(No Model.)

R. N. PRATT.

VALVE.

No. 477,605. Patented June 21, 1892.

Fig. 1

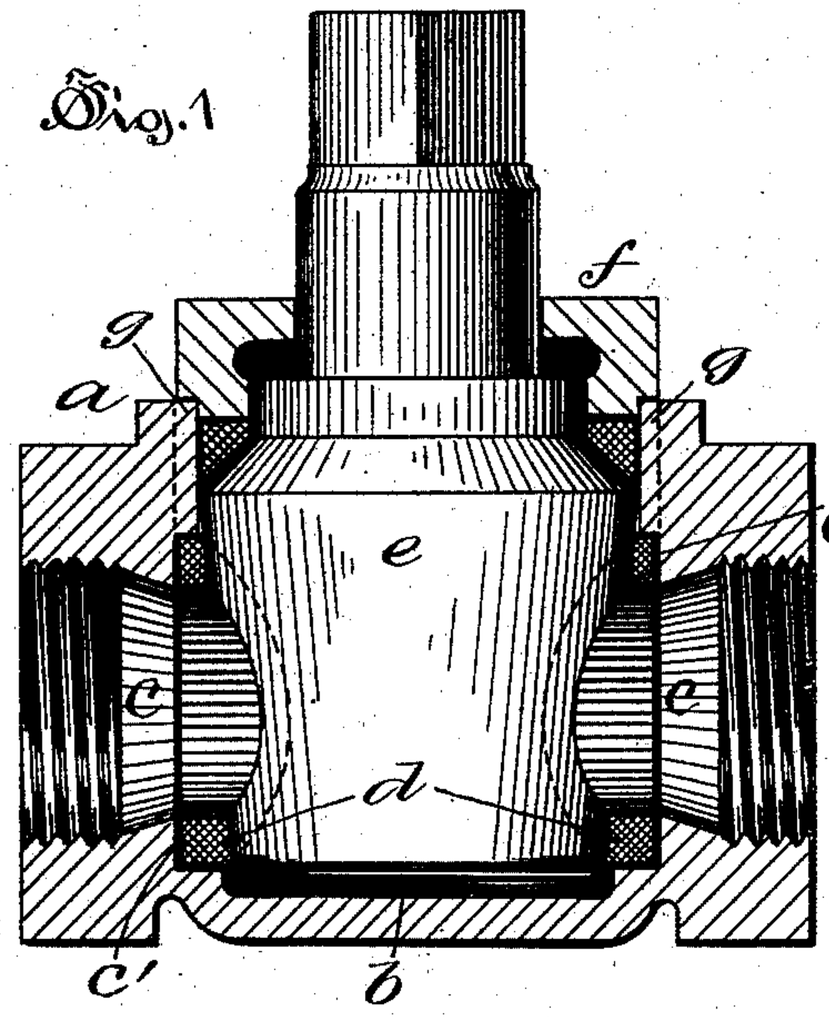


Fig. 3

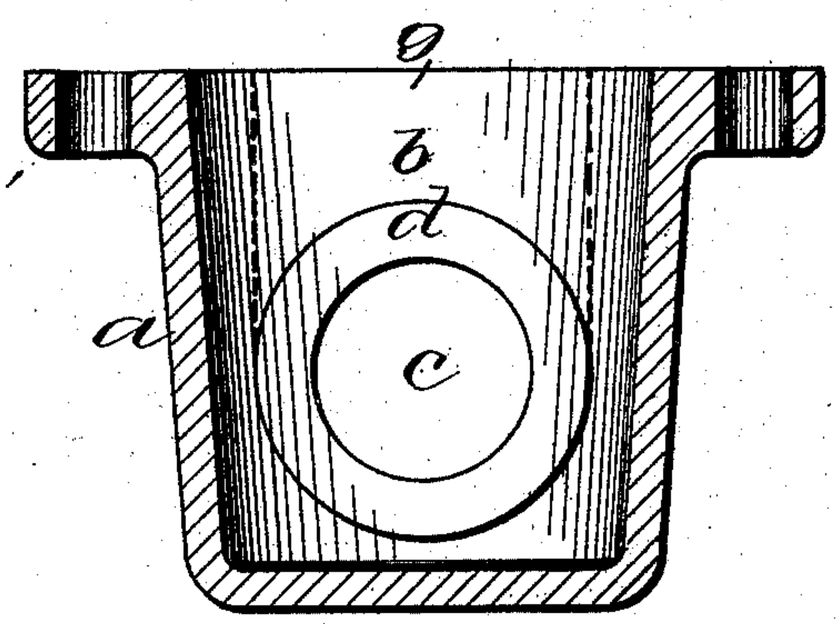


Fig. 2

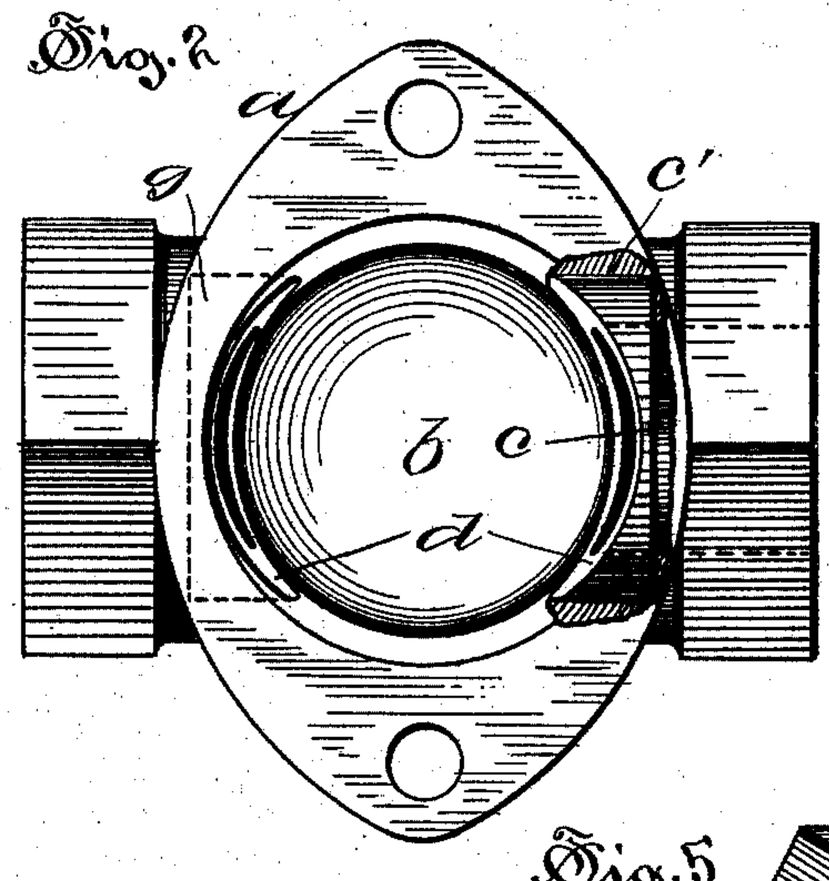


Fig. 4

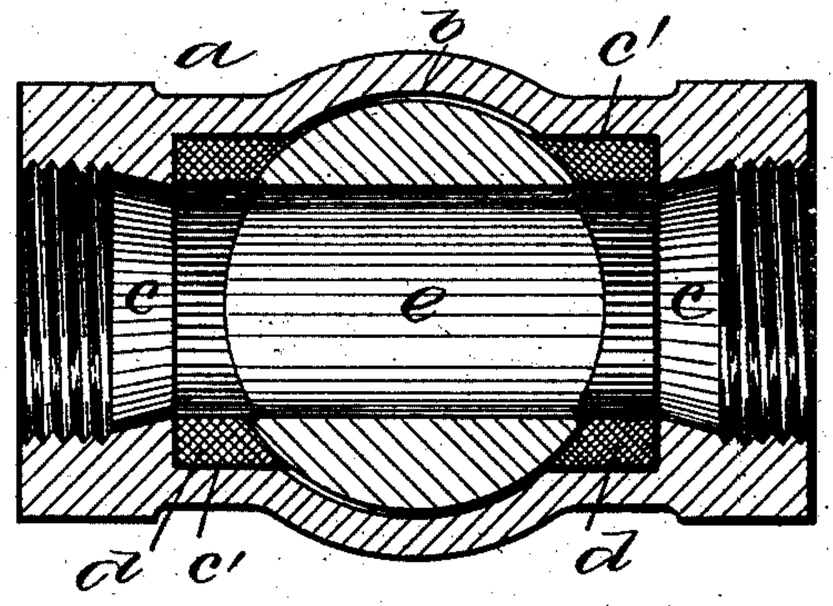
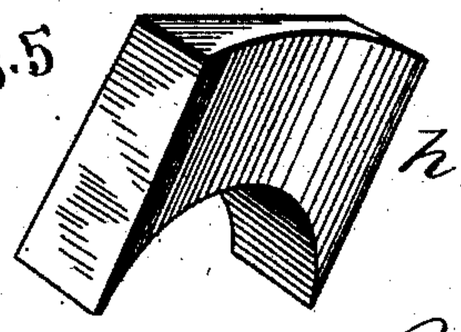


Fig. 5



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UNITED STATES PATENT OFFICE.

RUFUS N. PRATT, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PRATT & CADY COMPANY, OF SAME PLACE.

VALVE.

SPECIFICATION forming part of Letters Patent No. 477,605, dated June 21, 1892.

Application filed July 23, 1891. Serial No. 400,486. (No model.)

To all whom it may concern:

Be it known that I, RUFUS N. PRATT, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Cocks, of which the following is a full, clear, and exact specification.

This invention relates to that class of cocks for stopping or regulating the flow of hot or cold liquids or vapors, having renewable seats and a rotary tapered plug; and the object of the invention is to provide a cock of this class which is simple and cheap in construction, having ports of the most desired shape and interchangeable seats which can be easily and quickly inserted or removed for cleaning, repairing, or renewing when they become so worn that the cock leaks, which seats, with but little friction, tightly fit the tapered plug, which has considerable follow, so as to take up the wear, and thus prolong the life of the cock.

Referring to the accompanying drawings, Figure 1 is a longitudinal vertical section of the cock. Fig. 2 is a plan of the body with a part broken away to show the construction. Fig. 3 is a transverse vertical section. Fig. 4 is a longitudinal horizontal section, and Fig. 5 is a detail view of the seat-holder used with a modified construction.

In the views the letter *a* indicates the body of a solid-bottom cock cast to shape of any suitable metal, with an annular barrel *b*, from which ports *c* open to the ends, that are provided either with screws or flanges for attachment to the pipes or mains of the system in which the cock is to be located.

In the form illustrated the ports are circular—the most desirable shape for the passage of fluid—and in the interior are considerably enlarged. This enlargement *c'* of the ports is preferably accomplished by inserting a tool into the interior of the barrel and boring a recess of the desired depth and diameter in the side of the walls around the ports. In these enlargements of the ports on the interior are loosely placed seats *d* of a depth slightly greater than the depth of the enlargements or recesses, so that the outer edges of the seats which conform to the contour of the interior project slightly from the metal into the barrel. These seats are preferably made of asbestus fiber and rubber vulcanized and hardened by heat and pressure, but of course may be made of any other suitable material which is softer than the metal of the body. They are of a size that fits freely into the recess and have an opening approximately of the same diameter as the smaller diameter of the ports. A rotary tapering plug *e*, with a fluid-way, is formed slightly smaller than the body and fits the seats *d* around the ports, and is held in place in the form shown by a gland *f*, that is suitably packed and bolted or screwed to the top of the body.

If it is found inconvenient to easily place the seats in the enlarged part of the ports by slipping them in sidewise from the interior of the barrel after the recess is bored, a portion *g* (indicated in dotted outline in Figs. 1, 2, and 3) of the interior wall of the barrel above each recess may be cut away, so that the seats may be dropped in vertically from the top, and then a piece *h*, shaped to fill this opening, is loosely set upon top of the seat to hold it in place. Of course, if desired, the piece *h* may be made integral with the seats, which need not of necessity be formed on a circle, as they may be made oblong if the port-openings are of that shape.

With the construction described the interior of the body of the cock does not require expensive machine-work nor a fine finish, the ports being enlarged easily and cheaply by any common boring-tool. All the bearing of the plug comes upon the seats, which are cheaply constructed, are interchangeable, and are easily inserted into or removed from the cocks without breaking its connections, and as the seats are narrow they exert but little friction on the plug, which under the pressure of the gland follows down into the barrel as the seats wear away, so as to keep the cock tight, which, however, may be quickly renewed by removing the old and substituting new seats, which are so cheap and small that a number can be kept on hand.

I claim as my invention—

1. A rotary-plug cock having a body with an annular plug-chamber, ports with enlarged interior extremities leading from the chamber, with seats loosely resting in the enlarged

portion of the ports, and a solid rotary plug fitting the seats at all times and holding them in place, substantially as specified.

2. A rotary-plug cock having a body with an annular plug-chamber, ports opening from the chamber, with recesses in the walls of the chamber surrounding the ports, annular seats resting loosely in said recesses, with their outer faces projecting into the chamber, and a solid rotary plug fitting the seats at all times and holding them in place, substantially as specified.

3. A rotary-plug cock having a body with an annular plug-chamber, with recesses in the walls of the chamber surrounding the ports, mortises extending from the recesses to the top of the plug-chamber, seats resting loosely in the recesses, plates loosely fitting said mortises and resting upon the seats, and a rotary plug fitting the seats, substantially as specified.

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