A. SNYDER.

Stop-Cock.

No. 164,944. Patented June 29, 1875.

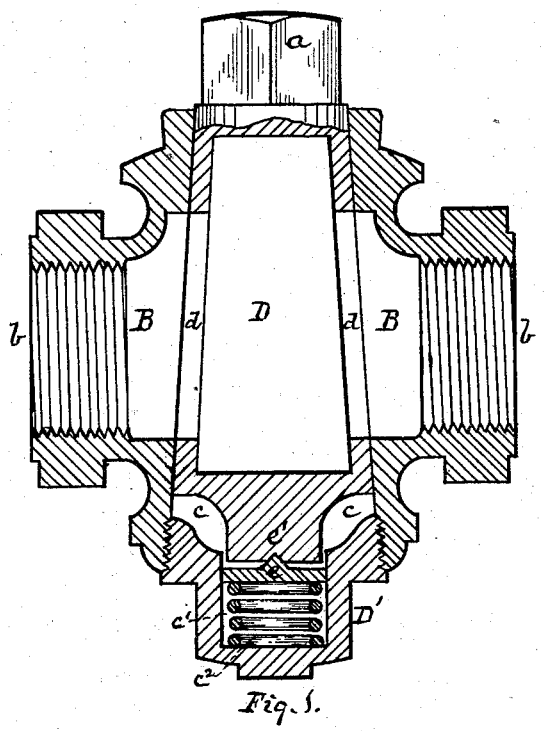

Fig. 1.

WITNESSES.

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UNITED STATES PATENT OFFICE.

AUGUST SNYDER, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. **164,944**, dated June 29, 1875; application filed April 16, 1875.

To all whom it may concern:

Be it known that I, AUGUST SNYDER, of Allegheny, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Stop-Cocks; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a sectional view of my improved stop-cock.

Such cocks as that shown in the drawing, and to this class of cocks my improvement particularly relates, are sometimes used in places where, from corrosive or other causes, they get "stuck," as it is called, or cannot by ordinary appliances be moved or rotated. In such cases the nut, which, being screwed onto the stem or lower or smaller end of the plug or key, holds the latter to its seat, is loosened or removed, in order that by a blow of a hammer the plug or key may be loosened. This, if—as is usually the case—the communicating pipes are filled with fluid, results in the escape and waste of the fluid before the plug or key can be again brought down to its seat. My improved cock is gotten up with reference to obviating these difficulties.

The body B of the cock is made with the usual tapped connections *b b*, and the key or plug D has the usual ports *d d* in any desired number, order, size, or arrangement. This plug or key is, however, inverted in arrangement, in this respect differing from those heretofore in common use, so that the rectangular or other shaped head or end *a* to which the wrench or other device is to be applied for the purpose of turning the cock, is made on the smaller end. The opposite or larger end comes in the chamber *c*, which chamber is closed by a screw-plug or cap, D′. Inside the screw-plug is a socket or recess, c^1, or other suitable device for holding in place and guiding in action a spring, c^2, which latter, bearing at one end against the screw-plug or other fixed device, bears and exerts its expansive force, through an interposed step, *e*, and stem *e′*, against the larger end of the plug or key D, so as to press the same well up to its seat. The cock thus constructed is operated and used in the transmission of fluids of any kind in the usual way; but in case it becomes stuck or inoperative, from corrosion or other cause, a blow of a hammer, or in some cases the application of pressure on or to the outer end of the head *a*, will suffice to loosen it so as to secure its continued operation. The spring *c* will yield sufficiently to permit the plug or key to be thereby forced or jarred from its seat, so as to break the lock formed by corrosion, and at once force it back onto its seat in position and condition for use without trouble, labor, or waste of time or escape of fluid.

My improvement, while applicable to pipe of any kind for the transmission of fluids, is especially useful in connection with oil-pipe and pipe lines, where not only is time an element of importance in the transmittal, but also the material itself possesses a value such as to render loss by waste exceedingly objectionable. Also, as this improvement may be applied to rotating cocks generally, it will be found useful as a steam-cylinder cock, or in other machinery where the seats are liable to become cut in use. In such cases the engineer or other employee, by pressing slightly downward at the same time that he turns the cock, can slacken the plug or key, so that rotating with less friction it will be less liable to cut, and will wear so much the longer.

The plug D, it will be observed, is made tapering from its larger to its smaller end, and at the smaller end it is made without any end bearing, so as to give no resistance to the upward pressure of the spring, except such as results from its bearing against the taper seat in which it works. Consequently, as by regrinding and friction the plug becomes smaller and the seat larger, the spring bearing against the opposite end keeps it always seated with a close joint. The absence of an end bearing at the smaller end enables the spring to perform a function not found in previous cocks of a similar class.

I claim as my invention—

In a rotary stop-cock, a conical or taper seat, open at its smaller end, in combination with a plug, D, having its turning head at the

smaller end, and a spring, *c*, and step *e* at its larger end, whereby not only can the cock be loosened by a blow or pressure on its smaller end, but also will operate with a minimum of friction, and be pressed to its seat by the spring under the varying diameters caused by wear and regrinding, substantially as set forth.

In testimony whereof I have hereunto set my hand.

AUGUST SNYDER.

Witnesses:
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