No. 671,514. Patented Apr. 9, 1901.

C. R. GRINSTED.

TRAP FOR PIPES.

(Application filed May 11, 1900.)

(No Model.)

Fig. 1.

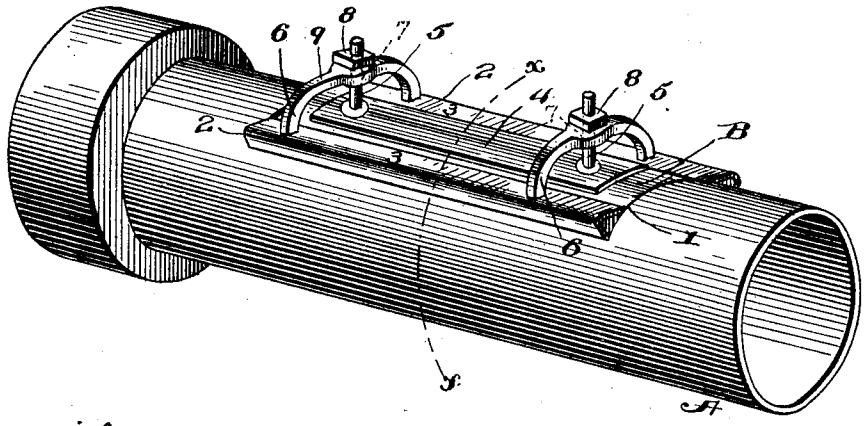


Fig. 2.

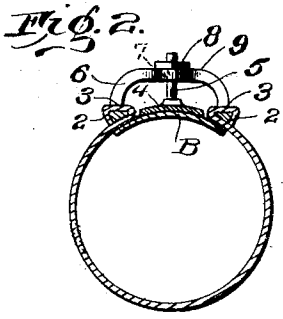
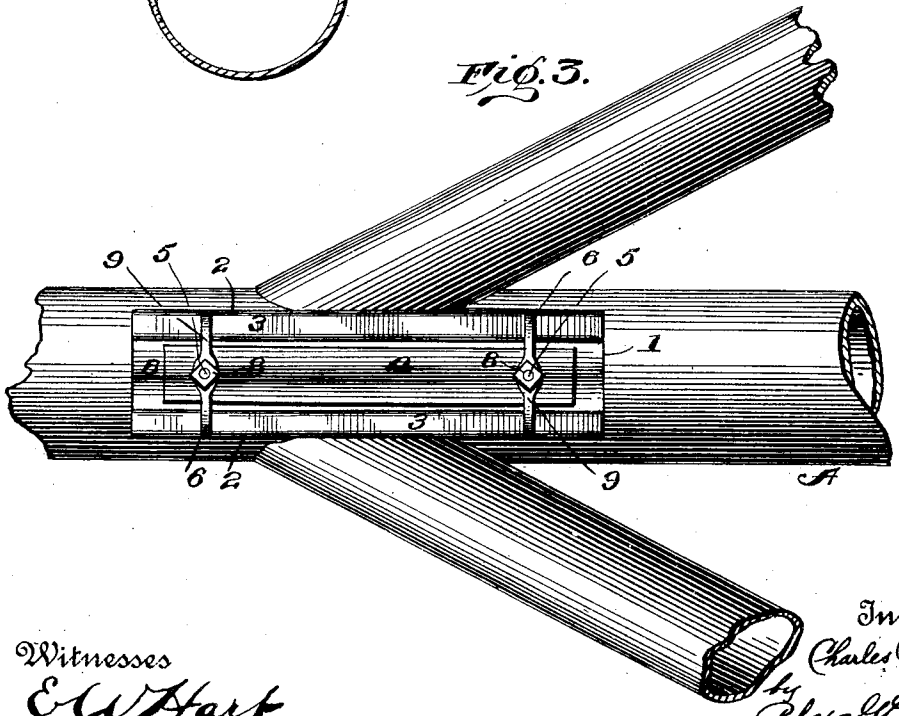


Fig. 3.



Witnesses

E. W. Hart.

Ralph Kingsfield.

Inventor

Charles R. Grinsted

by Rhesa L. Dyer & Co.

his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES R. GRINSTED, OF OKLAHOMA, OKLAHOMA TERRITORY.

TRAP FOR PIPES.

SPECIFICATION forming part of Letters Patent No. 671,514, dated April 9, 1901.

Application filed May 11, 1900. Serial No. 16,386. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. GRINSTED, a citizen of the United States of America, residing at Oklahoma, in the county and Territory of Oklahoma, have invented certain new and useful Improvements in Traps for Pipes, of which the following is a specification.

My invention relates to an improvement in traps for pipes; and it consists of a pipe or tube having an opening formed in its wall, said opening provided with a removable closure adapted to fit the pipe or tube from the interior face thereof and having means thereon whereby it may be securely fastened in its correct position, making an air and water tight joint.

It further consists in certain novel features of construction and combinations of parts, which will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of my invention applied to a pipe, the closure being fastened in position. Fig. 2 is a sectional view through the pipe on the line *x x*, and Fig. 3 is a modification.

A represents a pipe. At a certain predetermined portion of said pipe an opening 1 is made through the wall in the following manner, preferably: A longitudinal slit of the necessary length is cut in the pipe and at either end of the slit another shorter one is made at a right angle thereto, thus forming an I-shaped opening. The free edges or portions thus formed are now bent backwardly over themselves, forming ribs 2 2 and leaving the rectangular opening 1. The manner of bending the free edges or portions backward is such as to leave flat faces 3 3 on the same plane with each other on either longitudinal edge of the opening for a purpose presently to be described. These ribs are hollow when bent thus backward upon themselves, and the hollow spaces are filled in and made solid by pouring solder or molten lead therein, which stiffens the pipe-section and makes it rigid and less liable to bend or break along the edges. It also affords a solid backing for the faces 3 3. The edges of said ribs are secured to the exterior surface of the pipe by soldering or other suitable means. However, the sections of piping or tubing may be cast or molded, so as to leave the opening 1 with raised faces 3 3 on either longitudinal side thereof, said faces being in the same plane with one another.

The closure B consists of a plate of metal or other suitable material curved transversely to correspond to the interior wall of the pipe-section which it is designed to fit. A superimposed piece 4, similarly curved, but of smaller size than the closure, is secured thereto by solder or other convenient means. A screw or bolt 5 is affixed near either end of the closure in an upright position. The numerals 6 6 designate U-shaped clamps of metal, which are slightly enlarged at their centers, and through this portion holes 7 7 are formed. The outer or upper ends 9 9 of these clamps are made flat and in the same plane. Nuts 8 8 are provided for the screws 5 5.

To close the opening 1, all that is necessary is to insert the closure B from the outside into the pipe and draw it tightly against the interior surface of the pipe, so that the outer and upper sides of the closure abut against the interior wall of the pipe. Holding it in such position by means of one screw the clamp is placed over the other in an inverted position, which allows its ends 9 9 to rest upon the faces 3 3. The nut 8 is then placed on the screw and by tightening causes the clamp to brace or press against the face and draws the closure very tightly against the inner face of the pipe. A similar operation is performed to affix the other end of the closure, and a reversal of these operations is all that is necessary to open the trap. Thus it will be seen that a most secure and yet simple, cheap, and easily-operated closure is formed. A layer of putty, rubber, white lead, or felt may be introduced between the closure and the interior wall of the pipe to provide an air and water tight joint, preventing the escape of either fluids or gases.

My improvement is equally applicable to either metal or vitrified pipes, and is a most efficient and desirable device for locating an obstruction which obstructs the proper flow through the pipe. A flexible rod may be inserted from one of these openings or traps either way until the obstruction is found, thus saving the labor of uncovering the entire pipe-line.

My device can profitably be used in field-

drains, where the tile frequently becomes stopped up with grass and occasionally a dead rodent. By laying these traps at intervals of, say, forty feet and making a diagram of the premises it will be an easy matter to locate them.

Fig. 3 shows a three-way sewer or drain with my device located at the intersection or meeting-point thereof, where it would most likely clog or stop up. An obstruction in one of the three branches might easily be located by uncovering the trap and inserting a flexible rod, as hitherto mentioned, into each of the three pipes until the obstructed pipe was found.

It is evident that slight changes might be made in the form and construction of my invention without departing from the spirit and scope thereof, and hence I do not wish to limit myself to the exact details herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a pipe having an opening therein with its edges reinforced on the outside of the pipe whereby the interior surface is unbroken, of a closure of greater size than the opening in the pipe, but capable of insertion therein said closure adapted to embrace the inner edges of the opening and provided with threaded upturned screws or bolts, clamps or spanners reaching across from edge to edge of the opening and having holes therein to receive the screws or bolts, and nuts removably screwed on the screws or bolts to fasten the closure securely in place.

2. The combination with a pipe or tube of sheet metal having an I-shaped slit cut therein, the free edges of the metal formed by this slit folded outward to form an opening and thence back to form ribs at the outer edges of the opening, of a closure, and means for clamping it over the opening.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES R. GRINSTED.

Witnesses:
FRANCIS P. STALLINGS,
C. L. NOLTE.