

No. 788,476.

PATENTED APR. 25, 1905.

H. KIEREN.
PLUG VALVE.

APPLICATION FILED MAY 13, 1904.

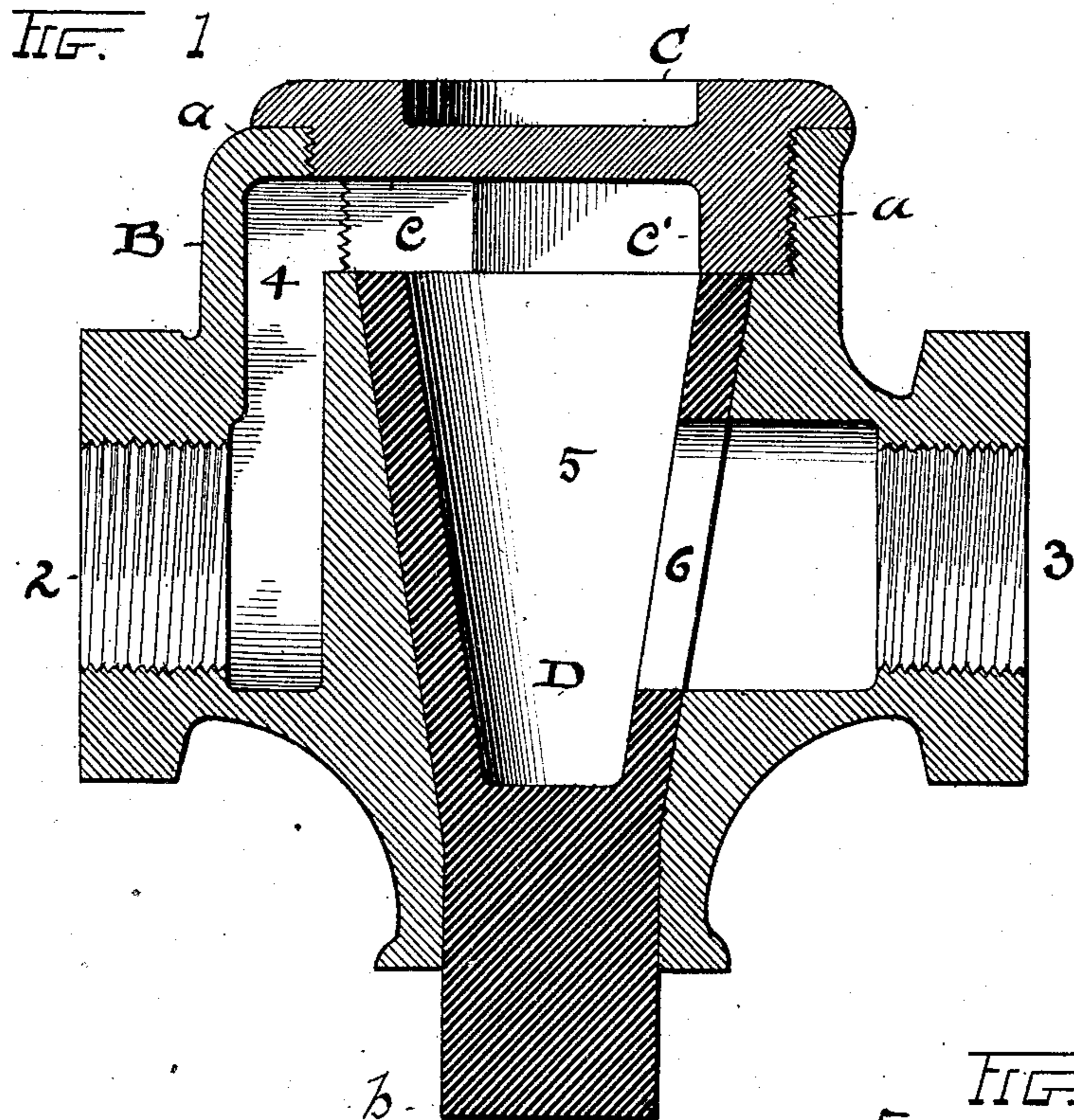


FIG. 2.

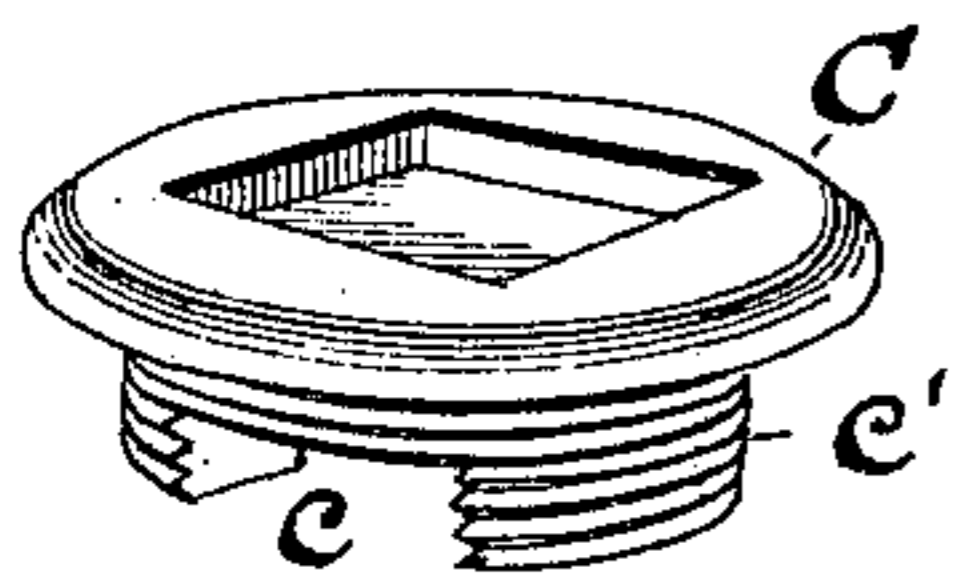
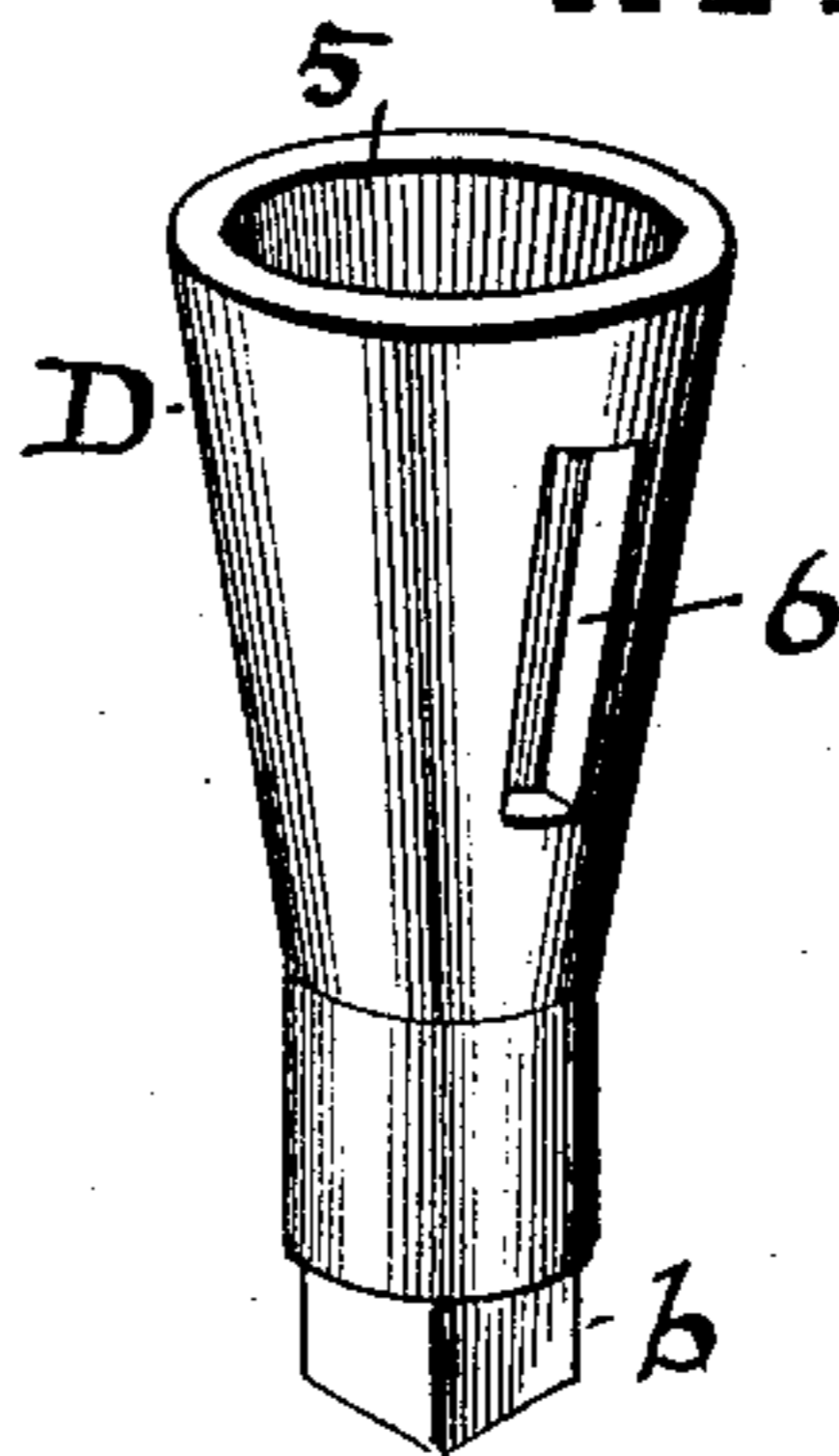


FIG. 3.



WITNESSES:

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HENRY KIEREN, OF CRYSTAL FALLS, MICHIGAN.

PLUG-VALVE.

SPECIFICATION forming part of Letters Patent No. 788,476, dated April 25, 1905.

Application filed May 13, 1904. Serial No. 207,824.

To all whom it may concern:

Be it known that I, HENRY KIEREN, a citizen of the United States, residing at Crystal Falls, in the county of Iron and State of Michigan, have invented certain new and useful Improvements in Plug-Valves; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in plug-valves; and the invention consists in the construction and combination of parts, substantially as shown and described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical central sectional elevation of the valve-supporting body and other parts in working relation, as hereinafter fully set forth. Fig. 2 is a perspective detail view of the cap, and Fig. 3 is a perspective detail view of the plug.

The device thus shown is designed to be used in connection with pneumatic drills, though not necessarily limited to such use, and with such drills the valve is located in the line of the air-supply and usually quite near to the drill, so that it is subjected to the incessant pounding and jarring these drills are constantly giving off in their operation and which in a comparatively short time loosens the nuts, so that the miner has often to tighten them, and as the thread is worn by the continual loosening and tightening the miner is compelled to use more force each time to tighten the nut, which soon jams the plug so that it sticks. Then the miner begins to hammer the plug in order to open or shut it or hold it in any position, soon destroying the taper and threads of the plug so that the bearing is not true. Then leaking commences and the plug will jar open or shut very easily, and often a miner's helper is obliged to keep a hand on the plug while the drill is in operation in order to keep the valve or plug in the position desired.

The present invention is designed to produce a valve which does not contain the objections found in the old style just described, and this is accomplished by providing a valve

or cock which has no threads, nuts, or other like features which easily get out of order, but which is held in place by the pressure of the fluid flowing through the same, as will hereinafter fully appear.

Referring to the drawings, B represents the body of my improved valve construction, having an inlet-port 2 at one side and an outlet-port 3 at the other side and a central downwardly converging or tapered seat for the cock, plug, or valve D. The inlet port or passage has an extension 4 in the wall of the body which runs to a point above the valve-seat in position to discharge over into the plug or valve D, and the cap C has a recess *c* in its inner threaded or flange portion *c'* registering with inlet port or passage 4 and serving to open communication between said passage with the passage, space, or cavity 5 in the plug and through which the fluid, whatever it may be—such as air, steam, water, or the like—travels in its course through said parts from inlet-port 2 to discharge-port 3. The body B has a threaded top portion *a* above the valve-seat engaged by cap C, and the upper portion of the fluid-inlet port 4 opens through the wall of this top portion *a* into the opening *c* in cap C.

It will be observed as a feature of the plug or valve D thus shown and described that it is permanently open at or through its top to the fluid-pressure through port 2 and that its external surface is perfectly smooth and fits snugly in the tapered seat in the body B and is provided at its lower end with an angular extremity *b*, constructed to apply a wrench or other tool for the rotation of the valve. This is the only point at which the said valve can be reached while in operative position, as it is closed in at the top and covered by the threaded cap C, which in a sense confines it in working position. However, the said cap really is not regarded as a means for holding the valve upon its seats, although it screws down upon the same as shown, because the valve is so constructed internally that the fluid-pressure passing through the same will bear it down and hold it on its seat without mechanical aid. The said valve will therefore remain open or closed or in any position to which

it may be adjusted and is not liable to be moved out of adjusted position by the jarring of the drill or by other untoward conditions which soon render ordinary valves inoperative, and it is immaterial whether the fluid-pressure be heavy or light, as the effect is practically the same in either case, and the valve will hold its place and do its work for an indefinite period.

10 The plug D has the usual lengthwise slot or opening 6 in its side through which connection is obtained through the casing.

What I claim is—

15 A plug-valve for air-lines for pneumatic drills consisting of three parts comprising a casing with an inlet-passage having a vertical portion 4 leading to the top thereof and an

outlet on its opposite side, in combination with a plug-valve seated in said casing having a flaring hollow body widest at its upper end, 20 and a cap screwed into the top of said casing and seated alike upon the end of said plug and upon a seat on the casing about said plug and having a recess in its inner portion at the top of said inlet-passage 4, whereby open commu- 25 nication is established through said plug, substantially as described.

In testimony whereof I sign this specification in the presence of two subscribing witnesses.

HENRY KIEREN.

Witnesses:

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FREDERICK H. MILLER.