No. 669,481. Patented Mar. 5, 1901.

W. HOLZ.

STOP AND WASTE COCK.

(No Model.) (Application filed Feb. 7, 1900.)

Fig. 1

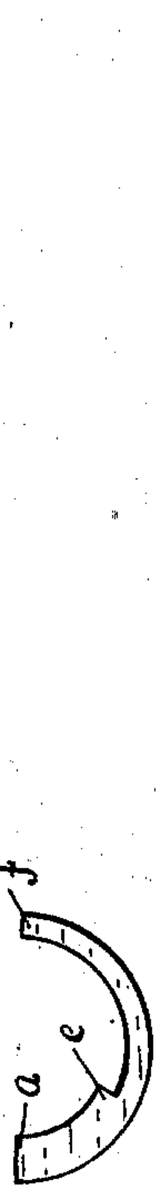

Fig. II.

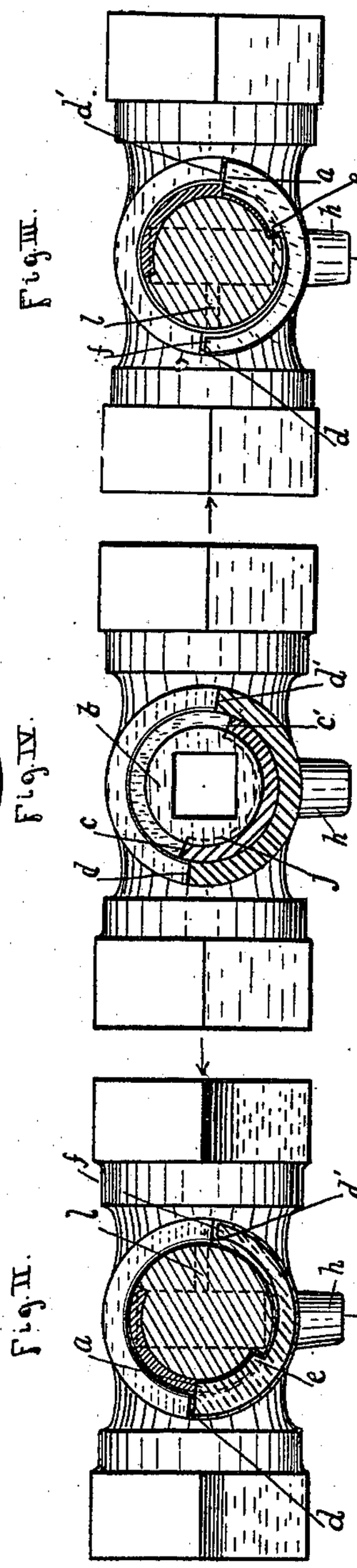

Fig. III.

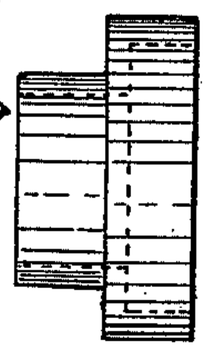

Fig. IV.

Fig. V.

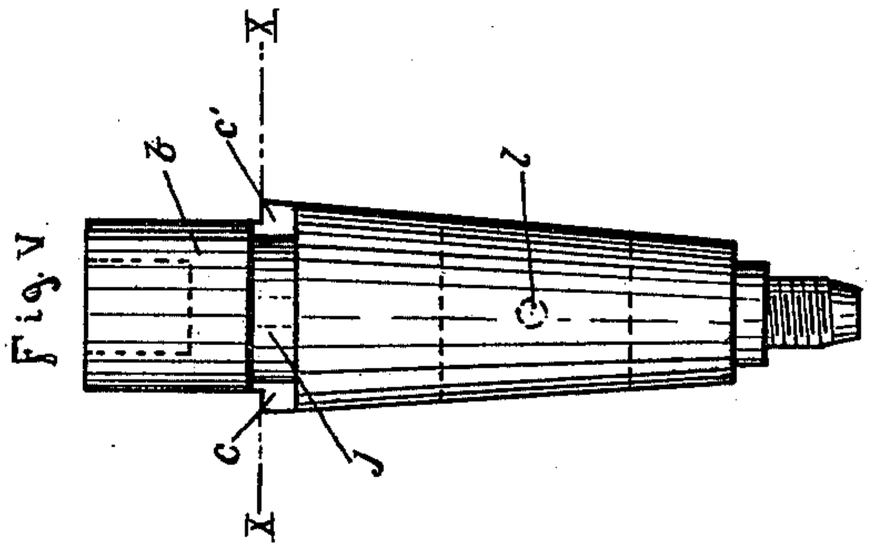

Fig. VI.

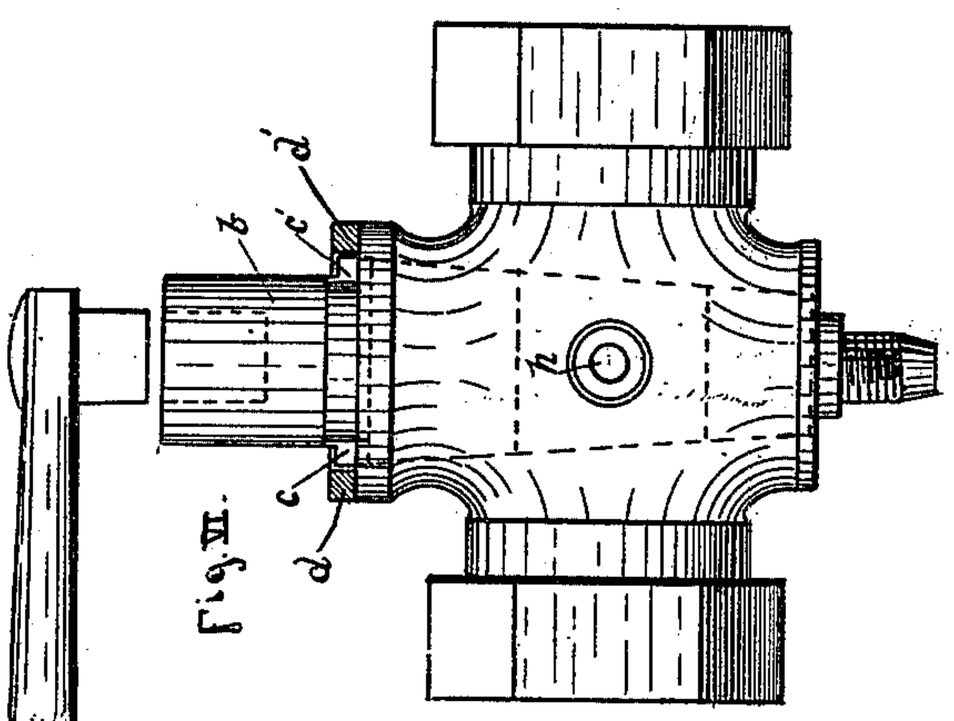

Fig. VII.

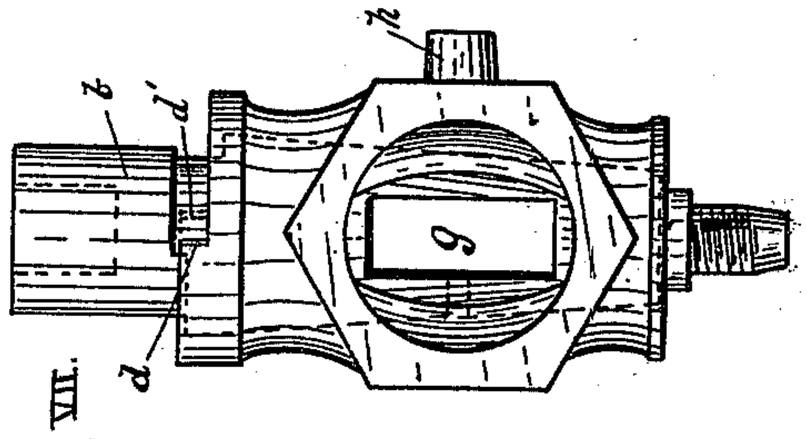

Fig. VIII.

Fig. IX.

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UNITED STATES PATENT OFFICE.

WILLIAM HOLZ, OF BUFFALO, NEW YORK.

STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 669,481, dated March 5, 1901.

Application filed February 7, 1900. Serial No. 4,424. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HOLZ, a citizen of the United States, residing in Buffalo, Erie county, New York, have invented a new and useful Improvement in Stop and Waste Cocks, of which the following is a specification.

My invention relates to improvements in stop and waste cocks in which the stop and waste cock is made to act as a right-hand or as a left-hand stop and waste cock by means of the use of a check, which is hereinafter explained. By the use of said check the stop and waste cock is practically brought to perfection, so that there can be no mistake in turning off water or in drawing water out of the waste-pipe, nor can there be any chance of an overflow of water. I attain these objects by means of the mechanism illustrated in the accompanying drawings.

Figure I is the check, consisting of a thin piece of material, usually brass, in a semicircular shape and little less than a semicircle, with one end a little wider than the other, as shown by Fig. I, in which *a* represents the wide and *f* the narrower end of the check, and *e* is a shoulder formed by cutting out and leaving the end *f* on the check narrower than the end of the check *a*. *d* and *d'* in all the figures show the section taken away in the neck of the valve-casing in order to allow the check to be placed in position for the right or left hand stop and waste cock. *c* and *c'* in all the figures show the shoulder formed by cutting away a portion of the plug, as shown by letter *j* in Fig. V. *j* represents a portion cut away from the plug on an even plane with the top of the valve-casing, leaving the shoulder *c* and *c'*. *b* shows the upper part of the plug. *g* is the hole in the plug, through which the water passes. *h* is the waste-hole in the valve-casing, through which the water escapes from the waste-pipe when the water is turned off. *j* is the section cut away in the plug to allow the action of the check, as shown in Fig. V. *l* represents the hole in the plug, which when water is shut off comes opposite the waste end of the pipe, through which waste water passes into the hole in the plug *g* and from thence through the waste-hole *h*.

Fig. II represents the check in position for a right-hand stop and waste cock. The left-hand end of the valve-casing is connected with the supply-pipe. The plug represented by Fig. V is placed in position so that the shoulder *c* will be beside the point or shoulder *d* of the valve-casing, so as to be even, and shoulder *c'* is even with or adjacent to point *d'*. Then the check is laid in the part cut away in the valve-casing, between the shoulders in the valve-casing, (represented by *d* and *d'*,) with the wider end of the check placed toward the left end of the valve-casing, as represented in Fig. II, so that point *a* of the check meets shoulder *d* of the valve-casing and also meets shoulder *c* of the plug and is in position to catch upon point *c* and prevents the plug from turning in that direction any farther, and the only way the plug can turn is that point *c'* of the plug, which is at *d'* when the water is running through supply-pipe, can be turned to point *e* of the check, and point *e* of the check prevents the plug from turning any farther in that direction, which is only a quarter of the way around, and when the plug is turned so that point *c'* meets point *e* the hole *g* through the plug is turned against sides of the valve-walls, shutting off the water, and the hole in the plug represented by *l* is brought opposite the waste end of the valve-casing, allowing the water from the waste end of the pipe to pass through this little hole *l* into the hole *g* in the plug and from *g* through the waste-hole *h*, and thus drains the water from the waste end of the pipe.

Fig. III represents the check in position so as to make a left-handed stop and waste cock. The valve-casing is in the same position as in Fig. II; but instead of the left end of the valve-casing being connected with the supply-pipe the right end is connected with the supply-pipe and the left end with the waste-pipe. The check is laid in the same opening in the valve-casing, so that the larger end of the check *a* comes up to the shoulder of valve-casing *d'*. When the plug is in position, the shoulder *c'* of the plug also comes up to and meets end *a* of the check, thus preventing the plug from turning any farther in that direction. The end of check *f* meets the shoulder *d* of the valve-casing, and shoulder *c* of the plug is adjacent to shoulder *d* of the valve-casing, thus only enabling the plug to turn

in one direction—viz., shoulder *c* of the plug can turn until it meets point *e* of the check, thus turning one-quarter of the way around. This closes the hole *g* in the plug, shutting off the water. The small hole *l* of the plug is brought opposite the waste end of the valve-casing, thus allowing the water from the waste-pipe to run back through the small hole *l* of the plug into the hole *g* of the plug and from there out through the waste-hole *h* of the valve-casing. This makes a left-handed stop and waste cock.

When the parts are in position for a right-handed stop and waste cock, the waste end of the valve-casing will be to the right hand and connected with the waste-pipe, and when the water is shut off the waste water will come back from the waste-pipe into the right-hand end of the valve-casing through small hole *l* in the plug, into the hole *g* in the plug, and then can escape through the waste-hole *h* in the valve-casing. The arrow in Fig. II represents the waste water coming back into the right-handed end of the valve-casing.

When the parts are in position for a left-handed stop and waste cock, the water comes into the right-handed end of the valve-casing, which is connected with the supply-pipe, as shown in Fig. III. The left end of the valve-casing is connected with the waste-pipe, and when the water is shut off the waste water flows back into the end of valve-casing, as shown by the arrow in Fig. III, and thence through the small hole *l* in the plug into the hole *g* in the plug, and thence out through the waste-hole *h* of the valve-casing. This makes a left-handed stop and waste cock.

Fig. VIII represents the cap which is placed over the end *b* of the plug when the plug is inserted in the valve-casing. This cap holds the check firmly in position and is a perfect protection from dirt or dust getting into the plug or valve-casing.

Fig. VI shows the plug inserted in the valve-casing, with shoulder *c* of the plug adjacent to shoulder *d* of the valve-casing, and shoulder *c'* of the plug adjacent to shoulder *d'* of the valve-casing, ready to have the check placed in position. If the check is placed on so that the wider end *a* of the check meets the shoulders *d* and *c*, respectively, of the valve-casing and plug, it makes a right-handed stop and waste cock; but if the check is placed on so that the wider end *a* of check is placed against shoulders *d'* and *c'*, respectively, of the valve-casing and plug, it makes a left-handed stop and waste cock. The wider end *a* of the check is always placed on the valve-casing on the side toward the end of the valve-casing connected with the supply-pipe. The plug is turned by means of a handle. (Shown in Fig. VI.) It is seen that by means of the use of this check there can be no possible mistake made in shutting off the water, as the plug can be turned only one-quarter of the way around and cannot be turned in any other direction, and there can be no mistake made in drawing off the waste water, as the water comes back through the small hole *l* of the plug, which becomes opposite the hole *g* of the plug, letting the water into the hole *g*, and the hole *g* of the plug becomes opposite the waste-hole *h* of the valve-casing, thus letting the water off.

The same letters refer to the same parts in the different figures of the drawings.

I am aware that prior to my invention stop and waste cocks have been made in which the plug could be turned in the same way as the plug is turned by means of my invention; but instead of a check being used screws and other devices have been used for holding the plug in position and turning the same; but all of these devices for turning a plug are more or less imperfect, owing to the fact that the screws used or other devices have been continually getting out of order and getting loose, so that the stop and waste cock could not always be relied upon to do its work perfectly. By means of this check, held in position by the cap, as above described, no possible mistake can be made. The check is so held in position and so fits into its groove and so held by the shoulders that it cannot possibly get out of position, and no mistake can possibly be made in shutting off the water.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of a valve-casing having a groove and shoulders, a turning plug having a groove in its upper portion and provided with shoulders, a check of substantially semicircular form and having a portion cut away to form an intermediate shoulder, and a cap for holding the check in position.

WILLIAM HOLZ.

Witnesses:
WARNER J. HUTCHINSON,
E. A. DRAKE.