

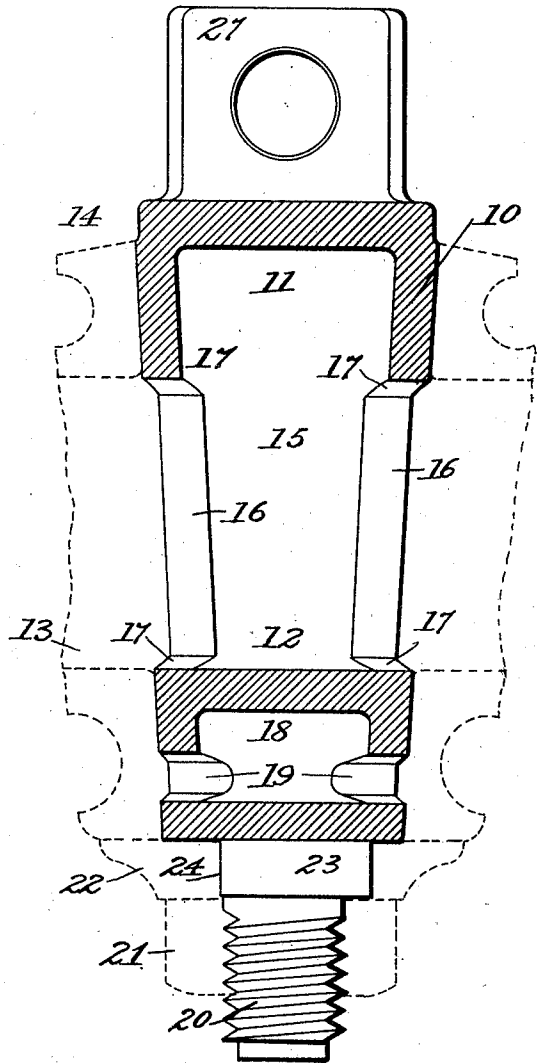
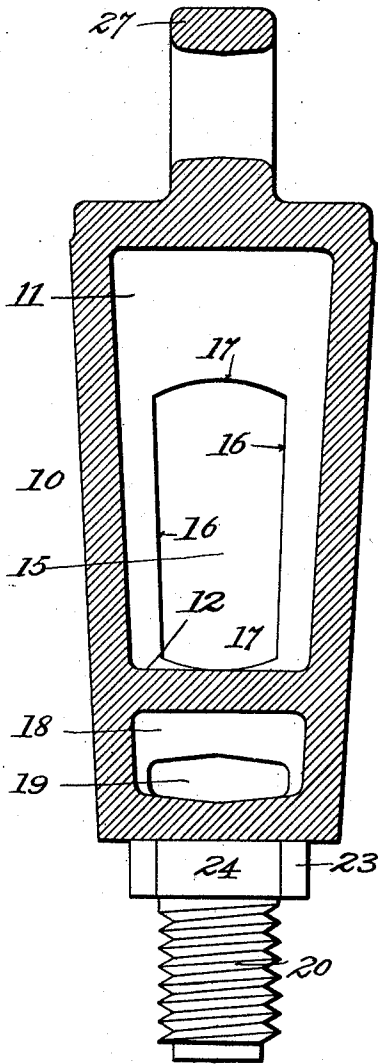
1,002,428.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

Fig.1.

Fig.2.



Witnesses

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IRON BODY COCK.  
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1,002,428.

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2 SHEETS-SHEET 2.

Fig. 3.

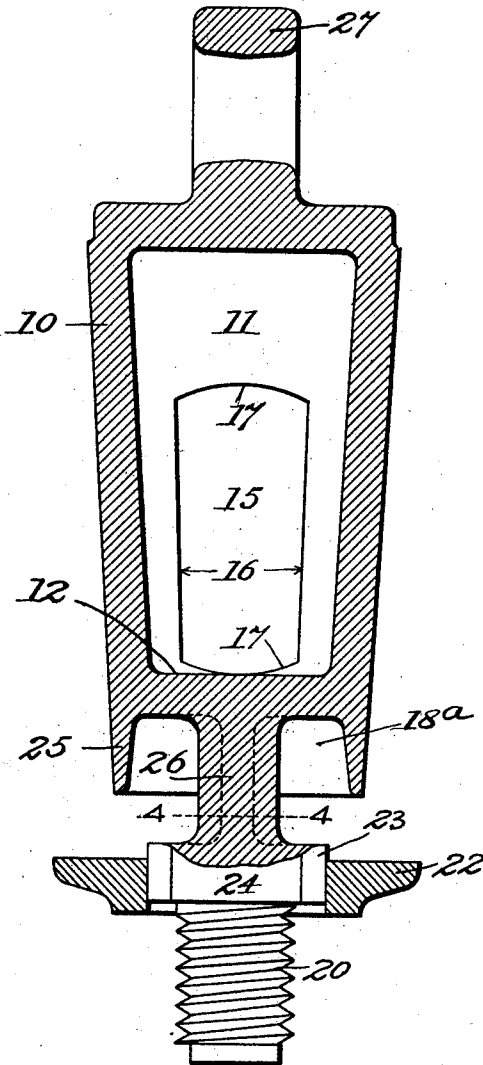


Fig. 4.

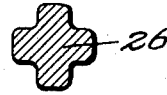
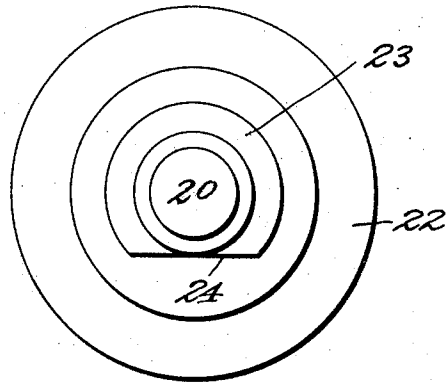


Fig. 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

PHILIP MUELLER, OF DECATUR, ILLINOIS, ASSIGNOR TO H. MUELLER MANUFACTURING COMPANY, OF DECATUR, ILLINOIS, A CORPORATION OF ILLINOIS.

## IRON-BODY COCK.

1,002,428.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed March 28, 1911. Serial No. 617,516.

*To all whom it may concern:*

Be it known that I, PHILIP MUELLER, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented new and useful Improvements in Iron-Body Cocks, of which the following is a specification.

This invention relates to ground-key cocks, being directed particularly to the turning plugs used in such cocks.

The object of the invention is to improve the turning plugs of cocks of various kinds, especially the plugs of gas service cocks by making the body of the plug hollow or chambered, the bottom of the chamber being in line with the inlet and outlet openings of the cock body or casing, and forming openings through the wall of the plug body into the chamber for the passage therethrough of liquids and gases, which openings extend downwardly only as far as the bottom of said plug chamber.

A further object of the invention is to lighten and cheapen the plugs, especially in large cocks, which are made usually of brass, by coring out that portion of said plugs below the chamber which are made long to give a steady bearing in the cock body.

Figure 1 is a vertical longitudinal sectional view of one form of turning plug; Fig. 2 is a similar view taken at a right angle to Fig. 1, a portion of the cock body or casing being shown in dotted lines; Fig. 3 is a view similar to Fig. 1 illustrating a modified form of turning plug; Fig. 4 is a sectional view on line 4-4 of Fig. 3, and Fig. 5 is a bottom plan view of the plug represented by Fig. 3.

In the drawings, the numeral 10 indicates the plug, in the present instance having a slight longitudinal taper toward its lower end and formed with a central chamber 11, the walls of which are relatively thin. The floor 12 of said chamber is flat and on a line with the bottom of the through passage 13 in the casing 14 as clearly shown in Fig. 2. The top of the chamber 11 extends nearly to the top of the plug. Through the walls of the plug 10 are made oppositely disposed openings 15 with downwardly tapered sides 16 and curved tops and bottoms 17 flush with and curved on the same radius as the through passage 13 in the casing 14.

Below the floor 12 of the chamber 15 in the preferred form of the invention, (see Figs. 1 and 2) a cavity 18 is formed in the plug 10 with openings 19 leading therefrom outwardly, which cavity and the chamber 11 reduces the plug to a mere shell, decreases its weight and saves metal without lessening the necessary strength demanded of it. The plug 10 terminates in a screw stem 20 for a fastening nut 21, between which and the base of the plug is a washer 22 engaging a shoulder or collar 23 having a flat side 24 fitting an opening of similar shape in said washer which turns with the plug.

The modified form of turning plug, illustrated in Fig. 3, has in place of the inclosed cavity 18, an open bottomed cavity 18<sup>a</sup> made by extending downwardly, the sides of the plug from the floor 12 in the form of a skirt 25, below which is the shoulder or collar 23, as in the preferred form, connected by a cruciform shank 26 with the bottom of the plug. The top of the plug is provided with a head 27 which may be flat and perforated as shown, square, or of other polygonal form, or made with a socket.

It is to be understood that the openings 15 through the walls of the plug 10 are not to be confined to the form shown but may be made rectangular, circular, elliptical or of any other desired shape provided the bottom of said openings lie in a plane with the floor of the chamber 11, and in line with the walls of the passage-ways in the body of the cock so as to prevent accumulation within the key, as is common with cocks of this character used in gas works, where the gas tar collects in keys of that type which have a well or cavity that extends below the bottom of the outward openings and the passages in the body of the cock. It is also desirable that said openings in the wall of the cock shall conform to the shape of the openings in the body of the cock through which the fluid passes.

What I claim is:—

1. In a ground-key cock, a hollow tapered turning plug having a relatively thin wall and an imperforate flat floor at a right angle to the axis of the plug, said wall being formed with fluid openings therethrough of less height and width than the chamber in said plug, said openings having flat sides and curved tops and bottoms on the same

radius as the fluid passages of the cock body into which said plug is adapted to fit, the bottoms of the fluid passages being in line with the floor of the chamber in the plug.

5 2. In a ground-key cock, a turning key therefor comprising a tapered body reduced to a shell by chambering its upper portion and forming a cavity in its lower end open at the bottom, said chamber having a flat  
10 floor in line with the bottoms of the fluid passages in the cock, oppositely disposed openings through the walls of the plug leading to said chamber, the tops and bottoms of said openings being curved and coinciding  
15 with said fluid passages, said lower cavity being open at the bottom, a cruciform shank depending from the floor of the chamber through the open cavity, screw threaded at its lower end and provided with a flat sided  
20 collar to receive a washer.

3. In a ground-key cock, a hollow tapered

turning plug having a relatively thin wall and a transverse imperforate partition dividing said plug into an upper chamber and a lower cavity open at the bottom, said partition forming a flat floor for said chamber at a right angle to the axis of said turning  
25 plug, fluid openings in said wall of less height and width than the chamber in said plug and having flat sides with their tops  
30 and bottoms curved on the same radius as the fluid passages of the cock body into which said plug is adapted to fit, the bottoms of the fluid passages being in line with  
35 the floor of the chamber in the plug.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIP MUELLER.

Witnesses:

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WILLIAM R. BIDDLE.

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