(No Model.)

J. POWELL.

PLUG COCK.

No. 369,613. Patented Sept. 6, 1887.

FIG. 1.

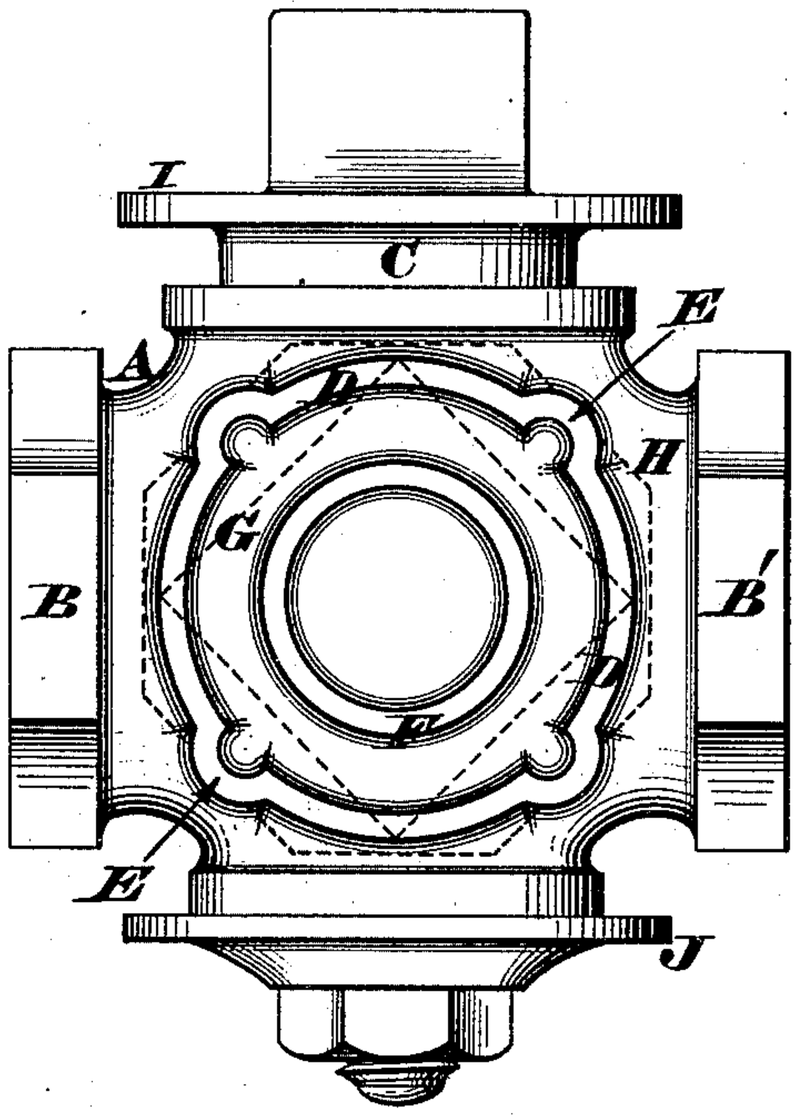


FIG. 2.

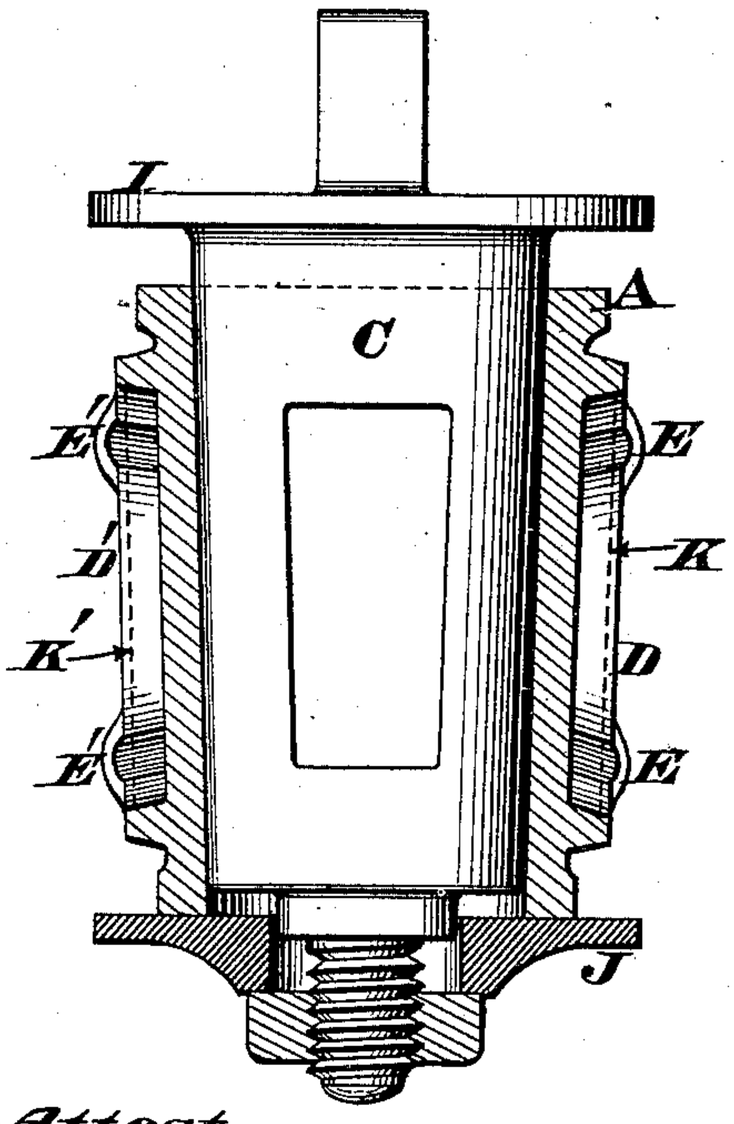
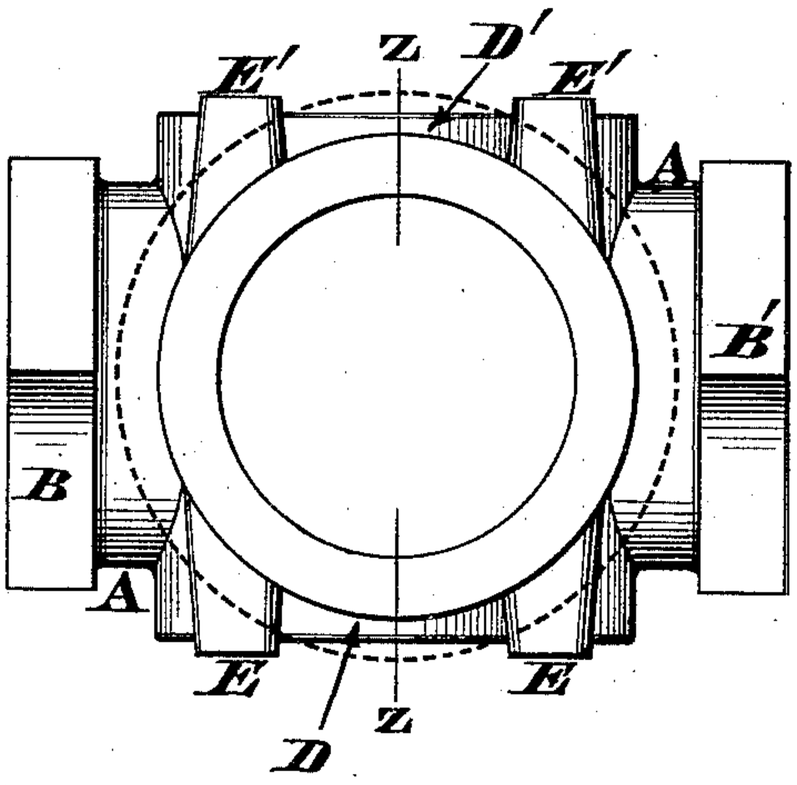


FIG. 3.



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UNITED STATES PATENT OFFICE.

JAMES POWELL, OF CINCINNATI, OHIO.

PLUG-COCK.

SPECIFICATION forming part of Letters Patent No. 369,613, dated September 6, 1887.

Application filed January 21, 1887. Serial No. 225,030. (No model.)

To all whom it may concern:

Be it known that I, JAMES POWELL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Plug-Cocks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates more particularly to the ordinary stop-cock in which the key or plug is fitted and ground into a barrel or shell, said key being retained in the barrel by the customary nut and washer; but a part of my improvement is also applicable to the body or shell of the common "globe," "angle," or "gate" valve, as hereinafter described.

The object of these improvements is to provide a valve or cock that will not be readily injured by the rough usage incidental to handling the same or of laying lines of pipes to which they are attached; and my invention consists in protecting the side of the barrel or shell from injury without at the same time unduly increasing the weight of material, and thus adding to the original cost of manufacture.

In the ordinary stop cock or valve as commonly constructed there is no provision made to protect the barrel or shell from being sprung, strained, or otherwise damaged in shipment or handling before being used, or, if used, from being injured or broken while being placed in position in the trenches, &c.

It frequently happens in laying long lines of pipes for street-service, either for water, steam, or gas, that a number of sections of pipe with the service-cocks are screwed together at one time and then lifted or thrown into the trench. This usage often produces a severe strain on the end of the cocks and twists them out of "round" and causes them to leak, and it is not infrequently the case that the valves or cocks are entirely broken off; or, as in the case of an out-of-ground service for natural gas in suburban towns and villages, the pipe-line is sometimes left exposed to the vicissitudes of weather and changes of temperature, under which conditions the service cocks or valves are often subjected to injury by being carelessly thrown about or struck by stones or the wheels of passing vehicles or other hard substances, thus entailing vexatious and expensive repairs and endangering property by leakage of gas. This liability to injury has necessitated the use of excessively thick and heavy valves or cocks, and thereby greatly increasing the cost of such lines of service-pipes, whereas my improvement adds very little to the weight of such cocks or valves, while they are much better calculated to resist undue strain or rough usage.

The first part of my improvement consists in providing the sides of the shell or casing with integral fenders or guards of any desired size, shape, and number. These fenders usually take the shape of ribs or flanges, which project a suitable distance beyond the sides of the shell, in order that said ribs may come in contact with the ground when the valve is carelessly thrown down, as hereinafter more fully described.

The second part of my improvements consists in providing the sides of the shell or casing with a series of smaller projections that guard said shell from certain blows that the fenders could not so completely resist, as hereinafter more fully described.

The third part of my improvements consists in further projecting the shell by providing the upper end of the plug or key with an enlarged collar, and similarly enlarging the washer at the smaller end of said plug, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a side elevation of a cock or valve embodying my improvements. Fig. 2 is a vertical section of the same, taken at the line *z z* of Fig. 3. Fig. 3 is a plan of the top of the shell, the plug or key being removed therefrom.

A represents the shell or casing of an ordinary valve or cock, which shell is provided with pipe ends B B′ and a plug or equivalent cut-off, C.

D represents a guard or fender cast with said shell and projecting from the side of the same as far as may be necessary, said fender being here shown as an annular flange or rib, although the invention is not limited to any specific size or form of such flange, provided such guard projects beyond the "arch" or weak part of

the shell or casing. Furthermore, it is preferred to furnish the side of the shell with a series of smaller projections, E, which generally constitute continuations of the ring D, but extend a slight distance beyond the latter, as more clearly seen in Fig. 3. This arrangement of ring and projections is duplicated on the opposite side of the valve-shell, as seen at D′ E′ in Fig. 2.

F in Fig. 1 represents a smaller concentric ring, that may be cast with the shell, if desired. The dotted line G in said illustration indicates that the guard may be square, instead of circular, while the other dotted line, H, suggests an octagonal-shaped fender; but in all cases it is preferred to make the devices D, D′, G, and H rings, so as not to add materially to the weight of the shell. The collar I at the upper or larger end of the plug is very materially increased in diameter, in order that it may overhang the top of the shell, and thereby protect the same at its weakest point, as seen in Fig. 2 and indicated by the dotted circular line in Fig. 3. The washer J, applied to the lower or smaller end of said plug, is also enlarged in diameter for a similar purpose.

The advantages of the above-described improvements will be readily appreciated when it is understood that in laying lines it is customary to couple a number of cocks to different sections of pipe and then drop them bodily into the trench. Consequently this rough usage frequently causes the shell to come in violent contact with a stone or other hard obstruction, and, as a natural result, said shell is cracked and leaks as soon as gas is turned on.

It will be seen that my arrangement of fenders D D′ prevents a stone striking point-blank against the comparatively thin sides of the shell, more particularly the central part or arch of the same, while the smaller projections E E′ assist in protecting the ring D from the effect of a direct blow on the same, as it is evident the bases of the smaller projection rest upon the "quarters" or strongest part of the casing.

It is also apparent that the enlarged collar I and washer J coact with said fenders and projections to protect the shell from various other blows incidental to the rapid and careless method of laying long lines of pipe either for gas or steam.

It is also apparent that the rings D and projections E E′ are equally applicable to the sides of an ordinary shell of a globe, angle, or gate-valve; and, if desired, yielding cushions may be inserted within either of the ring or rings, as indicated by the dotted lines K K′ in Fig. 2.

I claim as my invention—

1. A cock or valve shell having a pair of pipe ends, a cut-off for regulating the flow through said shell, and integral fenders projecting beyond the general surface of its opposite sides, for the purpose described.

2. A cock or valve shell, A, having pipe ends B B′, a cut-off, as C, integral fenders D D′, and a series of smaller projections, E E′, which fenders and integral projections extend beyond the general surface of the opposite sides of said shell, for the purpose described.

3. A cock or valve shell, A, having a cut-off, as C, provided with an extended integral collar, I, at top and extended separable washer J at bottom, which devices I J project beyond the general surface of the opposite sides of said shell, for the purpose described.

4. A cock or valve shell having a pair of pipe ends, a cut-off, and integral fenders, which fenders project beyond the general surface of the opposite sides of said shell and have elastic cushions fitted within them, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES POWELL.

Witnesses:

JAMES H. LAYMAN,

SAML. S. CARPENTER.