J. P. FARLEY.

CLOSURE FOR CURB BOXES.

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1,229,429.

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Fig. 1.

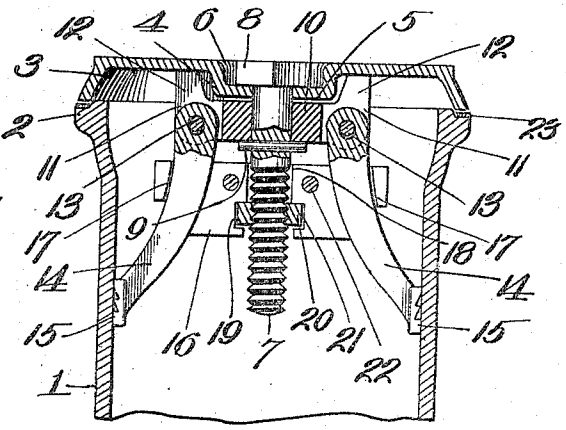


Fig. 2.

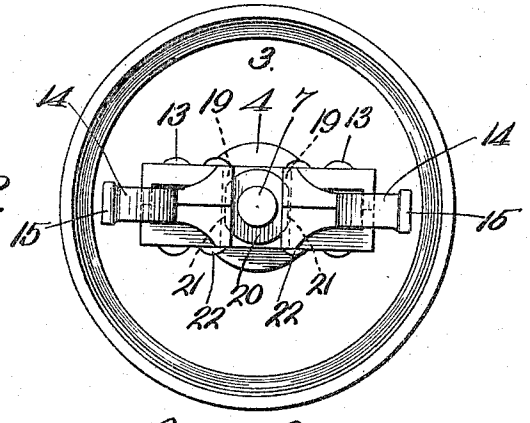


Fig. 3.

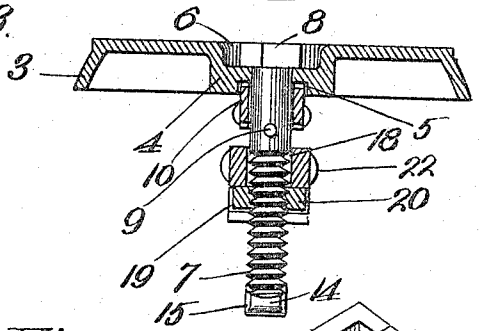
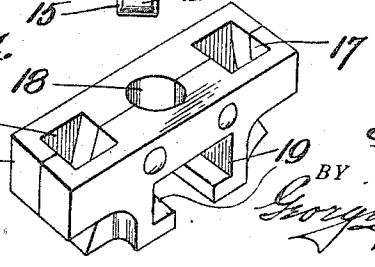


Fig. 4.



WITNESS

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CLOSURE FOR CURB-BOXES.

1,229,429. Specification of Letters Patent. Patented June 12, 1917.

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To all whom it may concern:

Be it known that I, JOHN P. FARLEY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Closures for Curb-Boxes, of which the following is a specification.

This invention relates to closures for curb boxes, stand pipes and the like and has for its object to produce an efficient device of this character which shall be serviceable for use as a repair outfit. A further object is to produce a device comprising a pair of jaws, and connections between the jaws and cap whereby the former are first caused to grip the box or pipe and then utilize the latter as an anchor or resistance for completing the closing action of the cap.

Another object is to produce a device subject to removal from operative position only by the operation of a key.

With these general objects in view, the invention consists in certain novel and peculiar features of construction and combinations of parts as hereinafter described and pointed out in the appended claims, and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a central vertical section of a curb-box or stand pipe equipped with a closure embodying the invention.

Fig. 2, is an inverted plan view of the device removed from the curb box or stand pipe.

Fig. 3, is a vertical section of the device taken at right angles to the section shown by Fig. 1.

Fig. 4, is a detail view of the bar for operating the clamping jaws in one direction to secure the closure in position, and in the opposite direction to permit the closure to be removed from position.

Referring to the drawing in detail, 1 indicates the upper end of the curb box or stand-pipe provided with an upwardly facing annular shoulder 2 for engagement by a cap 3 for closing the upper end of the box or pipe, said cap having a central depending boss 4 having a diametric bifurcation 5 and a recess 6, the latter occurring at the upper or external side of the cap.

7 is a bolt extending vertically through and journaled in the boss and provided at its upper end with a head 8, preferably of pentagonal form which is that form generally adopted over which keys, not shown, in common use, are adapted to fit for turning the bolt in one direction or the other, and extending through said bolt is a pin 9.

10 is a crosshead fitting loosely on the bolt and within the bifurcation 5 of the boss 4 of the cap, the pin 9 retaining the crosshead in position. The crosshead is bifurcated at each end at 11, and at opposite sides of the said bifurcations is provided with upwardly projecting arms 12 engaging the underside of the cap, and bridging the ends of the crosshead is a pair of pivot pins 13 on which are pivotally suspended a pair of downwardly and outwardly curved jaws 14 provided with serrated lower ends or teeth 15 for gripping the curb box or stand pipe firmly at diametrically opposite points for a purpose hereinafter explained.

16 is a slide bar provided at its ends with downwardly diverging openings 17 receiving the said jaws 14, the inner or upwardly converging sides of said openings serving to impart outward swinging movement to said jaws, when said bar is moved upward, and the outer downwardly diverging sides of said openings engaging the outer edges of such jaws to impart inward swinging movement to the latter when the said bar is moved downward.

The said bar is provided with a central opening 18 loosely receiving the bolt 7. The cross bar is provided at diametrically opposite points with a pair of parallel horizontal channels 19 communicating with the central opening 18 at opposite sides thereof and receiving the opposite sides of a nut 20 engaging the bolt, which nut is thus compelled to move upward and downward with bar 16, and in order that the nut shall be incapable of turning when the bolt is turned the opposite sides of the nut are flattened as at 21 and at such sides fit closely against the bases of the channels 19, the bar 16 thus serving to prevent rotation of the nut.

In the preferred construction the nut is of brass or other non-corrosive material in order to guard against such corrosive action as would render it impossible for the operator to turn the bolt. It is also preferred that the bar 16 shall be composed of two members permanently fastened together by rivets 22 as shown.

When the cap is to be placed in position, the bar 16 will be depressed with relation to the cross head 10 to such an extent that the outer walls of the openings 17 shall hold

the swinging jaws inward far enough to permit their toothed ends to readily pass into the curb box until the movement is arrested by the engagement of the cap 3 with shoulder 2. The bolt is then turned in the proper direction in the nut 20 to effect upward movement of bar 16 so that the inner walls of the openings 17 thereof shall act as a wedge and apply outward pressure on the swinging jaws until the toothed ends of the latter firmly grip the box at diametrically opposite points. Immediately after this action is effected, the continued turning of the bolt results in pulling the cap downward on shoulder 2, there being sufficient play in the connections to accomplish this last-named result, the play being preferably provided through an elongation of the pivot holes in jaws 14 as will be seen by reference to Fig. 1.

If the closure is made on a curb box from which gas may be likely to escape it is desirable to interpose a gasket 23 between the shoulder 2 and the cap.

Reverse operation of the bolt of course effects downward movement of the bar 16 and the consequent withdrawal of the jaws from engagement with the wall of the box to permit the cap to be removed from position.

From the above description it will be apparent that I have produced a closure cap embodying the features of advantage enumerated as desirable, and which can be readily and quickly secured in or removed from position, and while I have illustrated and described the preferred construction of the device, it will be apparent that it is susceptible of minor changes in form and proportion without departing from the principle and scope of the appended claims.

I claim:—

1. The combination with a curb box of a cap fitting thereon, a headed bolt extending vertically down through the cap and into the box, a cross-head journaled loosely on the bolt below the cap and non-rotatable with respect thereto, means secured to the bolt for holding the cross head against the underside of the cap, a pair of downwardly diverging jaws pivoted to opposite ends of the cross-head, a nut engaging the bolt below the cross-head, and a bar fitting slidingly on the bolt and provided with opposite channels receiving the nut and preventing rotatable movement thereof and provided also with downwardly diverging end openings loosely receiving the swinging jaws intermediate the ends thereof.

2. The combination with a curb-box, of a cap fitting thereon and provided centrally with a recess at its upper side and with a depending boss diametrically bifurcated, a bolt journaled in and extending through the cap and boss thereof and provided with an angular head occupying said recess and bearing upon the cap, a cross head fitting in the bifurcation of the boss and journaled on said bolt, the opposite ends of said cross-head being bifurcated and provided at opposite sides of the bifurcations with upwardly projecting arms engaging the underside of the cap, a pair of swinging jaws pivoted in the bifurcated ends of the cross-head, means secured to the bolt for preventing downward movement of the cross-head on the bolt, a cross bar fitting loosely on the bolt below the cross-head and provided with downwardly diverging openings through which said jaws extend, the inner walls of said openings being adapted to impart outward swinging movement to the jaws when said bar is moved upward and the outer walls of said openings being adapted to impart inward swinging movement to the jaws when said cross bar is moved downward, said cross bar being provided with opposite parallel channels, and a nut fitting non-rotatably in said channels and engaging said bolt and adapted when the latter is turned in one direction or the other to impart vertical movement in one direction or the other to said crossbar.

3. A closure cap for curb boxes or the like, comprising a cap having a central opening and a central depending boss, the latter being bifurcated at its lower end, a vertical bolt extending rotatably through the cap and boss thereof and provided with an angular head at its upper end engaging the upper side of the cap, a cross head fitting rotatably on the bolt and within the bifurcation of the boss and provided at its ends with bifurcations and arms projecting upwardly from opposite sides of said bifurcations and engaging the underside of the cap, a pair of jaws pivotally connected at their upper ends in the bifurcations of the cross head, means secured to the bolt for preventing downward movement thereon of said cross head, a bar provided with a central opening loosely receiving the bolt and with a pair of downwardly diverging openings through which said jaws loosely extend and provided also with a pair of parallel horizontal channels at opposite sides of and communicating with said central opening, and a non-corrosive nut engaging the bolt and fitting non-rotatably in the channels of said bar.

In testimony whereof, I affix my signature, in the presence of two witnesses.

JOHN P. FARLEY.

Witnesses:
C. M. ENSMINGER,
G. Y. THORPE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."