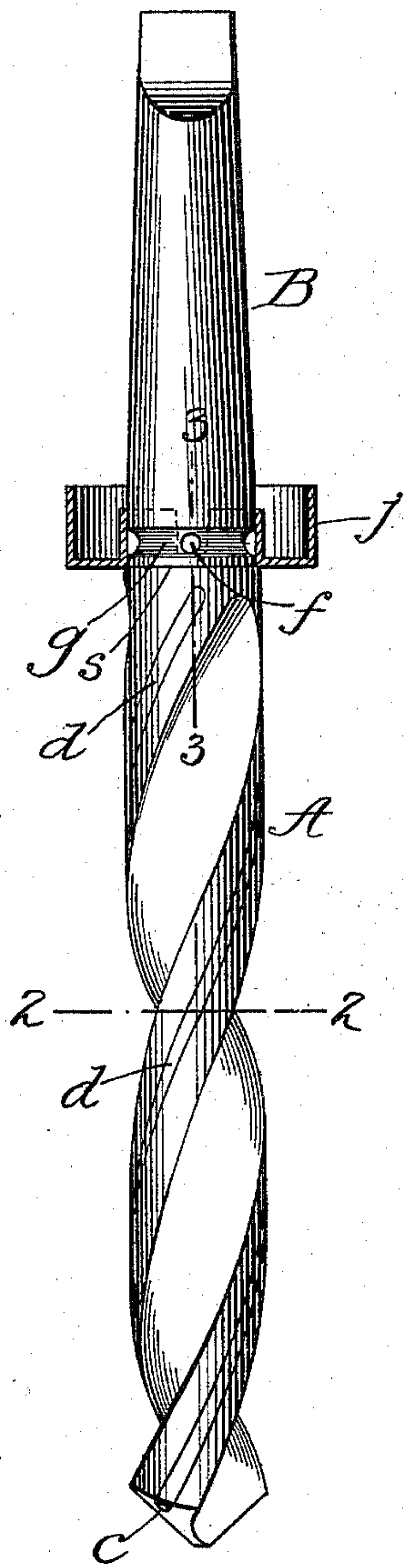


Fig. 2.

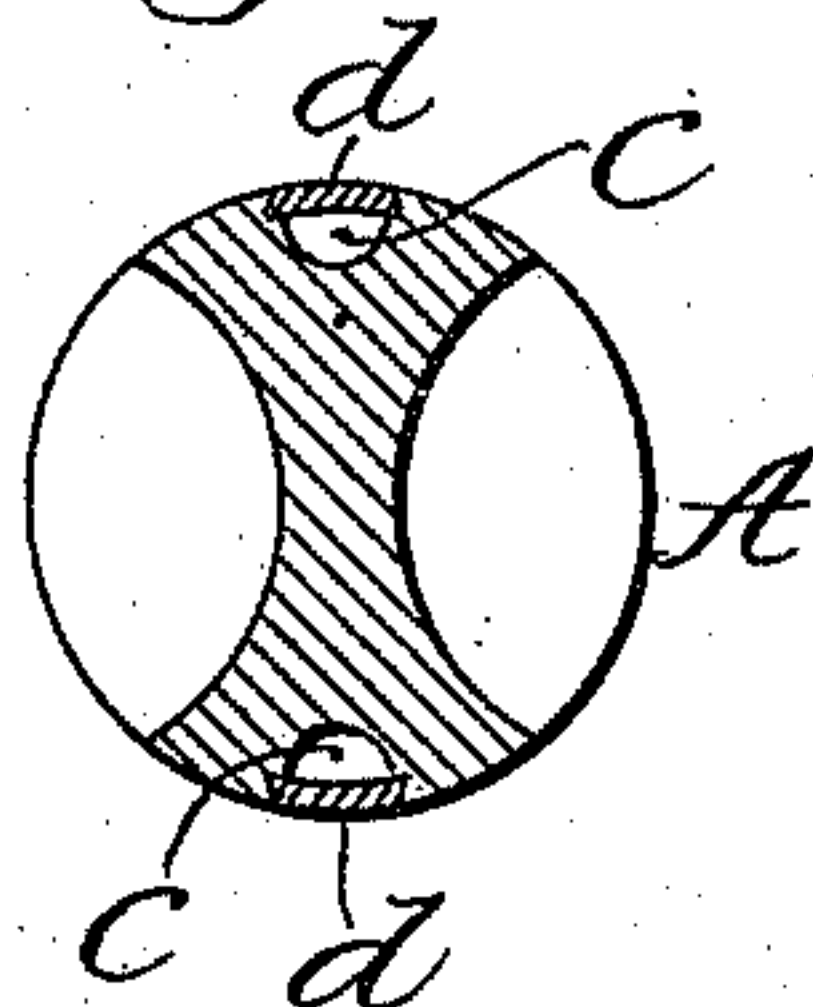


Fig. 3.

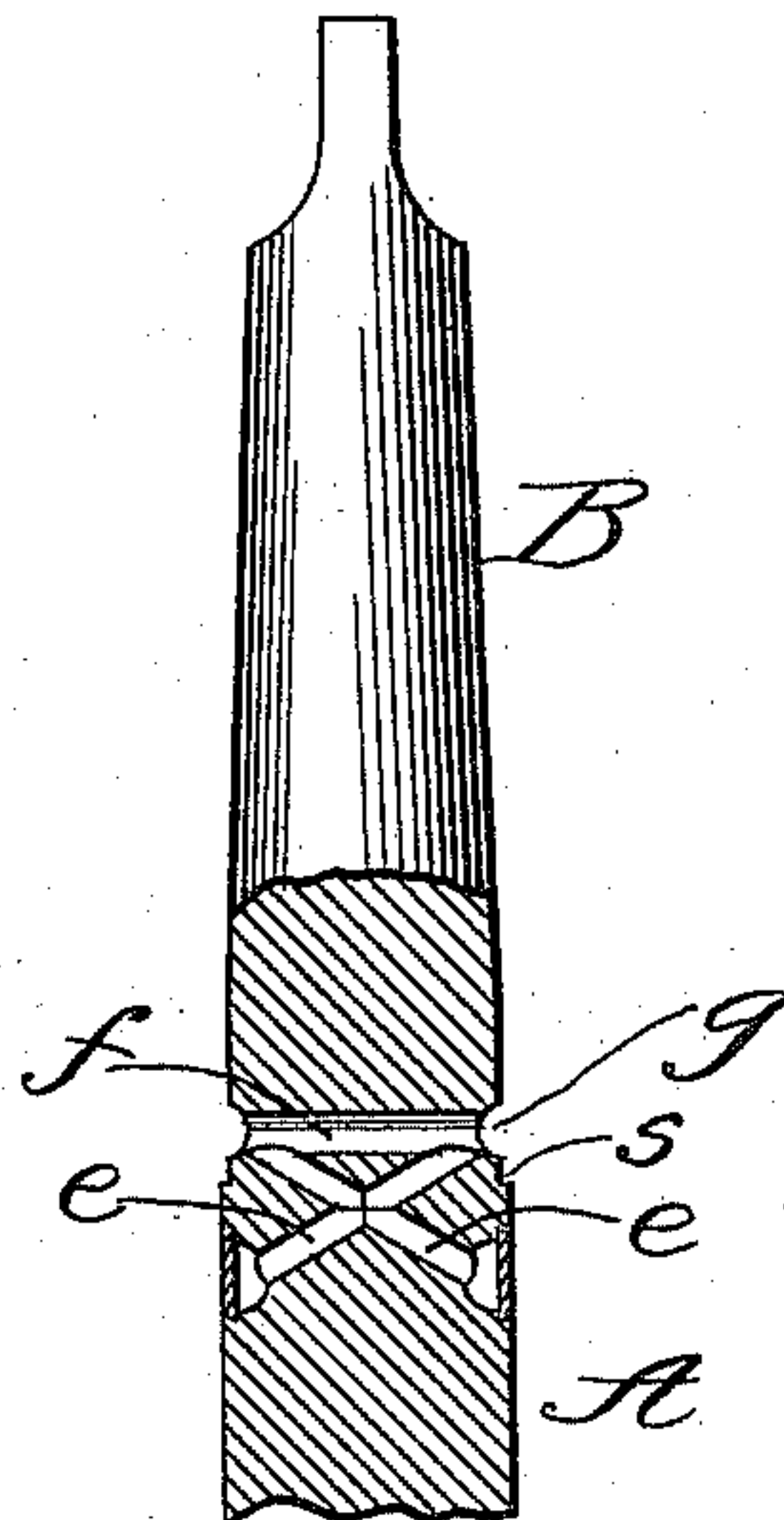


Fig. 4.

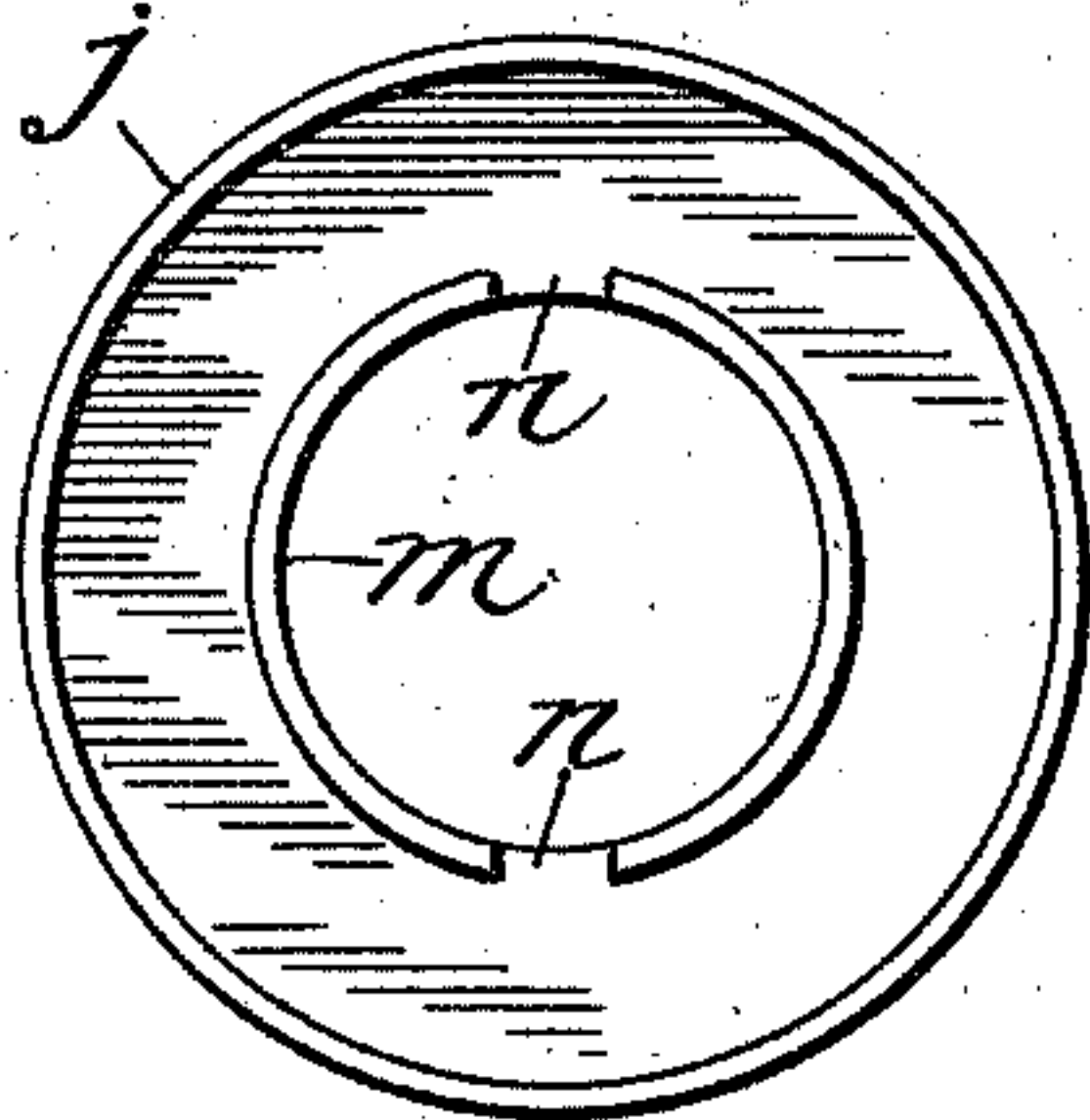
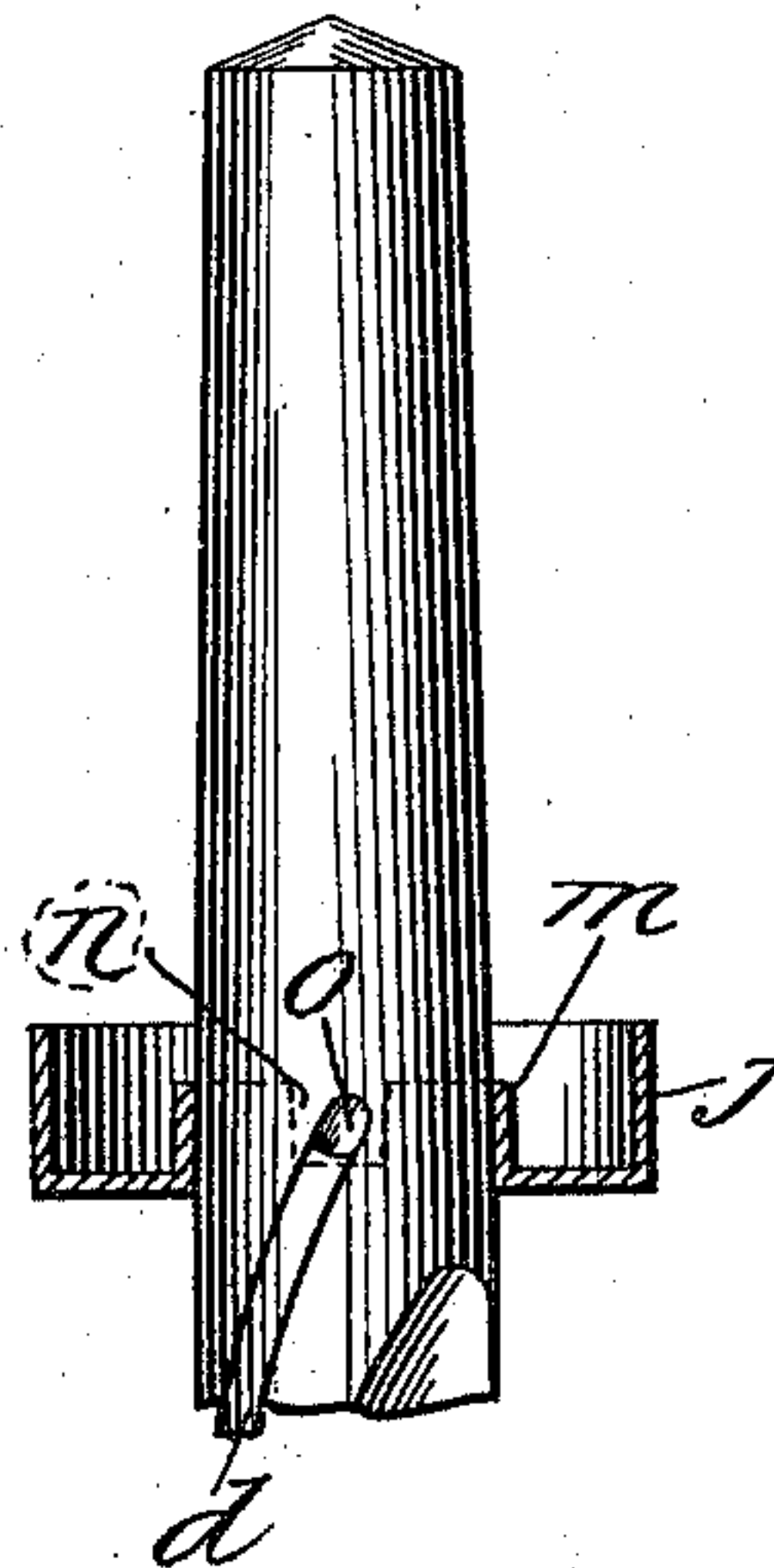


Fig. 5.



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SELF-OILING DRILL.

SPECIFICATION forming part of Letters Patent No. 580,399, dated April 13, 1897.

Application filed January 4, 1897. Serial No. 617,909. (No model.)

To all whom it may concern:

Be it known that I, PETER J. HOENSCHIED, a citizen of the United States, residing in the city of Akron, county of Summit, and State of Ohio, have invented a certain new and useful Improvement in Self-Oiling Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to self-oiling drills; and its object is to provide a drill having an oil-conduit leading to the working point, with economical and convenient means of supplying oil to that conduit.

The invention consists in the combination, with such a drill, of a cup surrounding the drill-shank and revolving with the drill and supplying oil to the conduit.

The drawings show my invention embodied in the best form at present known to me.

Figure 1 is an elevation of a complete drill containing the invention. Fig. 2 is a transverse section on the line 2 2 of Fig. 1, showing the oil-conduit. Fig. 3 is a view of the drill-shank, being taken at right angles to Fig. 1 and its lower portion being a section on the line 3 3 of Fig. 1. Fig. 4 is a plan of the oil-cup. Fig. 5 is an elevation showing the oil-cup applied to a form of drill-shank preferable in certain cases.

Similar reference-letters designate similar parts in each figure.

A is a twist-drill having a shank B, which may be cylindrical or tapered or formed in other suitable manner. Carried by the body of the drill is the oil-conduit, which I form by making a groove *c* therein and covering the outside of the same in any suitable manner by a strip of metal *d*, preferably brass. The grooves *c* (preferably two in number) may terminate in the diagonal tubular holes *e*. (Shown in Fig. 3.) Such holes continue the conduit from the surface grooves to the transverse hole *f*, extending through the drill and communicating at each end with the annular groove *g*. Thus oil supplied to this annular groove will flow through the holes *f* and *e* and the grooves *c* and reach the working point of the drill.

Oil is supplied to the drill by a cup *j*, surrounding the drill and rotating with it. This

cup is slipped in place over the end of the drill and may rest on a shoulder *s* on the drill-shank. The cup has an inner flange *m*, which closely embraces the shank. Notches *n* in this flange allow oil carried by the cup to flow into the groove *g*. Oil may be supplied to the cup by a continuous drip or in other manner, as desired.

The construction of drill and cup just described I consider preferable in the larger sizes of drills. It does not require the oil-cup being placed with its notches in any absolute position with reference to the entrance to the conduit, and the drill is adapted to receive in place of the cup the oil-collar shown and described in my application filed October 7, 1896, Serial No. 608,140. I do not in this application specifically claim the combination of the holes *e* and *f* and the groove *g*, but reserve that to the application above referred to. In small drills, however, where it is not desirable to make the holes *e* and *f* in the shank, I supply the oil directly to the surface grooves from the cup. Such construction is shown in Fig. 5. Here the strip *d* does not reach the top of the grooves, and hence leaves an opening *o* into the latter. The cup is fitted on the shank with its notches *n* directly opposite these openings into the grooves. The shank shown in Fig. 5 is tapered in the neighborhood of the upper end of the grooves, and the rotating cup is thereby securely held in place without the necessity of the shoulders *s*. This construction has the advantage that the supply of oil to the conduit may be regulated by turning the cup slightly about the drill-shank, thus causing the flange *m* to cover the opening *o* to a greater or less extent. Should it be deemed advantageous to waive this regulation in favor of construction not requiring an absolute position of the cup, an annular groove may be made on the inner surface of the flange *m* and thus cooperate with the openings *o*. Such annular groove may also be substituted for the groove *g*, if desired, in the construction hereinbefore described, the hole *f* in that case continuing to the cylindrical surface of the shank.

Having thus described my invention, what I claim is—

1. A drill having an oil-conduit inclosed

within the drill leading from the periphery of its shank to or near to the working point, in combination with a cup fitting over and surrounding the drill-shank revolving with it and
5 supplying oil to the conduit, for the purpose specified.

2. A drill having an oil-conduit leading from the periphery of its shank to or near to the working point, in combination with a cup
10 revolving with the drill and having a vertical flange embracing the shank, there being a notch in said flange through which oil carried by said cup may pass to said conduit, substantially as described.

15 3. A drill having an oil-conduit consisting of a groove extending from the shank to or

near to the working point and a strip covering said groove but leaving an opening there-
into on the surface of the shank, in combina-
tion with an oil-cup surrounding said drill 20
and having a flange embracing the shank, there being a notch in said shank coöperating with the opening into the conduit, whereby the supply of oil from the cup to the conduit may be regulated by changing the presenta- 25
tion of the cup to the drill, substantially as described.

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Witnesses:

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