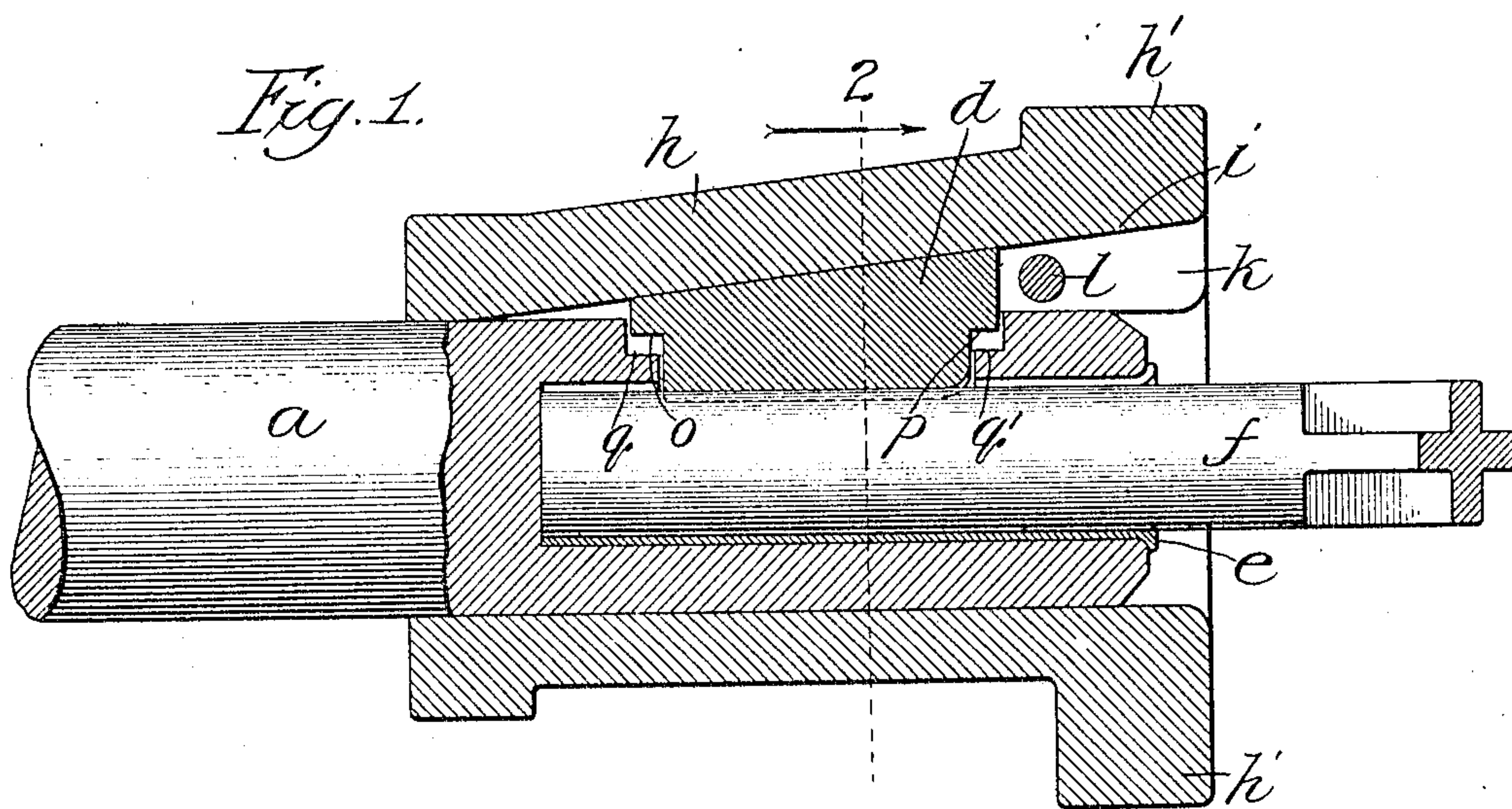
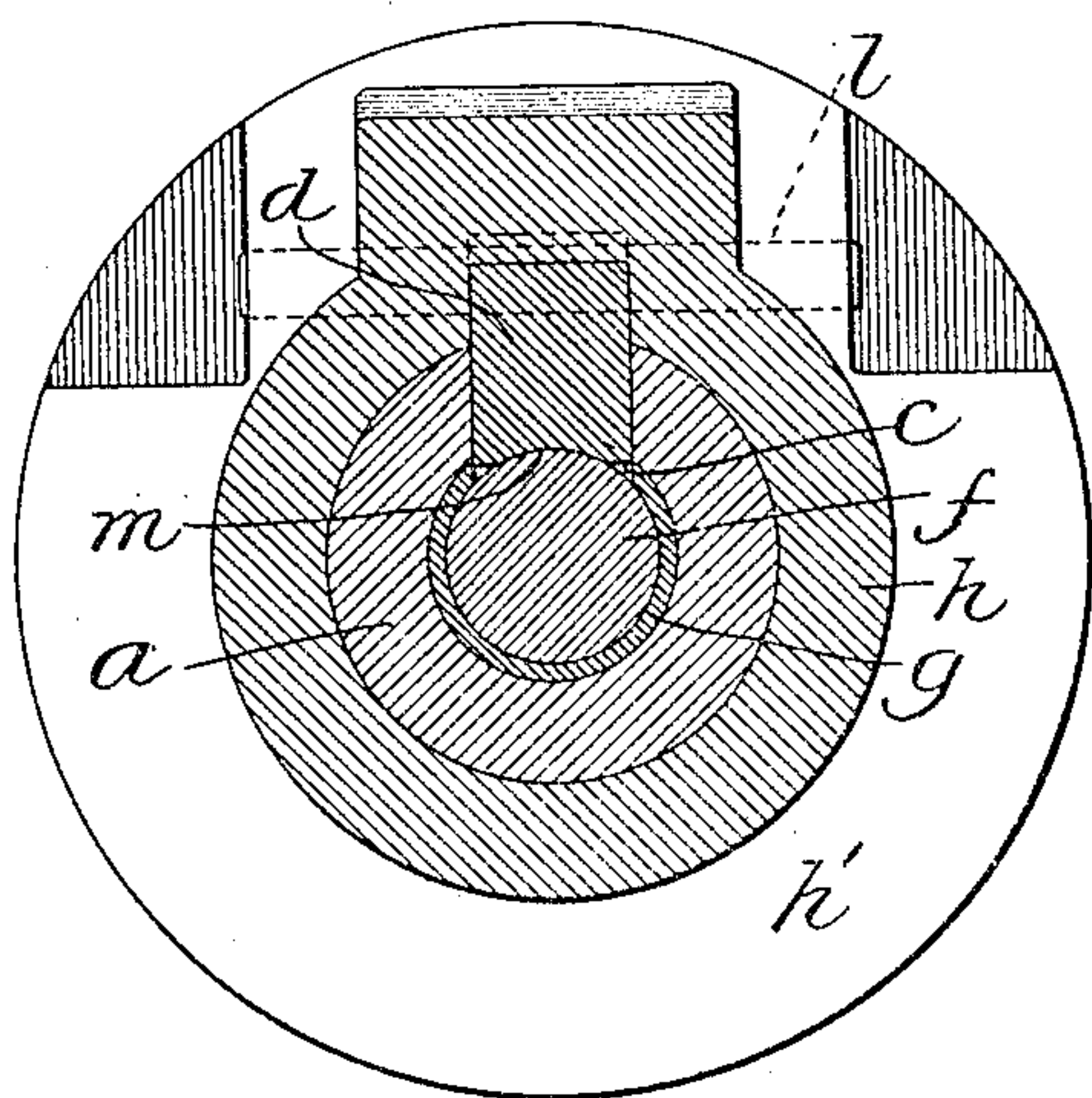


R. TEMPLE.  
DRILL CHUCK.

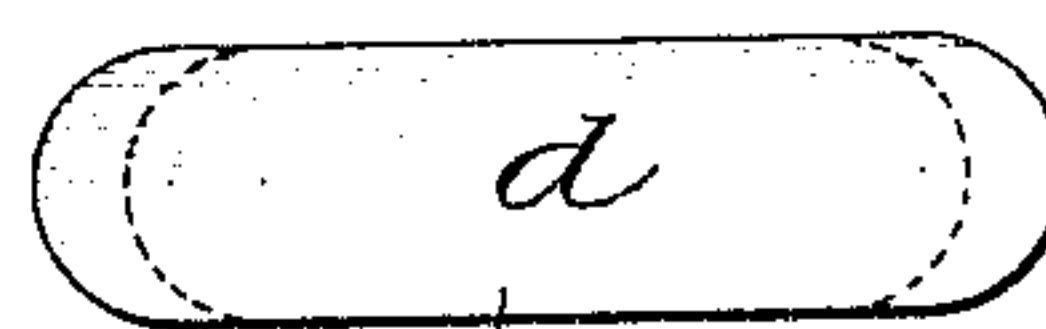
APPLICATION FILED APR. 24, 1906.



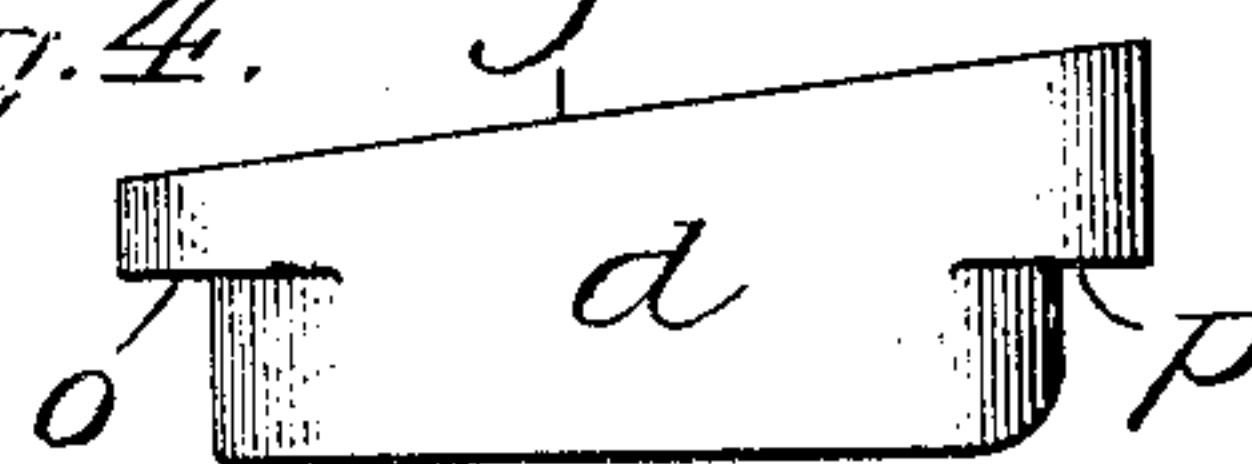
*Fig. 2.*



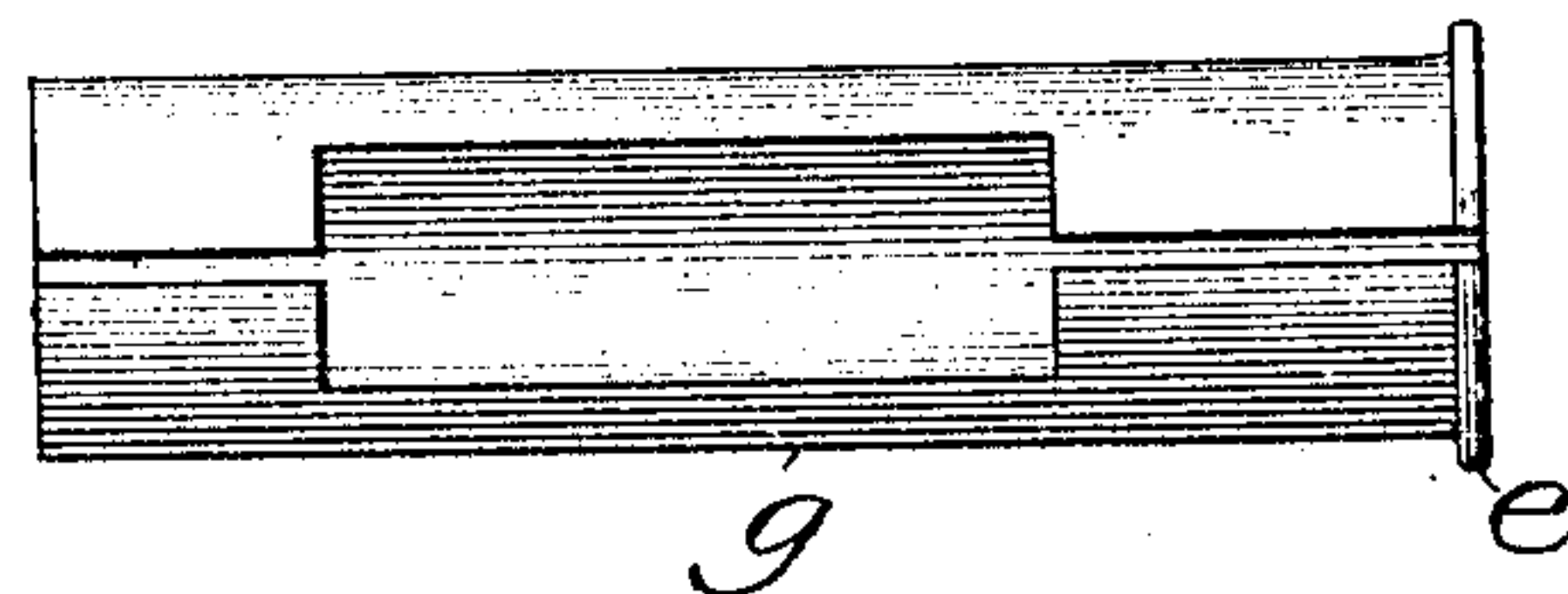
*Fig. 3.*



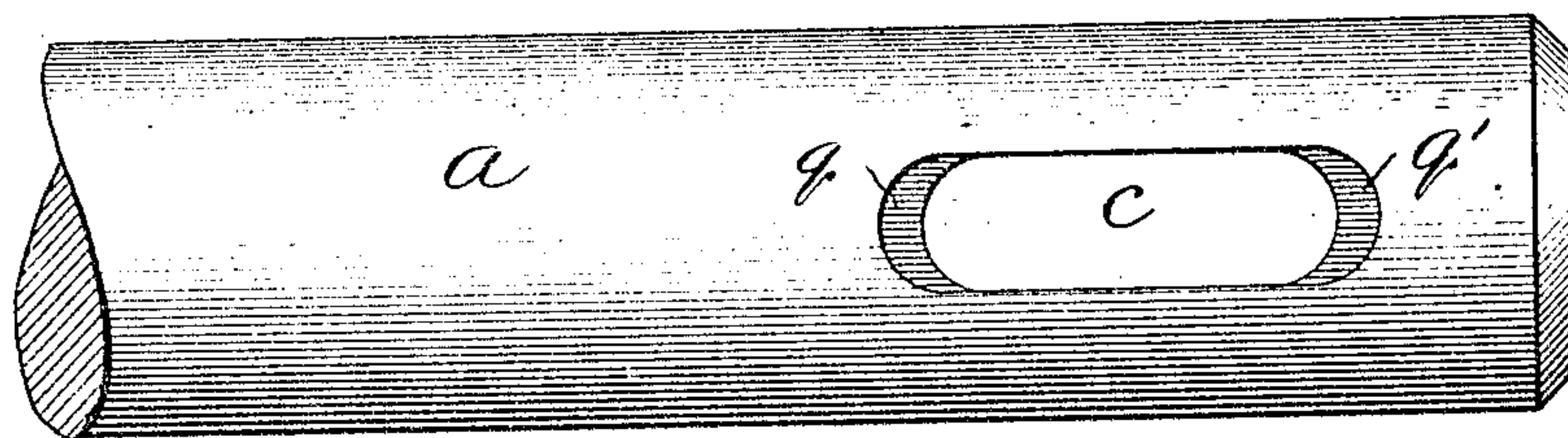
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE

ROBERT TEMPLE, OF DENVER, COLORADO.

## DRILL-CHUCK.

No. 844,631.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed April 24, 1906. Serial No. 313,441.

*To all whom it may concern:*

Be it known that I, ROBERT TEMPLE, a citizen of the United States, residing in the city and county of Denver, State of Colorado, have invented certain new and useful Improvements in Drill-Chucks, of which the following is a specification.

My invention relates to drill-chucks, and has for its object to provide a simple, economical, and efficient drill-chuck.

To this end my invention consists in the combinations and details hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation of a chuck constructed in accordance with my invention, showing the tool in operative position. Fig. 2 is a transverse sectional view on the line 2 of Fig. 1 looking in the direction of the arrow. Fig. 3 is a top plan view of the key. Fig. 4 is a side elevation of the key. Fig. 5 is a top plan view of the bushing. Fig. 6 is a top plan view of the socket member.

In the drawings, *a* indicates a drill-piston or socket member having a central or axial bore for receiving the tool. A lateral opening *c* communicates with this axial bore and extends out through the side wall of the socket member for receiving a key *d*. A bushing *e* may be interposed between the tool *f* and the walls of the axial opening or bore of the socket member, and this bushing is also provided with a longitudinal opening *g*, through which the inner edge of the key *d* extends.

A chuck-collar *h* is slidably mounted on the drill-piston or socket member of the chuck, such collar being provided with an annular bore adapted to circumferentially engage the socket portion. The inner face of the collar is provided with a wedge-shaped longitudinal recessed portion, having an upper inclined wall *i*, which extends in the direction of the length of the collar and parallel side walls *k*. The wedge-shaped key *d* is supported between the parallel side walls of the recessed portion of the collar and has its upper inclined face engaging the inclined wall of the recessed portion, the inclined face of the key being indicated at *j*.

A pin *l* is mounted in suitable perforations in the collar and extends transversely thereof across the wedge-shaped recess thereof in position to engage the outer end of the key, and thereby limit the movement of the collar in a releasing direction, thus permitting the col-

lar to be tightened upon the key and the key pressed into engagement with the tool by the downward or forward movement of the collar and preventing the accidental releasing of the parts. The key is provided with a concave inner edge portion *m*, which is adapted to frictionally engage the adjacent side of the tool and hold it securely in operative position when the key is pressed against the tool by the movement of the chuck-collar in a downward direction or toward the open end of the socket member. Shoulder portions *o* and *p* are provided at the ends of the key, these shoulder portions being adapted to engage corresponding shoulder portions *q* *q'* in the socket member, so as to prevent the key from dropping through the lateral opening in the socket member, when the tool is removed. The chuck-collar is of such length that its outer end extends beyond the outer end of the socket portion when the parts are in both operative or inoperative position, thus forming a protection for the end of the socket portion and preventing injury thereto by accidental blows when securing the tool in place.

In order to conveniently force the chuck-collar into engaging position, I provide its outer end with a flange *h'*, adapted to receive the blows of a hammer to force the parts into locking engagement. By this arrangement it will be seen that in order to mount the tool in the chuck it is only necessary to move the chuck-collar rearward or in a releasing direction away from the open end of the socket member, insert the key and tool, and slip the collar forward or toward the open end of the socket member, then insert and secure the pin in position slightly in advance of the outer end of the key, as shown in Fig. 1. When the members are in this position, it will be seen that the use of the chuck in actual practice will cause the tapered portion of the collar to impinge more tightly against the similar inclined or tapered portion of the wedge-shaped key, and thus more securely fasten the tool in position as the chuck is reciprocated.

I claim—

1. A drill-chuck comprising a socket member provided with a longitudinal bore for receiving the tool, a sliding collar mounted on the socket member said collar being provided at one end with an outwardly-extending circumferential flange, and means engaged by the collar and the tool to secure the tool in



operative position, the flanged end of the collar extending beyond the tool-receiving end of the socket member.

2. A drill-chuck comprising a tool-receiving socket member, a sliding collar mounted on the socket member said collar having an outwardly-turned flanged portion extending beyond the tool-receiving end of the socket member, and means engaged by the collar and the tool to lock the tool in place.

3. A drill-chuck comprising a socket member provided with a longitudinal bore for receiving the tool, and with a lateral opening communicating with the bore, the end walls of this opening being shouldered as described, a sliding collar surrounding the socket member said collar having at one end an outwardly-extending flange beyond the end of the socket member said collar also provided with a longitudinally - extending wedge-shaped recess on its inner face, and a shouldered key resting in the lateral opening of the socket having one face engaging the tool-shank and the opposite face inclined to coact with the wedge-shaped portion of the collar, substantially as described.

4. In a drill-chuck, the combination of a socket member provided with an opening for receiving a tool and having a lateral opening communicating with such tool-receiving opening for receiving a securing-key, a key mounted in such lateral opening, and a movable collar member mounted upon such socket member having an inner surface portion in engagement with such key and provided with securing means movable into engagement with the key for positively limiting the movement of the collar in a releasing direction.

5. In a drill-chuck, the combination of a socket member provided with an opening for receiving a tool and having a lateral opening communicating with such tool-receiving opening for receiving a securing-key, a key mounted in such lateral opening, and a movable collar member mounted upon such

socket member having an inner surface portion in engagement with the key, and a pin mounted in such collar movable into engagement with such key for positively limiting the movement of the collar in a releasing direction.

6. In a drill-chuck, the combination of a socket member provided with a central opening for receiving a tool and having a lateral opening communicating with such central opening for receiving a securing-key, a key mounted in such lateral opening and having an outer edge extending laterally and in the direction of the open end of the socket portion at an incline, a collar slidably mounted upon such socket member and having an inclined inner surface portion in engagement with the inclined surface portion of such key, and a pin mounted in such collar and movable into engagement with the outer end of the key for limiting the movement of the collar in a releasing direction.

7. In a drill-chuck, the combination of a socket member provided with a central opening for receiving a tool and having a lateral opening communicating with such central opening for receiving a securing-key, a key mounted in such lateral opening and having an outer edge extending laterally and in the direction of the open end of the socket portion at an incline, a collar mounted upon such socket member having an annular wall portion in sliding engagement with such socket member and an inclined inner wall portion in engagement with the inclined surface portion of such key, and a pin mounted in such collar between the inner inclined wall portion and the annular inner wall portion thereof and movable into engagement with the outer end of the key for limiting the movement of the collar in a releasing direction.

ROBERT TEMPLE.

Witnesses:

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