(No Model.)

# C. HANGSTEN.

## FIRE PLUG.

No. 511,948. Patented Jan. 2, 1894.

Fig. 1

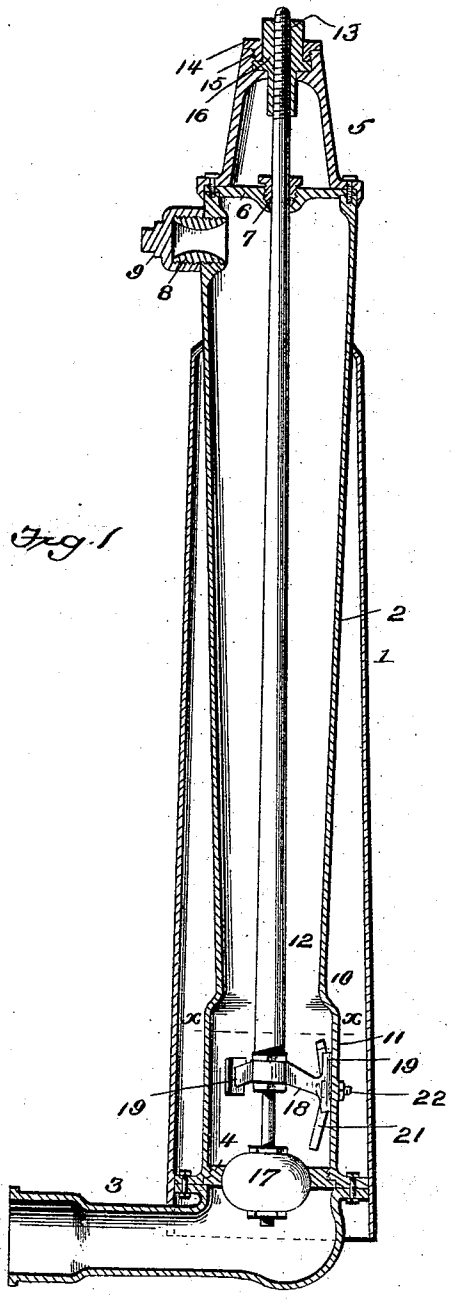



Fig. 2.

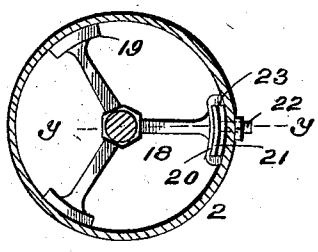



Fig. 3.

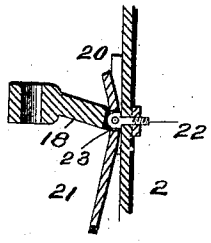
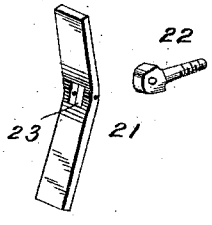



Fig. 4.




Witnesses

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# UNITED STATES PATENT OFFICE.

CHRISTIAN HANGSTEN, OF TWO HARBORS, MINNESOTA.

## FIRE-PLUG.

SPECIFICATION forming part of Letters Patent No. 511,948, dated January 2, 1894.

Application filed July 26, 1893. Serial No. 481,502. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN HANGSTEN, a citizen of the United States, residing at Two Harbors, in the county of Lake and State of Minnesota, have invented certain new and useful Improvements in Fire-Plugs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to fire-plugs, and consists in the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

The device is intended for use in localities where waste sewers do not exist, and in these places the waste water from the fire-plugs backs down into the latter, because of the lack of proper means to take off the waste. Consequently, in cold climates, the water which backs into the plugs becomes frozen, and renders the same inoperative and useless. The object of the present invention is to obviate and overcome the difficulties heretofore encountered by providing simple and convenient means for operating the plug, even after the waste water has become accumulated therein, and frozen.

In the drawings: Figure 1 is a transverse, central section of the plug involving the invention. Fig. 2 is an enlarged horizontal sectional view on the line *x*—*x* of Fig. 1. Fig. 3 is a transverse, vertical sectional view on the line *y*—*y*, Fig. 2. Fig. 4 is a detail perspective view of parts of the mechanism.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates an outer, tubular casing which entirely surrounds the stock or standard 2, and extends partly above the ground level and downwardly to an elbow 3 which connects with the main. At the point where the elbow 3 connects with the lower end of the stock or standard, is located a valve-seat 4, and on the upper end of the said stock or standard is secured a cap 5, a gland-seat 6 being secured at the point where the cap 5 is attached to the stock or standard, and supplied with a suitable gland 7. On the stock or standard 2, below the cap 5, is a nozzle 8, which is adapted to be engaged by a nozzle-cap 9, and, as will be understood, is intended for attaching the hose thereto when the said nozzle-cap is removed. The stock or standard adjacent to its lower end, is reduced in diameter as at 10, and gradually increases in diameter toward the top end of the same, and below the point 10 of the said stock or standard, the latter is again increased in diameter as at 11, to provide for a proper positioning of the operating parts, which will be presently described. A valve-rod 12 extends through the central portion of the stock or standard 2, and is of greater diameter at its lower end than at the upper end of the same, being gradually tapered to a point adjacent to the line of the nozzle 8, and then extends upwardly through the gland-seat and gland, and the cap 5, and is screw-threaded, as at 13, on its upper end. The said screw-threaded end of the valve rod is engaged by an upper nut 14, which screws into a recess 15, in the cap 5 and is held in place by a flanged disk 16, so as to form a swivel, which is operated to open or close a valve 17 at the lower end of the valve-rod, with relation to the seat 4. This operation ensues under ordinary circumstances, when the water is not frozen in the plug, but should the water freeze in the stock or standard, and it is desired to use the plug the nut 14 is turned as far as possible under the circumstances, and removed as well as the flanged disk 16 and the top of the valve-rod is struck several blows with a hammer or other device which will loosen the same from the ice, and it can then be screwed down. This operation is assisted materially by the tapered construction of the valve-rod, and the lower reduced portion of the stock or standard will prevent the ice from pressing the rod down when the water is frozen, and also obviate bursting of the pipe and the stock or standard. After the rod has thus become loosened, a small passage for the water to flow through is formed and in a short time the ice will be consumed and the plug opened and in working order. The lower part of the said valve-rod is provided with a spider 18 which has a series of arms 19, one of which is formed with an elongated grooved shoe 20 at its outer end. The said shoe 20 engages an angularly bent arm 21, pivotally attached to the adjacent portion of the lower

part of the stock or standard by an eye-bolt 22 whose head enters a slot 23 in the said arm. When the valve-rod 12 is adjusted to open the valve 17, the shoe 20 moves downwardly over the arm 21, thereby tilting the latter backwardly against the adjacent side of the stock or standard and forming means, of guiding and steadying the movement of the valve-rod.

It will be understood that the spider 18 has free movement upwardly and downwardly through that part of the stock or standard in which it is located, and the several parts of the device are so constructed as to be sufficiently strong to resist all strain brought to bear thereon through the action of the frozen water.

Having thus described the invention, what is claimed as new is—

In a plug of the character described, the combination of a stock or standard, a valve-rod adjustably mounted therein, carrying a valve at its lower end, said valve-rod and stock or standard being tapered in reversed directions a spider mounted on said valve-rod and having a grooved shoe on one of the arms thereof, and a bent arm pivotally attached to the adjacent portion of the stock or standard and adapted to be engaged by the said grooved shoe, substantially as described.

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

CHRISTIAN HANGSTEN.

Witnesses:

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