

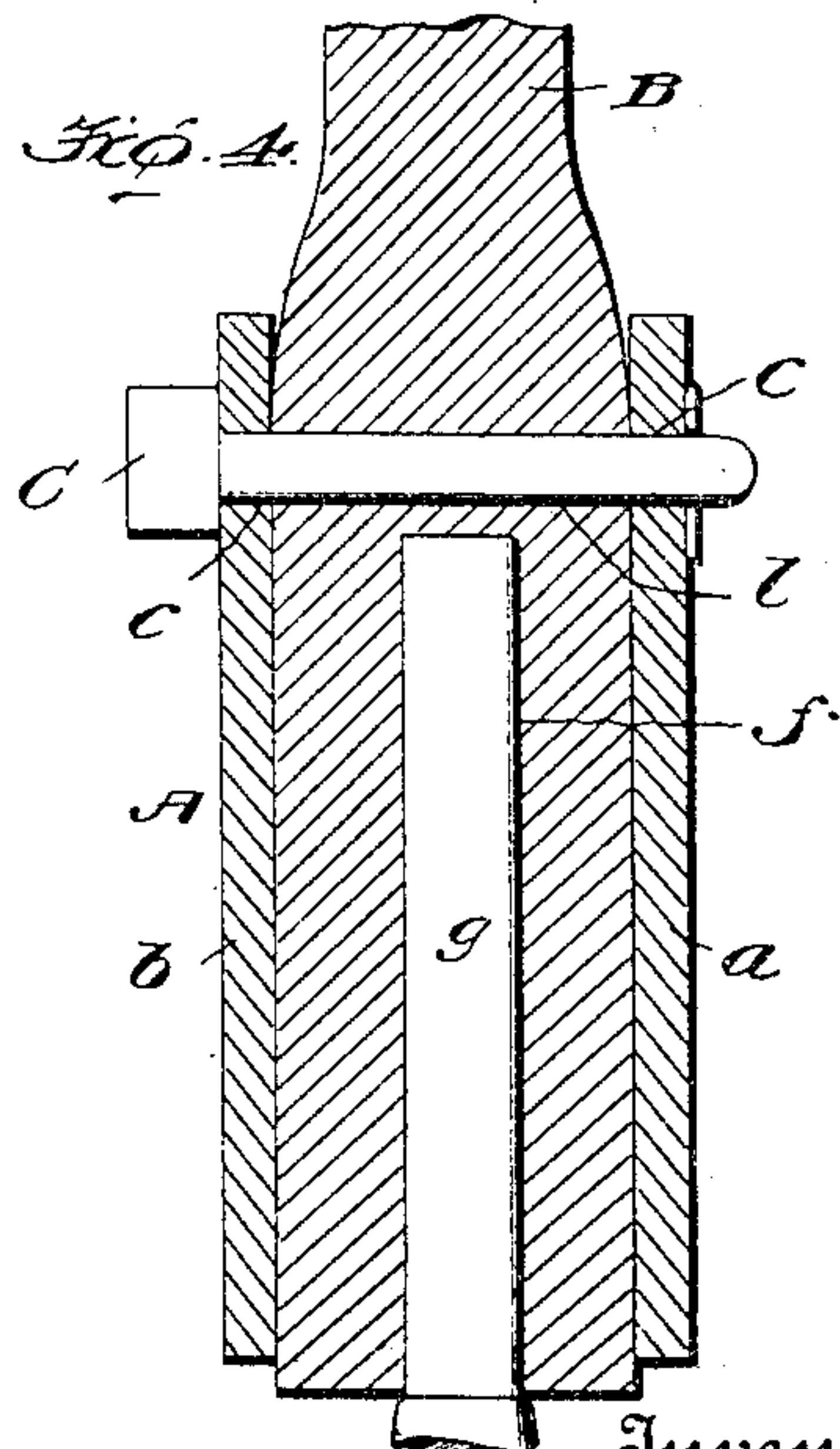
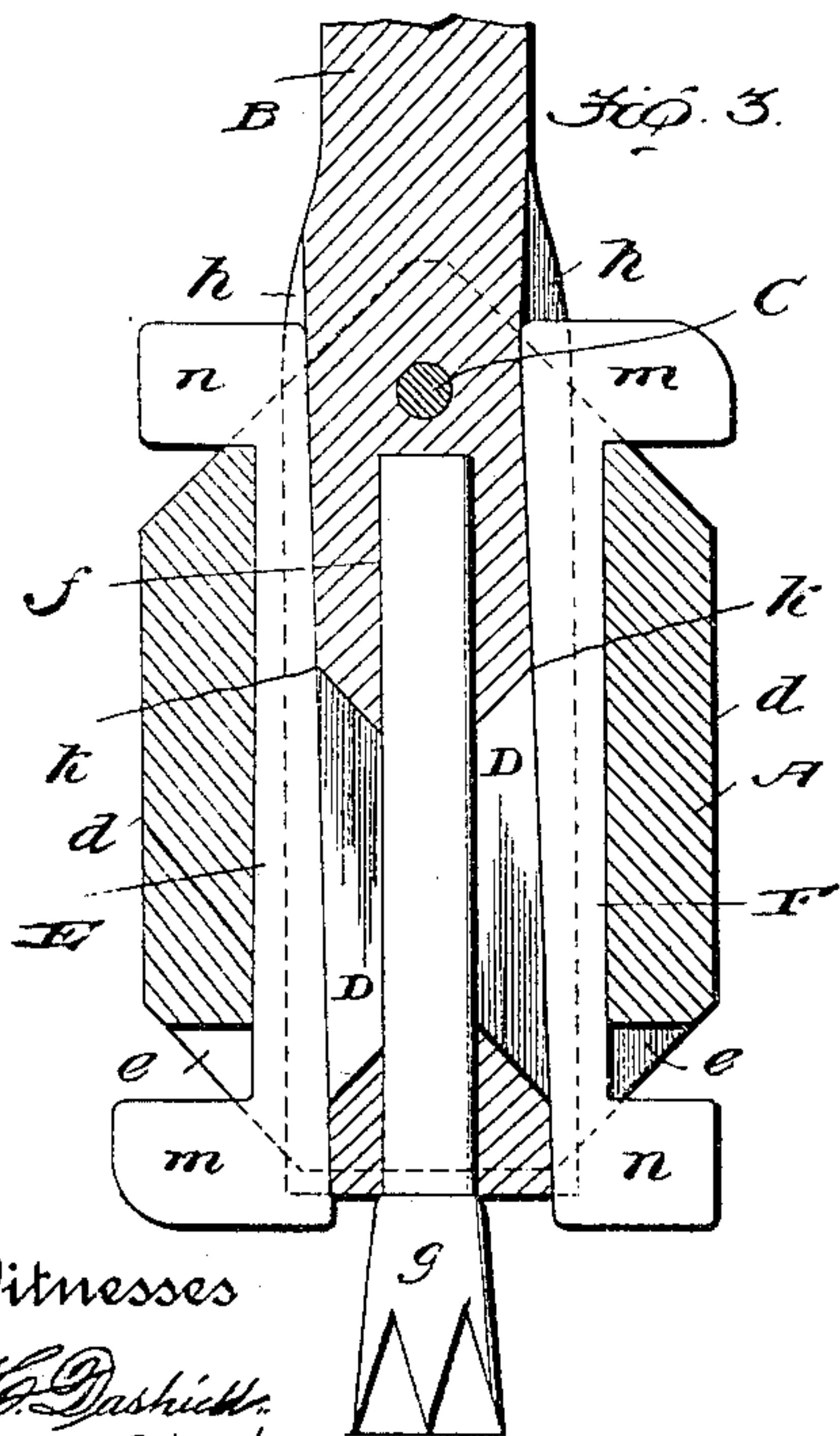
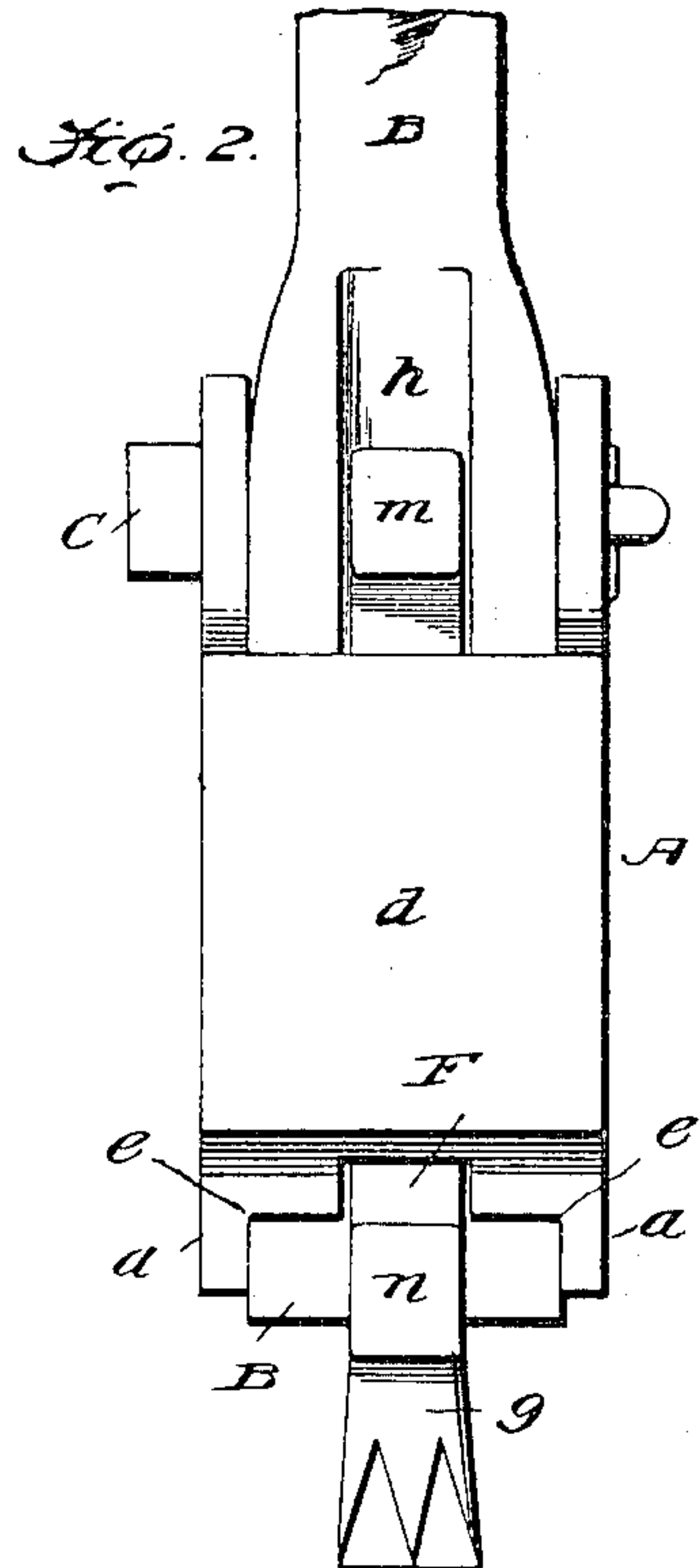
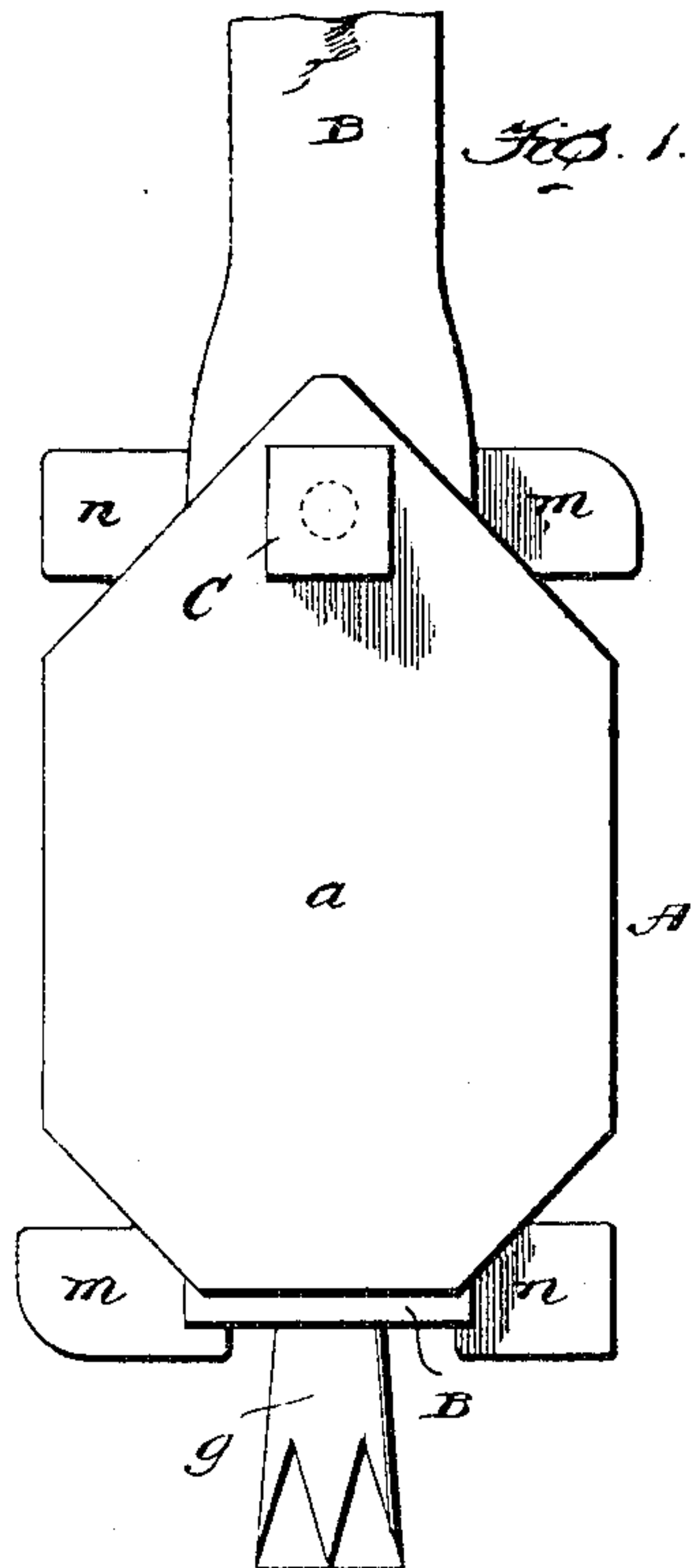
No. 818,687.

PATENTED APR. 24, 1906.

J. S. HARRIS & J. R. HOSKIN.

ROCK DRILL CHUCK.

APPLICATION FILED MAR. 3, 1906.



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# UNITED STATES PATENT OFFICE.

JAMES S. HARRIS AND JOHN R. HOSKIN, OF CENTRAL CITY, COLORADO.

## ROCK-DRILL CHUCK.

No. 818,687.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed March 3, 1906. Serial No. 303,976.

*To all whom it may concern:*

Be it known that we, JAMES S. HARRIS and JOHN R. HOSKIN, citizens of the United States, residing at Central City, in the county of Gilpin and State of Colorado, have invented new and useful Improvements in Rock-Drill Chucks, of which the following is a specification.

Our invention pertains to rock-drill chucks; and it contemplates the provision of a chuck which is adapted to securely hold a bit against casual release and yet may be expeditiously and easily adjusted to release the bit when it is desired so to do and one which is constructed especially with a view to withstanding the shocks and rough usage to which rock-drill chucks are ordinarily subjected.

With the foregoing in mind the invention will be fully understood from the following description and claims when the same are read in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the chuck constituting the present and preferred embodiment of our invention, the same being illustrated as holding a bit. Fig. 2 is an elevation of the chuck, taken at right angles to Fig. 1. Fig. 3 is a vertical section of the chuck, taken at right angles to Fig. 2. Fig. 4 is a vertical section taken at right angles to Fig. 3. Fig. 5 is a transverse section of one of the friction shoes or gibs removed.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is the case of our novel chuck. The said case is preferably formed in one piece of metal and comprises front and back walls *a* and *b*, having aligned apertures *c* in their upper portions, and side walls *d*, having notches *e* in their lower ends, for a purpose which will presently appear.

B is the rod of the chuck. This rod B is provided with a bore *f* to receive the bit *g*, and it is also provided in its opposite sides with longitudinal ways or grooves *h*, which are connected, through slots *k*, with the bore *f*, as best shown in Fig. 3. Said rod B is further provided with an aperture *l*, which is designed, in connection with the aperture *c* in the front and back walls of the case A, to receive the pin C, by which the rod B is fastened in the case A.

D D are friction-shoes loosely arranged in

the slots *k* of rod B and having their ends beveled to correspond with the beveled ends of said slots and also having their inner sides concave in cross-section, Fig. 5, to enable them to better grip the bit *g*, and E and F are taper keys which rest in the ways or grooves *h* in the rod B and are slidable between the bottom walls of said grooves *h* and the adjacent sides *d* of the case A. The said taper keys are provided on their outer sides at their opposite ends with enlargements *m n*, which are designed to bring up against the ends of the case-walls *d* and in that way prevent separation of the taper keys from the remainder of the device. Now it will be observed by reference to Fig. 3 that the way or groove *h* at one side of the rod B is gradually increased in depth from its lower end to its upper end, while the way or groove *h* at the opposite side of rod B is gradually increased in depth from its upper end to its lower end, also that the taper keys E and F are reversely arranged. From this it follows that when the key E is driven downwardly it will press its complementary friction shoe or gib against the bit *g*, and when the key F is driven upwardly it will perform a similar function with reference to its complementary friction shoe or gib and the bit; also, that when the key E is hammered up and the key F is hammered down pressure on the friction shoes or gibs D is relieved, and hence the bit *g* may be readily withdrawn from the bore *f* of rod B.

By virtue of the construction of our novel chuck it will be observed that the same constitutes a double grip for and is calculated to securely hold the bit *g*. It will also be observed that during the operation of the chuck any shock or jar that may tend to loosen the taper key E will operate to tighten the taper key F, while any shock or jar that may tend to loosen the taper key F will tighten the taper key E, with the result that liability of the bit *g* being casually released is reduced to a minimum.

It will further be observed that the construction of the chuck is such that all of the parts are supported and reinforced by each other, with the result that the chuck as a whole is well adapted to withstand the shocks and jars to which rock-drill chucks are ordinarily subjected.

We have specifically described the construction and relative arrangement of the parts embraced in the present and preferred embodiment of our invention with a view of



imparting a definite understanding of the said embodiment. We do not desire, however, to be understood as confining ourselves to the said specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of our claimed invention.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a rock-drill chuck, the combination of a case open at its lower and upper ends, a rod extending through and secured in said case and having a bore in its lower portion and oppositely-tapered, longitudinal grooves or ways in its opposite sides and also having openings in the bottoms of the grooves or ways connecting said grooves or ways and the bore, friction shoes or gibs arranged in the said openings of the rod, and reversely-arranged taper keys disposed in the grooves or ways of the rod and between the friction shoes or gibs and the adjacent side walls of the case.

2. In a rock-drill chuck, the combination of a case open at its lower and upper ends and

having alined apertures in the upper portions of its front and back walls, a rod extending longitudinally through the case and having an aperture alined with the apertures in the front and back walls thereof, and also having a bore in its lower portion, oppositely-tapered longitudinal grooves or ways in its opposite sides and openings in the bottoms of the grooves or ways connecting the same and the bore, friction shoes or gibs arranged in the said openings of the rod, reversely-arranged taper keys disposed in the grooves or ways of the rod and between the friction shoes or gibs and the adjacent side walls of the case and having enlargements at their opposite ends, and a fastening-pin extending through the alined apertures in the front and back walls of the case and the rod.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JAMES S. HARRIS.  
JOHN R. HOSKIN.

Witnesses

EDWARD TIPPETT;  
NICHOLAS JOHNS.