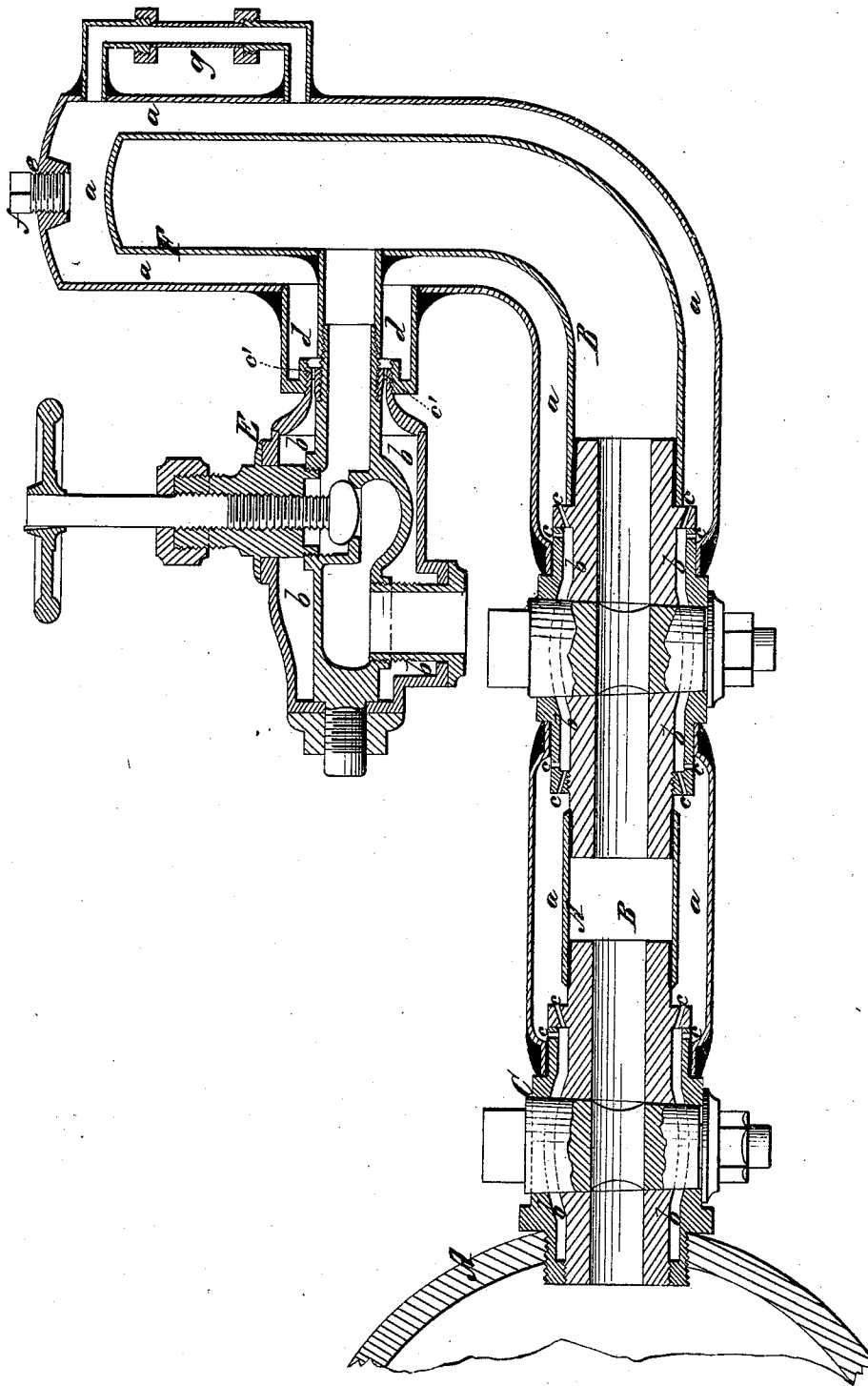


WATER-PIPE.

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attys

UNITED STATES PATENT OFFICE

WILLIAM H. SAMPSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN WATER-PIPES.

Specification forming part of Letters Patent No. **170,305**, dated November 23, 1875; application filed July 15, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. SAMPSON, of Chicago, county of Cook and State of Illinois, have invented a new and useful Improvement in Water-Pipes and their Cocks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a sectional view of a street water-supply pipe and its cocks, and of a house-cock, constructed according to my invention.

The object of my invention is, mainly, to prevent a street water-supply pipe and its cocks, and the house-cock connected thereto, from freezing.

Another object of my invention is to prevent pipes and cocks of fire-plugs, pumps, hydrants, oil-cups, and pipes and cocks generally, outside and within buildings, from freezing.

The nature of my invention consists, first, in a supply-pipe, its cocks, and the house-cock, screwed into the supply-pipe, constructed with a chamber between its inner and outer walls, said chamber extending from a charging-head, through the house-cock, shut-off cock, and main cock, to the "main," but having no communication with the main, said chamber being filled with alcohol or other material which will not freeze under extreme temperatures of weather. It consists, second, in a water-cock and the pipe to which it is connected, constructed with a chamber for holding alcohol between its inner and outer wall, the said chamber extending around the cock and along the whole length of the pipe. The pipes and cocks mentioned are such as are used for conveying and discharging water from a fire-plug or hydrant, or through dwellings and other places from the street-main.

A is a street-main, and B the pipe which supplies water to a house or other place. C is the main cock, D the shut-off cock, E the house-cock. F is an extension or head of the pipe B beyond the cock E.

The sections of the supply B are made with double walls, and a chamber, *a*, between these walls. The barrel of each of the cocks is also made with double walls, and a chamber, *b*,

between the walls. The chambers of the pipe-sections and of the cocks are connected by means of passages *c c*. At the place where the house-cock is screwed into the supply-pipe a circular chamber or space, *d*, is formed, and through the end of the cock passages *c' c'* are provided, so that a communication is established between the chambers *a b d*. The head F of the supply-pipe is also made with double walls, and a chamber, *a*, between the walls, and in the top of the outer wall a charging-hole, *e*, with a sealing-plug, *f*, is provided. To one side of the head F a glass gage, *g*, is attached, and made to communicate with the chambers. The pipe and cocks are charged with alcohol through the hole *e* and then sealed tight, so that loss from evaporation shall not be experienced. The charging of the chambers with alcohol causes the whole interior wall of the cocks and pipes, as far as practicable, to be surrounded by a material (alcohol) which does not freeze under extreme temperature. The height of the alcohol in the chambers is indicated by the glass gage.

My invention will obviate nearly all the expense for digging to lay the pipes; also, will prevent much inconvenience, loss, and expense from pipes and cocks freezing and bursting in cold weather. The expense of laying and setting double-walled pipes and cocks will not be much, if any, greater than the ordinary pipes, as the expense for digging is avoided. The sections of main pipe can be made at lead works, and furnished, or the plumber can take sections of single-wall pipe and make double-wall pipe by putting one within another and soldering together the ends. To make the inner joint between the inner pipe and the cocks C and D the outer pipe is split at the ends and laid open, and the inner pipe soldered, as shown in the drawings. The inner ring into which the house-cock screws is also soldered to the pipe B, as shown.

What I claim is—

1. The street supply-pipe, having a charging head, and its main cock, shut-off cock, and the house-cock, which is screwed into the supply-pipe, constructed with double walls and communicating chambers between the

walls for holding alcohol, substantially as described.

2. A water-pipe and its connected cock, made with double walls, and communicating chambers between the walls, substantially as and for the purpose described.

3. The charging-head of the supply-pipe, made with double walls, and a chamber be-

tween its walls, in combination with the house-cock, shut-off cock, main cock, and the gage, substantially as and for the purpose described.

WM. H. SAMPSON.

Witnesses:

P. F. CONNOLLY,
JOHN NATHAN.