April 5, 1927. H. W. KLINCK 1,623,843

PUDDLE PLUG

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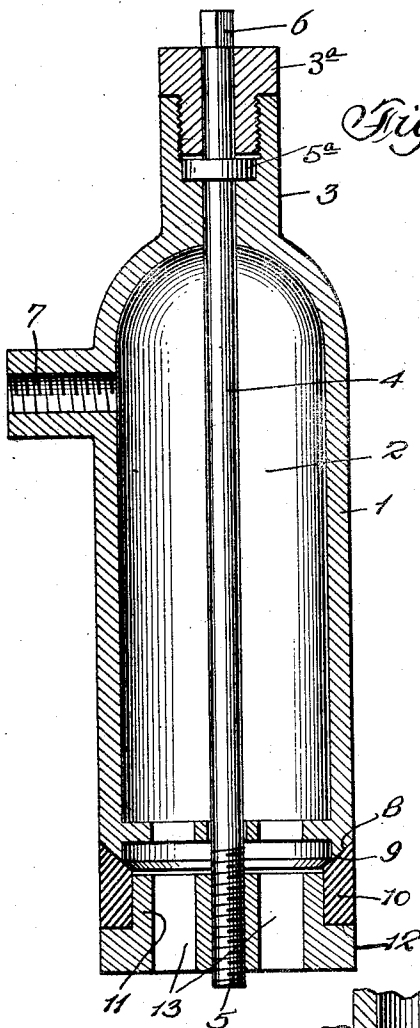


Fig. 1.

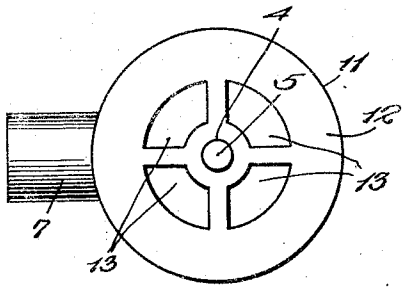


Fig. 3.

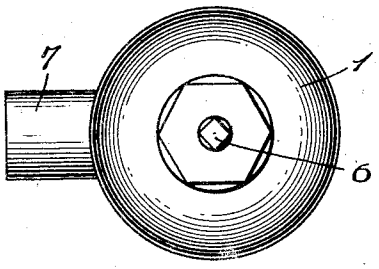


Fig. 2.

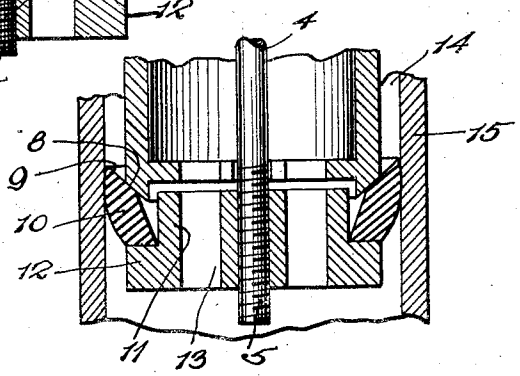


Fig. 4.

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Fig. 5.

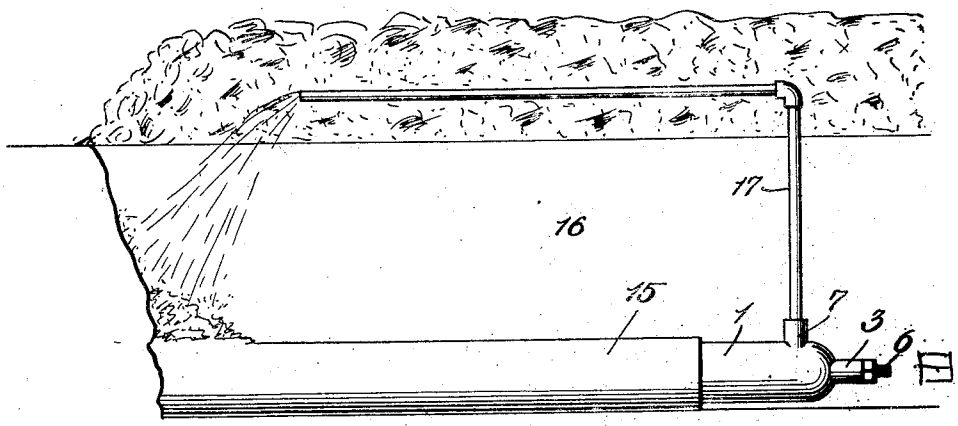
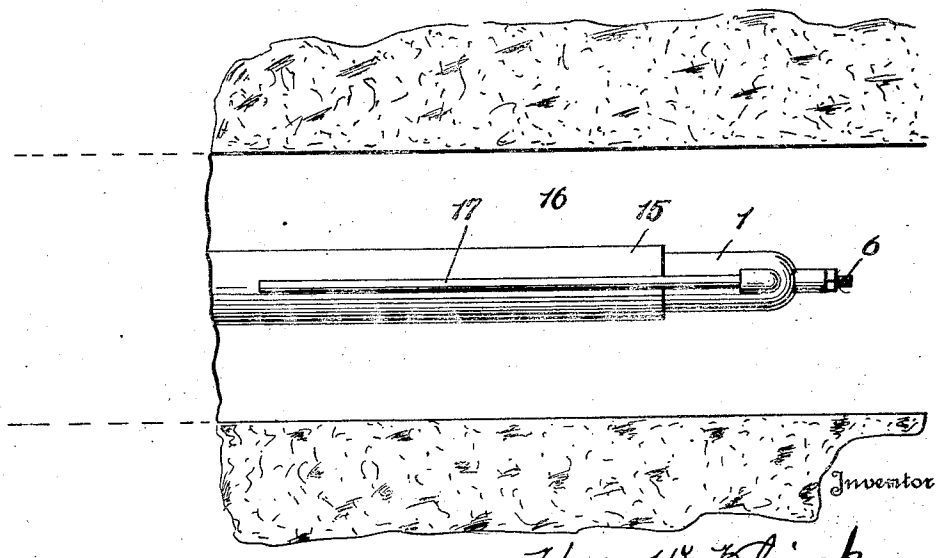


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY W. KLINCK, OF LOGANSPORT, INDIANA.

PUDDLE PLUG.

Application filed January 16, 1926. Serial No. 81,751.

This invention relates to puddle plugs, that is to say, it belongs to that class of devices useful in the back filling of trenches dug in the earth in laying water mains and pipes. In ordinary practice, after the pipe has been laid, it is necessary to replace the earth in the trench, and it is loosely shoveled in and must be firmly tamped down to avoid sinking and leaving a depression at the surface of the roadway. It is a considerable aid to effective refilling of a trench to settle the earth with water, making a much more compact fill. The use of the water is colloquially termed "puddling." For the purpose of carrying out such water treatment of the earth, this invention is believed to be especially convenient and advantageous. Many waterworks men have found it impossible to puddle their ditches without laying a large length of fire hose, or waiting until they have finished laying the job. Sometimes the length may reach one thousand feet or more, thus running chances of accidents and damage suits resulting from the presence of the unfilled trench and persons or machines falling into the same. By the use of this invention the workmen can keep the trench back filled right up to the diggers. This invention may also be used as well for temporary repair jobs in case of a broken main.

In the accompanying drawings of the preferred form of this invention, Fig. 1 represents a sectional view lengthwise of the puddle plug somewhat enlarged.

Fig. 2 is an end view of the end normally exposed.

Fig. 3 is an end view showing the holder element.

Fig. 4 is a longitudinal section of a portion of a water pipe, showing this invention in section therein with the packing ring expanded.

Figs. 5 and 6 are respectively side and top plan views on a reduced scale, showing this invention in operating position in a trench.

Throughout the drawings and description, the same number is used to refer to the same part.

The plug or closure 1 has an internal chamber 2, and terminates at one end in a throat 3, closed by screw plug 3^a and through which passes the operating rod 4, which has a threaded end 5 and a projecting squared end 6 as shown in Figures 1 and 2, or a screw threaded end as shown in Figures 5 and 6, and in either case the rod is adapted to receive an appropriate tool. Within the throat 3 will be noted the collar 5^a fixed on rod 4. The rod is thus held by the screw plug 3^a and the throat against substantial movement lengthwise in either direction.

The closure or plug has the pipe connection 7.

The other end of the plug or closure is the end to be inserted into the uncovered end of the water pipe in the trench. It will be best noted in Figs. 1 and 4 that the end portion of the plug 1 has an inclined edge 8, and against that inclined edge is placed the correspondingly inclined edge portion 9 of a packing ring 10. The packing ring engages and is carried by a holder 11, having a shouldered annular part 12 in which the packing ring is seated. The clamping rod 4 engages the holder as shown. The holder may have the openings 13 to admit water to the chamber of the closure, but this service of water may obviously be equally well accomplished in other ways, and the construction of the holder exactly as described is not intended to limit this invention. Furthermore, the shape of the closure and its size may be readily modified within the purview of this invention.

From Fig. 4 the operation will be best understood. The end of the closure bearing the holder is inserted into the exposed end 14 of a water pipe 15 in a trench 16, and by turning end 6 the packing will be forced against the inclined edge of the closure 1 and thereby expanded into a water tight joint with the interior of the water pipe 15. There are numerous known mechanical arrangements for accomplishing such joints, and this invention is not confined to the exact devices illustrated for the purpose. The water pipe being now filled, it will be understood that the outside or distributing pipe 17 in communication with the pipe connection 7 will lead the water backward to be applied to the earth fill over the water pipes already laid. Or, a given distance of the trench in advance of the end of the water pipe having the closure may be laid and earth filled, and the pipe 17 led in the other direction to puddle such filling, a suitable connection being made thereafter between the laid sections of water pipe. Thus, the outside pipe 17 leads water to any distance

in the general direction of the water pipe.

Having now described this invention, and explained the manner of its use, what I claim and desire to secure by Letters Patent of the United States is:—

1. In a device of the character described, the combination with a water pipe, of a chambered plug for insertion horizontally into the open end of the water pipe, means for rendering the connection between the plug and pipe water tight, and a pipe in communication with the chamber of the plug for leading the water for a distance in the general direction of the water pipe.

2. In a device of the character described, the combination with a water pipe, of a closure for the end of the pipe adapted for insertion horizontally into the end of the said pipe in a trench, means for rendering communication between the closure and water pipe water tight, the said closure having a passage through it and provided with a pipe connection, and a pipe in communication with the said passage in the closure to lead water therefrom for a distance in the general direction of the water pipe.

3. In a device of the character described, the combination with a water pipe, of a closure for the end of the pipe adapted for insertion therein horizontally at the bottom of a trench, means carried by the said device for packing the connection between the closure device and the pipe water tight, the said closure having a passage through it and provided with a pipe connection, a pipe in communication with the said connection and arranged to lead water therefrom backward for a distance in the general direction of the water pipe.

4. In a device of the character described, the combination with a water pipe, of a closure for the end of the pipe adapted for insertion into the said end in a trench, an expansible packing ring, means operable at the bottom of a trench from the outer end of the said device for expanding the said packing to make the joint between the said closure device and the said pipe water tight, the said closure having a passage through it and provided with a pipe connection, a pipe in communication with the said connection and arranged to lead water from the said passage in the closure backward in the general direction of the said water pipe.

5. In a device of the character described, the combination with a water pipe, of a closure for the exposed end of the pipe adapted to be inserted into the end in a trench, an expansible packing ring having normally the same diameter as the closure, means extending through the said closure and operable from the outer end thereof to expand the packing ring to make the joint between the said closure and water pipe water tight, the said closure having an internal chamber, openings formed through the end of the closure to pass water from the water pipe into the said chamber, the said closure having a pipe connection, and a pipe in communication with the said connection to lead water from the said chamber backward in the general direction of the said water pipe.

6. In a device of the character described, the combination with a water pipe, of a closure for the end of the pipe arranged to be inserted therein in a trench, the said closure carrying a packing ring having an inclined edge portion, the said closure having a corresponding inclined edge portion in contact with the said inclined edge portion of the packing ring, a holder for the packing ring, a rod attached to the said holder and passing through the closure, the said rod having a threaded end, means for turning the other end of the rod on the outer end of the said closure whereby the said holder is forced against the packing to expand the same into a water tight joint with the water pipe, the said closure having a passage through it and provided with a pipe connection, the said holder having an opening through it in communication with the said passage of the closure, and a pipe in communication with the said connection for leading water to a distance in the general direction of the said water pipe.

7. In a device of the character described, the combination with a water pipe, of a closure for the end of the pipe adapted to be inserted therein in a trench, the said closure having an internal chamber and a pipe connection in communication therewith, the said closure carrying a packing ring having an inclined edge portion, the said closure having an inclined edge portion arranged in contact with the said edge portion of the packing ring, a holder for the packing ring forming the end of the said closure within the said water pipe and having openings admitting water into the said chamber of the closure, a rod attached to the said holder and passing through the closure, the said rod having a threaded end, means for turning the end of the rod at the outer end of the closure whereby the said holder is forced against the packing to expand the same into water tight connection with the water pipe, and a pipe in communication with the pipe connection of the holder for leading water for a distance in the general direction of the water pipe.

In testimony whereof I affix my signature.

HARRY W. KLINCK.