H. WATKEYS.

STOP-COCK.

No. 177,180. Patented May 9, 1876.

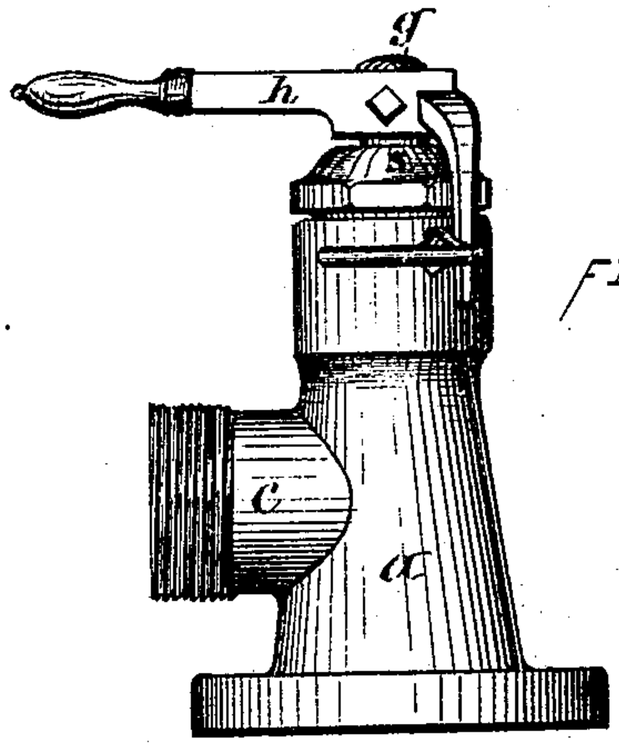

FIG-1

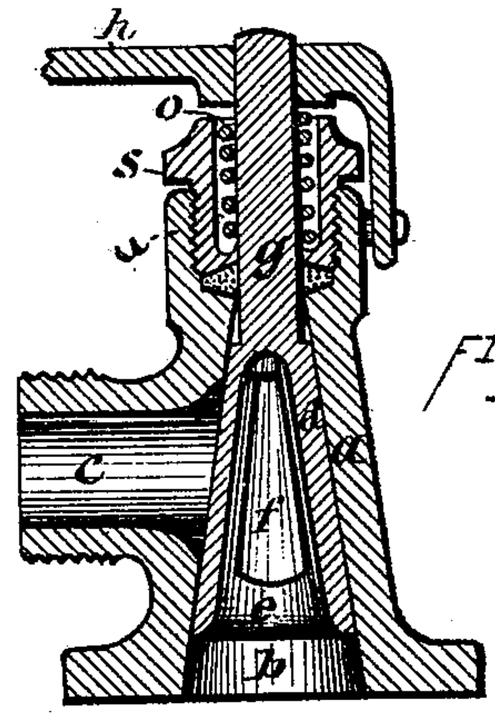

FIG-2

WITNESSES

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HENRY WATKEYS, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. **177,180**, dated May 9, 1876; application filed October 30, 1875.

To all whom it may concern:

Be it known that I, HENRY WATKEYS, of Syracuse, in the county of Onondaga, in the State of New York, have invented a new and useful Improvement in Stop-Cocks, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

My invention relates to improvements in that class of cocks and faucets which have a tapering plug lengthwise in the shell or barrel, with its largest end toward the inlet, and a passage or channel through same, formed by a central longitudinal cavity in its large end, and one or more orifices in its side, intersecting the cavity, and provided with a stem or rod at the small end, projecting through the outer or free end of the shell or barrel of the cock.

The object of the invention is to render the plug self-tightening or self-seating as rapidly as it is being worn, and to retain it in its seat when relieved from pressure at the inlet, and at the same time allow it to be loosened by a stroke on the top of the stem or rod without causing leakage around the latter.

The invention consists in the combination, with the shell or barrel having a longitudinal inward tapering plug-seat, and the tapering plug having a central cavity in the large end, and a stem or rod at the small end projecting through the outer or free end of the barrel, of a stuffing-box attached at the outer extremity of the shell or barrel, and having in its collar or gland an annular recess around the stem of the plug, and a spiral spring or elastic cushion in said recess, all constructed as hereinafter fully described.

In the accompanying drawing, Figure 1 is an exterior view of my improved stop-cock; and Fig. 2 a transverse section of same, showing the construction and combination of my improvements.

Similar letters of reference indicate corresponding parts.

a is the shell or barrel of the cock, having, in this case, the inlet at the bottom. *b* is the plug-seat formed lengthwise in the barrel, with a uniform taper from the inlet inward a sufficient distance beyond the lateral outlet or outlets *c* to allow for wear of the plug. *d* is the tapering plug, which, when new, is of proper size to prevent its entering the entire length of the seat *b*. *e* is the central longitudinal cavity in the large end of the plug, extending partly its length. *f* is an orifice or outlet in the side of the plug at or near the inner extremity of the cavity aforesaid, and forming therewith a channel or passage for liquid or other substance. *g* is the stem or rod attached to the small end of the plug, and projecting through the outer or free end of the shell or barrel of the cock, and provided with a suitable handle, *h*, at the end for turning the plug. *s* is a stuffing-box attached at the outer end of the shell for the purpose of preventing leakage around the stem *g*. The gland is constructed with an annular recess or chamber, *u*, in the outer end around the stem *g*, extending partly its length, and leaving sufficient material at the inner end of the gland to form a solid seat for a spiral spring or elastic cushion. *o* is a spiral spring or elastic cushion fitting the recess aforesaid. This device supports or retains the plug in its seat when relieved from pressure at the inlet, and also compensates for the diminution in the size of the plug caused by the wearing of same; or, in other words, it draws the plug into its seat as rapidly as it is worn off, thus rendering the same self-tightening or self-seating. At the same time, by its combination with the stuffing-box, it allows the plug to be loosened by striking on the end of the rod or stem *g* without causing leakage.

I am aware that stuffing-boxes with a spiral spring supporting the valve have been used in combination with globe valves or cocks, having the discharge opened by forcing the valve endwise and lifting the same off its seat; and I, therefore, do not claim the same, broadly.

What I do claim as my invention, is—

The combination, with the shell or barrel *a* having the longitudinal tapering plug-seat *b*, and the tapering or wedging plug *d* having central cavity *e*, side outlet or outlets *f*, and

stem *g*, of the stuffing-box *s* having annular recess *u* extending partly the length of the gland, and the spiral spring *o*, constructed substantially as described and shown, for the purpose set forth.

In testimony whereof I have signed my name and affixed my seal in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 25th day of October, 1875.

HENRY WATKEYS. [L. S.]

Witnesses:

CHRISTIAN HOLMSTRUP, Jr.,

J. C. LAAS.