(No Model.)

P. H. GUNDERMANN.

STOP COCK BOX.

No. 401,493. Patented Apr. 16, 1889.

Fig. 2.

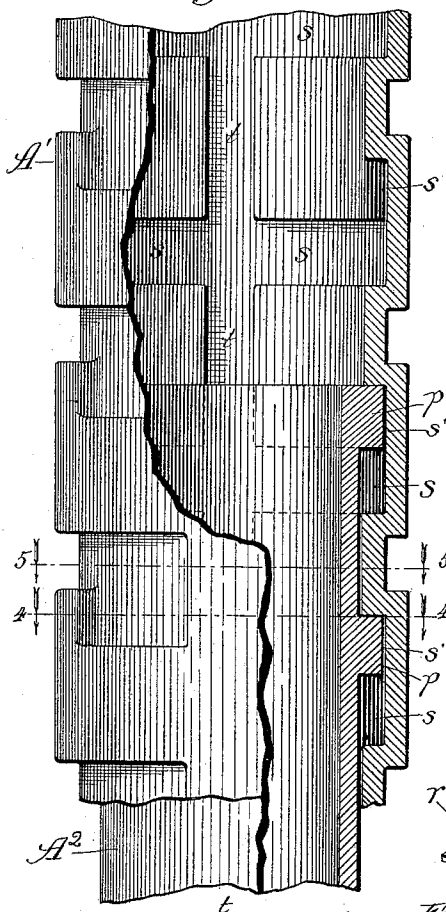


Fig. 1.

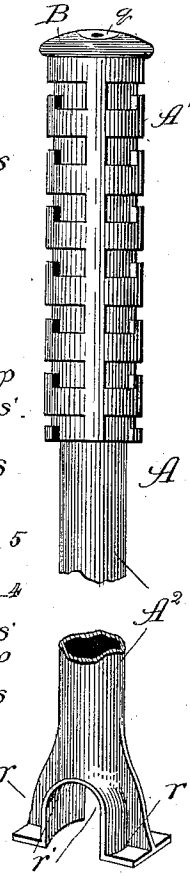


Fig. 3.

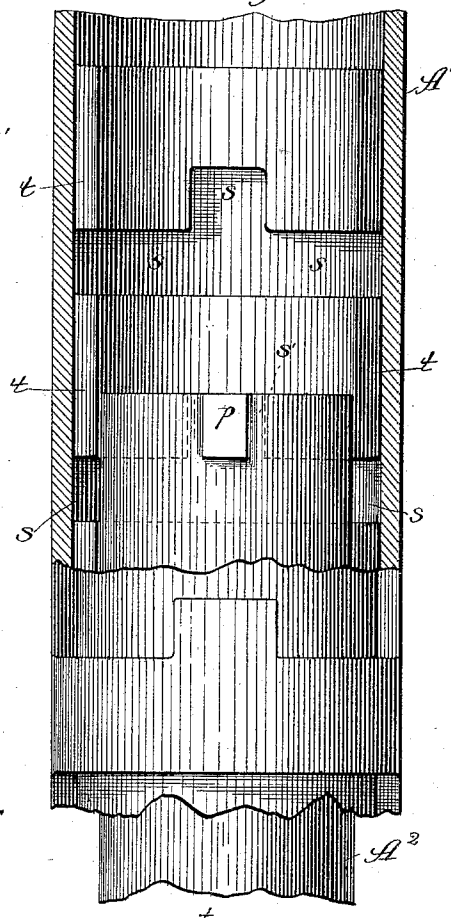


Fig. 4.

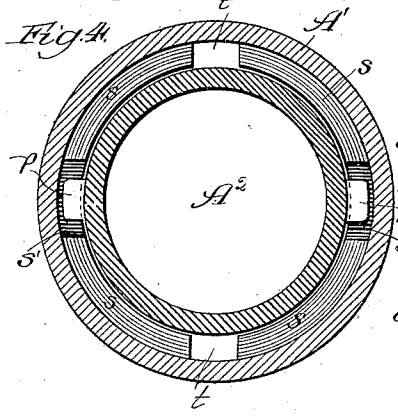


Fig. 6.

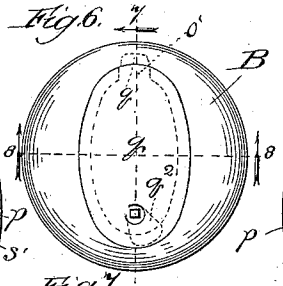


Fig. 5.

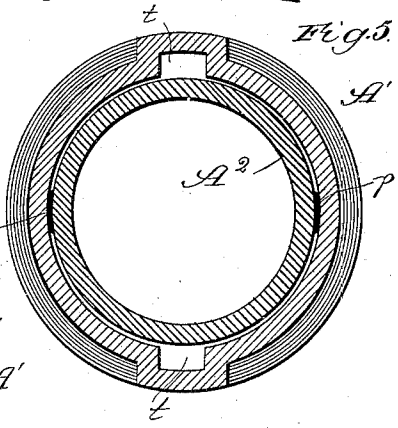


Fig. 7.

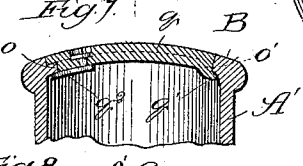
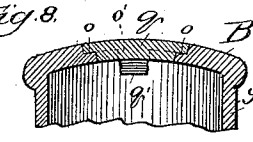


Fig. 8.



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UNITED STATES PATENT OFFICE.

PHILIP H. GUNDERMANN, OF CHICAGO, ILLINOIS.

STOP-COCK BOX.

SPECIFICATION forming part of Letters Patent No. 401,493, dated April 16, 1889.

Application filed November 9, 1888. Serial No. 290,354. (No model.)

To all whom it may concern:

Be it known that I, PHILIP H. GUNDERMANN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Stop-Cock Boxes, of which the following is a specification.

My invention relates to an improvement in so-called "stop-cock boxes" or "service-boxes" for use in connection with underground water or gas pipes, to afford protection and ready access to the stop-cocks in the latter, whereby their valves may be opened and closed from the surface of the ground. A stop-cock box comprises, usually, a metal tube arranged at one end to fit over the stop-cock of an underground pipe and extend at the opposite end above the surface of the ground, where it is provided with a removable cover. To enable the boxes to be adjusted according to the different depths at which pipes are laid, it is customary to make them in two sections to fit one within the other, whereby they may be lengthened or shortened.

Great inconvenience is frequently experienced with the stop-cock boxes in ordinary use, owing, for the most part, to the rusting together of the telescoping sections composing them, which renders the lengthening or shortening of the tube by the adjustment of the sections a matter of considerable difficulty.

My object is to provide a stop-cock box of novel construction whereby the sections may be quickly adjusted to lengthen or shorten the box and rust between the sections shall produce no material obstacle to the operation; and to this end my invention consists in the general construction of my improved device, as well as in details of construction and combinations of parts.

In the drawings, Figure 1 is a broken view, mostly in elevation, of a stop-cock box of my improved construction, the base portion only being shown in perspective; Fig. 2, an enlarged broken and partly-sectional view in elevation of a portion of the device, taken from one side; Fig. 3, a similar view taken from a side at a right angle to that shown in Figs. 1 and 2; Fig. 4, a section taken on the line 4 4 of Fig. 2 and viewed in the direction of the arrows; Fig. 5, a section taken on the line 5 5 of Fig. 2 and viewed in the direction of the arrows; Fig. 6, a plan view of the head detail, illustrating by dotted lines the preferred means for removably securing the cover in place; and Figs. 7 and 8, sections taken, respectively, on the lines 7 and 8 of Fig. 6, and viewed as indicated by arrows.

A is the stop-cock box, comprising an upper outside section, A′, and a lower inside section, A^2. The section A′ comprises a metal tube provided on its inner surface with, preferably, two diametrically-opposite vertical grooves, *t*, and with a series of horizontal annular grooves, *s*, which should be equidistant apart, and which communicate with the grooves *t* and correspond with them in depth. Each annular groove is provided on its upper side at diametrically-opposite points, at right angles to the vertical grooves *t*, with sockets *s′*. The section A′ is open at its lower end, and is provided at its upper end with a head, B, which may be integral with the section and have an opening arranged to afford a seat for the removable cover *q*, as hereinafter described. The series of annular grooves *s* reaches, preferably, nearly the full length of the section A′, and the outer surface of the latter may be shaped, as shown, to conform substantially to the internal grooves and sockets, whereby a saving in metal is effected and the weight of the section greatly reduced. The section A^2 comprises also a metal tube of an outer diameter somewhat smaller than the inner diameter of the section A′, whereby it may be slid readily within the latter when inserted, as hereinafter described. At its lower extremity the section A^2 is formed with flanges, as shown, to afford an enlarged base, *r*, provided with openings *r′* on opposite sides. Toward its upper extremity the section A^2 has formed upon its outer surface lugs *p*, arranged in horizontal pairs, one lug of each pair being diametrically opposed to the other lug. The lugs *p* are of a width which will allow them to be slid readily in the groove *t*, and of a length which will admit of their ready movement in the grooves *s*.

In adjusting the sections together to form the extensible box the vertical grooves *t* in the section A′ are brought coincident with

the lugs p of the section A^2, when the upper section may be slid over the under section to any desired extent. When the box is rendered of the length desired, the section A′ is turned to cause the lugs p to enter the nearest horizontal grooves s and the turning continued until sockets s' are brought coincident with the lugs p, over which they are permitted to drop, thus preventing further turning and locking the sections together. When it is desired to separate the sections or to lengthen or shorten the box, the section A′ is raised to bring horizontal grooves s coincident with the lugs p, after which the said section may be turned to the right or left to bring the vertical grooves t coincident with the lugs.

I prefer for the sake of strength to employ two or three pairs of lugs, p, which must necessarily be in direct vertical line with each other and of a distance apart to correspond with the distance between grooves s. The section A^2 and its lugs fit loosely within the section A′, so that the only direct contact between the sections is where the upper surfaces of the lugs p support the outer section, A′, at the sockets s', and therefore, as in separating the sections or changing the length of the box, the initial motion is occasioned by a direct pull to raise sockets s' from engagement with the lugs p. Should rust have formed between the comparatively small surfaces of contiguous parts it would not materially resist their being separated.

The opening in the head B is preferably oblong in shape, and its edge is rabbeted, as shown, to afford a seat, o, which extends nearly around the opening, leaving a narrow space between its ends at o'. The cover q is also oblong in shape and rabbeted at its edge to fit into the seat o. At one end the cover q has a lip, q', which, when the cover is in position, projects underneath the adjacent edge of the head B, and toward its opposite end the cover is provided with a latch, q^2, which may be turned by means of a key (not shown) under or away from the head. As thus constructed, the cover may be firmly secured in place and readily removed when it is desired to have access to the box.

In adjusting my improved stop-cock box in operative position the openings r' in the base r are caused to fit over the pipe, usually a service-pipe, on opposite sides of a valve, the stop-cock of which thus extends upward into the section A^2, by which it is effectively incased. The section A′ is then placed in position and adjusted to the desired height, as before described, whereby, when the ground is filled in to the proper level, the head B will protrude or remain uncovered. When it is desired to open or close the valve, the cover q of the box is removed and a rod of sufficient length, provided in its end with a key to fit the stop-cock, is inserted, and the opening or closing of the valve effected by turning in the usual manner.

While one vertical or longitudinal groove t in the section A′ and only one or more lugs p upon one side of the section A^2 would, in a measure, answer the purpose of the construction above described, and would be within the spirit of my invention, the latter is preferable for purposes of strength and ease of operation.

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

1. A stop-cock box comprising, in combination, relatively-extensible sections A′ and A^2, the upper section, A′, having on its inner surface one or more longitudinal grooves, t, annular grooves s, communicating with the grooves t, and sockets s', extending upward from the annular grooves, and the lower section, A^2, extending into the section A′, and having one or more lugs, p, on its outer surface, to enter the grooves t and s and sockets s', substantially as and for the purpose set forth.

2. A stop-cock box comprising, in combination, relatively-extensible sections A′ and A^2, the upper section, A′, having on its inner surface one or more longitudinal grooves, t, annular grooves s, communicating with the grooves t, and sockets s', extending upward from the annular grooves, and having a head, B, integral with the section A′, and provided with an opening, a removable cover, q, for the opening, having a lip, q', and a latch, q^2, to engage with the under side of the head B, respectively, at opposite sides of the opening, and the lower section, A^2, extending into the section A′, and having one or more lugs, p, on its outer surface, to enter the grooves t and s and sockets s', substantially as and for the purpose set forth.

PHILIP H. GUNDERMANN.

In presence of—
M. J. BOWERS,
J. W. DYRENFORTH.