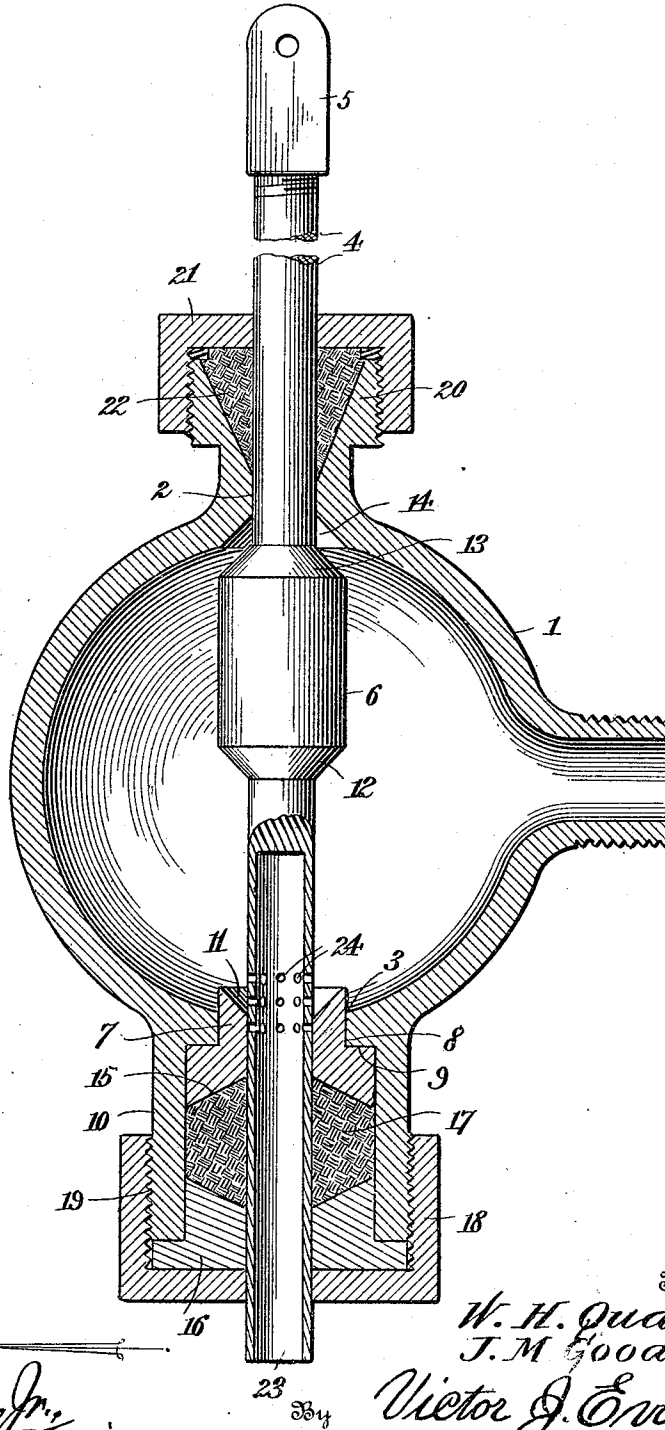


W. H. QUANDT & J. M. GOODEN.  
 BALANCED PISTON COCK.  
 APPLICATION FILED MAY 5, 1915.

1,230,777.

Patented June 19, 1917.



Witnesses:

*C. Feinle, Jr.,*  
*R. M. Smith.*

Inventors

*W. H. Quandt,*  
*J. M. Gooden.*

*Victor J. Evans,*

Attorney.

# UNITED STATES PATENT OFFICE.

WILLIAM H. QUANDT AND JESSE M. GOODEN, OF URBANA, ILLINOIS.

## BALANCED-PISTON COCK.

1,230,777.

Specification of Letters Patent. Patented June 19, 1917.

Application filed May 5, 1915. Serial No. 26,111.

*To all whom it may concern:*

Be it known that we, WILLIAM H. QUANDT and JESSE M. GOODEN, citizens of the United States, residing at Urbana, in the county of Champaign and State of Illinois, have invented new and useful Improvements in Balanced-Piston Cocks, of which the following is a specification.

This invention relates to balanced piston cocks, the object in view being to produce a device of the character referred to which may advantageously be substituted for the ordinary globe valve now in service in a great many places and for various purposes, the piston cock of this invention requiring no grinding, remaining always tight and avoiding the expense of regrinding which is now necessary in the ordinary globe valve.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

The accompanying drawing represents a balanced piston cock embodying the present invention.

The balanced piston cock contemplated in this invention comprises a hollow body 1 which may be of any desired shape and size, said body being formed at opposite places therein with openings 2 and 3 through which is slidable a longitudinally movable stem 4 which is of sufficient length to project at both ends outside of and beyond the body 1, said stem being provided at the operating end thereof with a jaw or attaching member 5 enabling a lever, handle or any other device to be attached to the stem 4 for the purpose of moving the same in the direction of its length for a purpose which will presently appear.

A balanced piston 6 is provided on the stem 4 and preferably formed integrally therewith, said piston 6 being arranged and working interiorly of the body 1, the shape of the piston being such that when pressure of steam or water is obtained on both ends thereof, there will be no tendency of water, steam or other pressure to move the stem 4 in either direction.

The opening 3 in the body 1 is of larger diameter than the opening 2 and of sufficient size to permit the piston 6 to pass there-through. Within said opening 3 there is mounted a piston guide 7 the same being rabbeted as shown at 8 to provide for a firm seating thereof against an annular shoulder

9 formed within a projecting neck 10 forming an extension of the body 1. The inner end of the guide 7 is formed with a conical recess 11 to receive the cone-shaped face 12 of the piston 6 when moved in one direction. The opposite end of the piston 6 is also provided with a corresponding cone face 13 adapted to seat against a conical shoulder 14 when the stem 4 is moved in the opposite direction. The opposite or outer face of the guide 7 is recessed as indicated at 15 and in connection with a gland 16 which fits into the outer end of the neck 10, forms a packing chamber 17 in which any suitable packing material may be placed. 18 designates a gland nut which is threaded at 19 upon the neck 10. A stuffing box is thus formed for the stem 4 at one end and another stuffing box is provided for the opposite end portion of the stem 4, the same being shown as comprising an extended and externally threaded neck 20 upon which is threaded a packing nut 21, the neck being recessed to form a packing chamber 22.

One end portion of the stem 4 beyond the piston 6 is centrally and longitudinally bored to form a passage 23 open at one end of the stem. Ports 24 of any desired size, shape and number intersect the bore 23 to allow for the passage of water, steam, air or other liquid or fluid.

From the foregoing description, taken in connection with the accompanying drawing, it will be seen that we have produced a balanced piston cock adapted to be substituted for the present day globe valve, the device of this invention requiring no grinding, and remaining always tight, it being a comparatively easy matter to compress the packing in the stuffing boxes. In fact, new packing may be introduced in the stuffing boxes without releasing the fuel or liquid in the body of the valve. To adjust the flow, the stem 4 is moved in one direction or the other as required, will always remain where left, as it is not affected by internal pressure within the body 1. There is no opportunity whatever for scale or other foreign matter to cause the piston to become stuck and there are no valves or seats to be cut and impaired. The device is especially adapted for use on locomotives, stationary boilers and any other receptacles where it is necessary occasionally to blow off sediment and the like.

What we claim is:—

A balanced piston cock comprising a body

having an inlet and a tubular neck forming a cylindrical chamber and oppositely located openings one of which communicates with said neck, the cylindrical chamber being larger than the opening through the body adjacent thereto to form an internal annular shoulder, a piston stem longitudinally movable through said openings and projecting beyond the body, said stem having a central bore extending from one extremity thereof for a portion only of its length and also having ports intersecting said bore, a cylindrical enlargement on said stem within the body forming oppositely disposed shoulders, a combined piston stem guide and port closure through which the bored and ported portion of said stem is slidable, said guide being of such extent as

to cover a portion or all of said ports, and having an annular shoulder which abuts the internal shoulder of said cylindrical chamber, a gland having a sliding fit in the end of said chamber, a gland adjusting nut detachably threaded upon the neck of the body, the guide being removable from the neck when the gland and its adjusting nut are removed to admit of the removal of the stem.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM H. QUANDT.  
JESSE M. GOODEN.

Witnesses:

ANDREW F. FAY,  
WILL C. NOEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."