J. W. CALHOUN.

STOP COCK BOX.

APPLICATION FILED FEB. 14, 1919.

1,325,393.

Patented Dec. 16, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

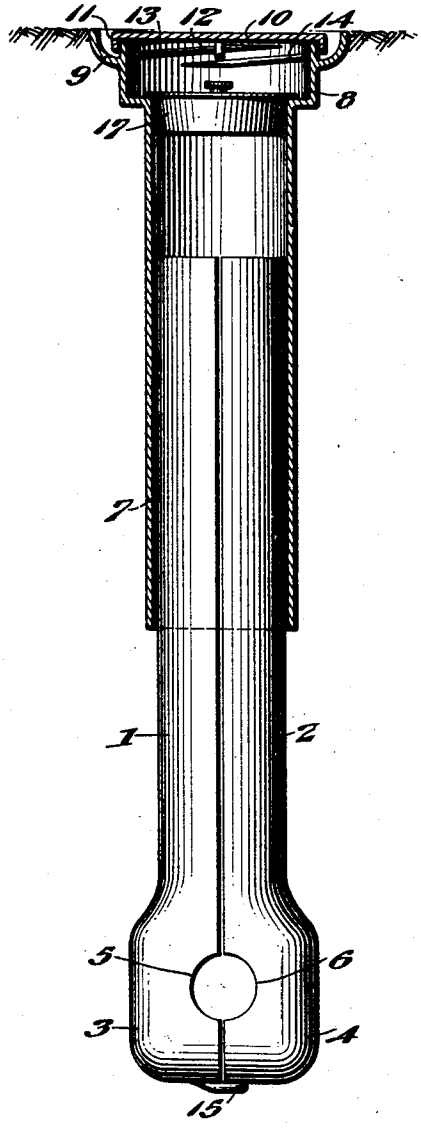
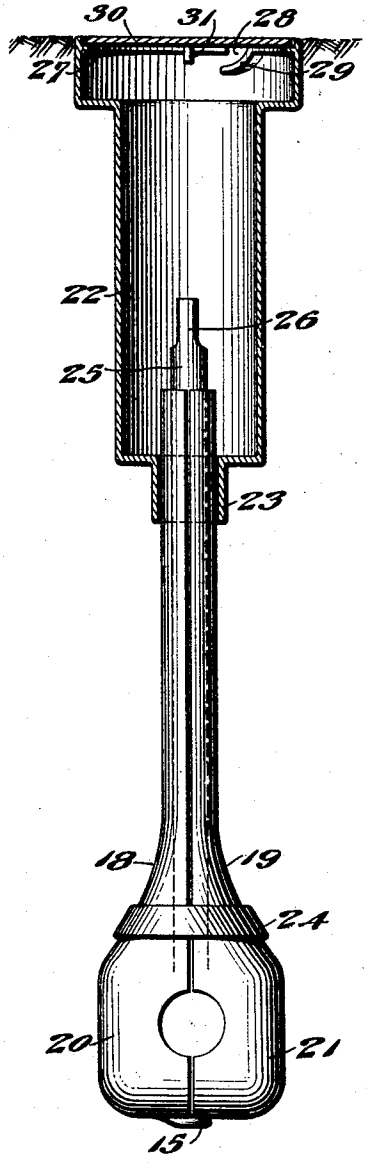


Fig. 2.



Inventor

John W. Calhoun

By Lloyd W. Pateh

his Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

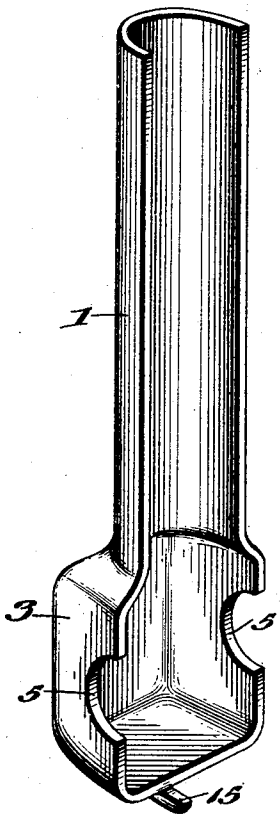


Fig. 5.

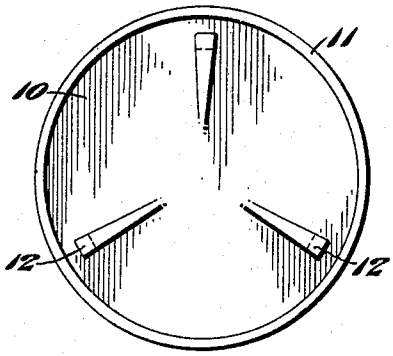


Fig. 6.



Fig. 4.

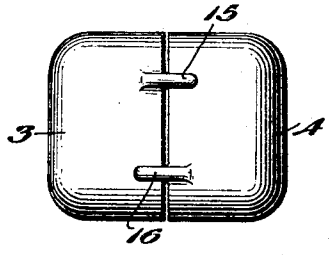
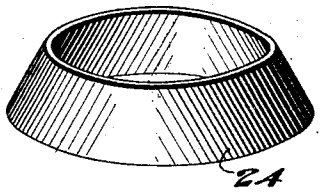


Fig. 7.



Inventor

John W. Calhoun

By Lloyd W. Patch

his Attorney

UNITED STATES PATENT OFFICE.

JOHN W. CALHOUN, OF CHESTER, PENNSYLVANIA.

STOP-COCK BOX.

1,325,393. Specification of Letters Patent. Patented Dec. 16, 1919.

Application filed February 14, 1919. Serial No. 277,071.

To all whom it may concern:

Be it known that I, JOHN W. CALHOUN, a citizen of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented new and useful Improvements in Stop-Cock Boxes, of which the following is a specification.

This invention pertains to stop cock boxes, and relates particularly to boxes for the protection of stop cocks and valves in service or other pipe lines laid underground.

The primary object of my present invention is to provide a box which is made up in sections readily fitted to a valve and which when assembled will form a complete casing beneath and around the cock or valve and will present an opening through which access is had to the same for operation.

A further object is to construct the parts in such a way that when assembled these separate parts are interfitting and are held against casual separation or accidental displacement.

A still further object lies in providing a cover for the box and arranging locking means by which the cover is clamped and secured in a closed position.

Yet another object resides in providing with the box structure, a stem to be fitted in conjunction with the stop cock or valve when the box is assembled, and which will give greater facility in the operation of the cock or valve.

With these and other objects in view, which will appear from the drawings taken with the specification and claims, my invention embraces novel features of construction and combinations of parts which will now be set forth.

In the drawings:

Figure 1 is an elevational view partly in section showing one embodiment of my invention.

Fig. 2 is a view similar to Fig. 1 illustrating another adaptation.

Fig. 3 is a perspective view of one of the cock incasing members.

Fig. 4 is a view in elevation of the valve incasing members as the same are assembled.

Fig. 5 shows an elevation of the lower side of the cover.

Fig. 6 is a fragmentary sectional view to better illustrate the locking lugs on the cover.

Fig. 7 is a perspective view of the retaining ring used with the adaptation illustrated in Fig. 2.

Cock or valve incasing members 1 and 2 are made of semi-cylindrical form throughout the greater portion of their length, and at one end are enlarged at 3 and 4, to receive and clear the cock or valve, notches 5 and 6 being provided in this enlarged portion to form a passage through which the line or service pipes in which the cock or valve is connected are led.

When incasing members 1 and 2 are fitted together they present a substantially cylindrical main portion closed and enlarged at one end, with pipe openings provided in the enlarged portion by reason of the notching of the same. A tubular casing 7 is made sufficiently large to slide over the cylindrical portion of the valve incasing members and at its upper end is widened out to form a shoulder 8. Around its edge this enlarged portion has an upstanding flared flange 9.

A cover 10 is provided with a rim flange 11 which fits within the recess between the enlarged portion of tubular casing 7 and flange 9, when the cover is placed to close the upper end of the casing. Cover 10 has, on its lower side, a plurality of locking lugs 12, each of which is formed to be hook shaped, and within the enlarged portion of casing 7 diagonally extending ribs 13 are provided. These ribs are so located that when the cover is fitted in place and is turned locking lugs 12 fit therebeneath and clamp the cover down to be secured in place and held against displacement. By reason of the fact that rim flange 11 is within the recess bounded by flange 9, the cover can be easily and quickly removed, this recess allowing room for the fingers to be inserted so that flange 11 can be grasped in turning the cover. Also, flange 9 forms a curb which holds back brick, cement or other material of walks or paving, and the earth, thus making the cover accessible at all times without the necessity of chipping away or digging around the same. To further facilitate manual removal, ribs 14 extending substantially parallel with ribs 13 are provided to engage with lugs 12 as the cover is turned to unlock these lugs, through which engagement the cover is raised sufficiently that it can be grasped beneath the rim flange and lifted from place.

While tubular casing member 7 will hold the semi-cylindrical portions of valve incasing members 1 and 2 properly assembled, these members are subject to slip vertically

with respect to one another, to guard against which retaining lugs 15 and 16 are provided on the adjacent edges of the bottom portions of members 1 and 2 to insure that these members will always be retained in proper positions with the notched openings registering around the pipe to the cock and with the bottom as well as the sides closed against ingress of earth to the enlarged valve receiving portions of said incasing members.

In the use of this adaptation, the incasing members 1 and 2 are fitted to close around a valve or cock in a pipe line laid underground, and before backfilling, after which tubular casing 7 is slipped down over the semi-cylindrical portions, members 1 and 2 being supported on the pipe and lugs 15 and 16 insuring against vertical displacement. When the trench in which the pipe line is laid is refilled, the earth will pack in and around members 1 and 2 but will be excluded from the interior thereof, and as backfilling the tubular casing member 7 is adjusted vertically to bring the open top of the enlarged portion to the desired elevation. When the earth of the refill is packed around tubular casing 7 it will be held in this vertical adjustment, further support being given by the enlargment of the upper end and by flange 11. With this assembly of parts the box presents a tubular passage through which access is had to the cock or valve, by use of a long key, cover 10 being efficient to exclude foreign matter which might clog the cock and interfere with operation of the same. As an additional safeguard against dirt and foreign matter, a secondary cover 17 shaped to fit the tubular extent of portion 7 and rest upon shoulder 8 may be provided.

In the adaptation illustrated in Fig. 2, the arrangement of the parts is similar to the showing in Fig. 1, however, the semi-cylindrical or tubular portions of the incasing members 18 and 19 are smaller and from these portions the members widen out in a gradually tapered shoulder to merge into the enlarged portions 20 and 21, within which the cock or valve is incased. The tubular casing 22 is somewhat larger than the semi-tubular portion of members 18 and 19, and the lower end of this casing is partly closed, a flange or collar 23 being provided around the opening of the closed end. When the reduced ends of members 18 and 19 are fitted through the opening of the flange or collar, these portions will be held against spreading, vertical displacemnt being prevented by the provision of lugs shown in Fig. 4. A retaining ring 24 is tapered on its inside to conform substantially to the gradually tapered shoulder of members 18 and 19, and following placing of these members about a cock or valve, this internally tapered ring is placed over the semi-cylindrical extensions of the members to rest upon the tapered shoulder, members 18 and 19 being thus drawn into and retained in proper relation. As the earth pressure is upon ring 24, this ring will be forced down against the tapered shoulder, and when the box is in use all possibility of members 18 and 19 separating at their lower ends is positively precluded. Also, separation of the upper ends is prevented by the fact that these ends are received in rather snug fit in the opening of sleeve 23.

This adaptation of box will be placed in use in the same way as is set forth in connection with the embodiment of Fig. 1, and for operation of the stop cock or valve a long key can be employed. However the structure adapts itself particularly well to the use of an extension rod or key shaft 25 revolubly received in the opening of the semi-cylindrical portions of members 18 and 19. This extension rod has the upper end 26 thereof made of polygonal form and extended up into the tubular casing 22 so that it is readily accessible through the open top thereof. The lower end of extension rod 25 has a socket shaped to receive the turning portion of the cock or valve, and where desired a pin might be employed to secure said extension rod in conjunction with the cock or valve.

The tubular casing 22 can be widened out around the open upper end, as shown, or the casing might be of the same diameter throughout its length. Around the opening the casing terminates in a straight edge and a ring-like flange 27 is provided slightly below the straight edge, this flange being cut through at 28, at two or more points. Cam portions 29 are provided at one side of each of the openings 28. A cover 30, similar to cover 10 with the exception that flange 11 is omitted, has locking lugs 31 on the lower side thereof spaced to correspond to the location of openings 28 and each of these lugs is made hook shaped. When cover 30 is placed with lugs 31 dropping in openings 28, the lugs bear upon cams 29 and as these cams are curved the cover is turned to bring the hook portions of said lugs under flange 27, the cover being thus automatically turned to a locked position. As the cover is turned in an opposite direction, lugs 31 ride up on cam portions 29 and are raised through openings 28 to sufficiently elevate the cover that it can be manually grasped for removal.

The manner of fitting the parts for use, and the function of each have been clearly defined in the preceding discussion, in view of which it is not thought that recapitulation need here be indulged in; however, while I have described specific embodiments and have mentioned only certain possible modifications it will be appreciated

that I do not limit myself to such specific detailed structure as herein set forth, but may resort to practical modifications falling within the scope of the appended claims.

I claim:

1. A stop cock box including with a pair of incasing members to be fitted together to inclose a stop cock and to present a tubular extension through which access is had to said cock, a tubular casing fitted over said tubular extension to retain said incasing members in closed relation, said incasing members having a tapered shoulder adjacent the lower ends thereof, and a tapered ring to be fitted over the tubular extensions of said incasing members to fit the tapered shoulder thereof and retain said members against spreading.

2. A stop cock box including with a pair of incasing members to be fitted together to inclose a stop cock and to present a tubular extension through which access is had to said cock, a tubular casing fitted over said tubular extension to retain said incasing members in closed relation, and lugs carried by said incasing members by which the same are retained against vertical displacement.

3. A stop cock box including with a pair of incasing members to be fitted together to inclose a stop cock and to present a tubular extension through which access is had to said cock, a tubular casing fitted over said tubular extension to retain said incasing members in closed relation, said incasing members having a tapered shoulder adjacent the lower ends thereof, and a tapered ring to be fitted over the tubular extensions of said incasing members to fit the tapered shoulder thereof and retain said members against spreading, and means by which said incasing members are retained against vertical displacement.

4. A stop cock box including with valve incasing members, a tubular casing fitted in conjunction with said incasing members and having an upstanding flared flange around the open end thereof, a cover provided with a flange at its edge to fit within the flared flange and having hook-shaped lugs, and diagonally extending ribs within said casing member to engage with said lugs to lock said cover in place when turned in one direction and to raise the same to a position to be gripped for removal when turned in an opposite direction, the arrangement of the parts being such that the flared flange extends outside of the cover and leaves clearance therearound for gripping of the cover.

5. A stop cock box including with a pair of incasing members shaped at one end to receive a stop cock and terminating at the remaining end in a tubular extension with a tapered shoulder adjacent the enlarged portion, means to hold the tubular extension portion of said members together, and a tapered ring fitted to the tapered shoulder of said members to retain the cock receiving portion against spreading.

6. A stop cock box including with a pair of incasing members shaped at one end to receive a stop cock and terminating at the remaining end in a tubular extension with a tapered shoulder adjacent the enlarged portion, means to hold the tubular extension portion of said members together, a tapered ring fitted to the tapered shoulder of said members to retain the cock receiving portion against spreading, and lugs carried by said incasing members to retain the same against vertical shifting with respect to each other.

In testimony whereof I affix my signature.

JOHN W. CALHOUN.