

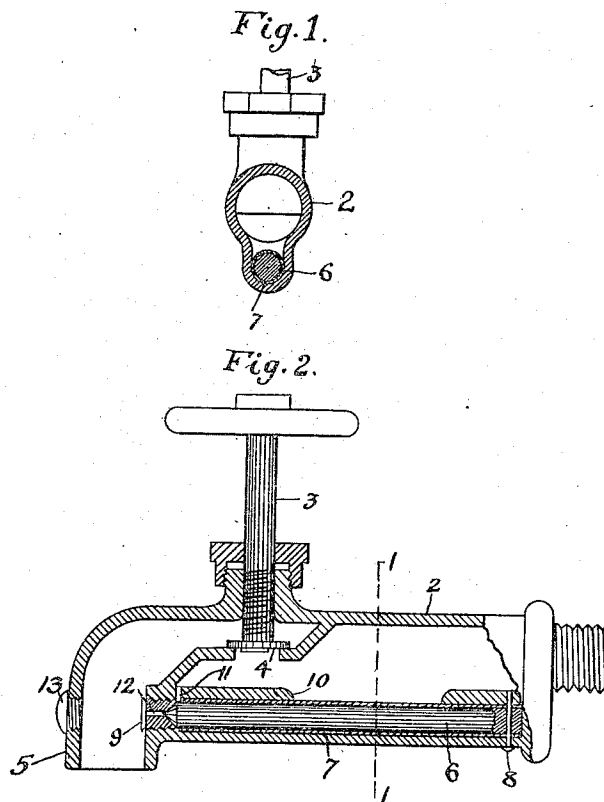
J. B. CRANDON, M. M. & B. J. BERNSTEIN.

NON-FREEZABLE FAUCET.

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UNITED STATES PATENT OFFICE.

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NON-FREEZABLE FAUCET.

1,277,197.

Specification of Letters Patent. Patented Aug. 27, 1918.

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To all whom it may concern:

Be it known that we, JOSEPH B. CRANDON, MARKS M. BERNSTEIN, and BERNARD J. BERNSTEIN, citizens of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Non-Freezable Faucets, of which the following is a specification.

Our invention relates to non-freezable faucets, that is, faucets that will not freeze at a temperature considerably lower than 32 degrees F., the ordinary freezing temperature.

In faucets or water pipes of this character they are arranged with thermostatic elements which cause a passage to open and a small stream of water to waste through the faucet or flow through the pipe when the temperature approaches the freezing point. The aim of our invention is to produce a faucet having these characteristics, which is simple in construction and operation and which it is practicable to apply to a faucet built on the same lines as ordinary water taps or faucets.

Our invention may be best understood by reference to the accompanying drawing in which is shown a faucet to which our invention has been applied in its preferable form.

Referring to the drawing,

Figure 1 is a cross section on line 1—1 of Fig. 2, and

Fig. 2 is a central longitudinal section.

Referring to the drawing 2 represents the faucet which may be of ordinary construction so far as its main features are concerned, 4 being the valve proper, 3 the valve stem and 5 the nozzle or delivery end.

Our thermostatic device is contained in a chamber formed in the lower portion of the faucet and its consists of an elongated thermostatic element which by its contraction opens a by-pass discharging beyond the main valve 4 at some suitable point.

As here shown, the thermostatic element consists of a relatively long cylindrical rod 6 made of some material which is more expansible by heat than the material of the faucet which is usually of brass. The rod 6 is preferably made of hard rubber and it is inclosed in a copper tube 7 which gives it stiffness and prevents bending. The rod is contained in a chamber formed by boring longitudinally into the faucet from front to

rear through the nozzle. The inner end of the rod 6 is secured in place by a pin or screw 8 and the outer end is tapered to form a valve element, which coacts with a correspondingly-shaped recess or valve seat formed in the inner end of the screw plug 9. The plug 9 has a central opening 12 which when the thermally controlled valve is open communicates with a suitable opening 11 connecting with the interior of the faucet, the openings 11 and 12 thus forming the by-pass connecting the interior of the faucet with the outlet when the main valve is closed.

An opening 10 in the chamber containing the rod permits the water of the interior of the faucet to come in contact with the thermostatic rod or its casing.

A screw plug 13 is inserted in the nozzle directly opposite the plug 9 to permit a screw driver to be inserted from the outside when the plug 13 is removed to adjust the plug 9 which latter is provided with a slot for this purpose.

The hard rubber rod 6 is far more expansible by heat and contractible by cold than brass, and consequently if the plug 9 is set so that the valve carried by the rod 6 just closes the opening 12 at the minimum temperature, say of 35 degrees, the rod will contract enough by the time the temperature falls to 32 or below to open the by-pass and allow a small stream of water to run. This small stream when started starts the flow of water through the pipe and tends to prevent the pipe from freezing at any point in its length by starting a circulation.

The simplicity, cheapness of construction and ready adjustability of the device makes it a useful and efficient device for the purpose for which it is built.

We claim:

1. A non-freezable faucet including a by-pass, an elongated thermostatic valve element for closing said by-pass composed of material more expansible by heat than the body of the faucet.

2. A non-freezable faucet including a by-pass having a valve seat, a thermostatic rod having an end adapted to fit said valve seat and close said by-pass, said rod being composed of material more expansible by heat than the material of the faucet.

3. A non-freezable metal faucet including a by-pass having a valve seat, a thermo-

static rod of hard rubber one end of which is adapted to fit said valve seat and close the by-pass.

4. A non-freezable metal faucet including a by-pass, a thermostatic rod in the lower portion of the faucet having a valve element formed on its end, said rod being formed of material more expansible by heat than the body of the faucet, a screw threaded plug in line with said rod having a valve seat coacting with the valve element and a central opening to form a portion of the by-pass, an opening being formed in the faucet to permit access to the plug to adjust the same.

5. A non-freezable faucet including a by-

pass, a hard rubber rod having its end formed into a valve element, a metal casing for said rod, a screw plug having at one end a valve seat coacting with said valve element and having a central opening forming a portion of said by-pass, said faucet having a longitudinal chamber in its lower portion to contain said rod and an opening connecting said chamber with the interior of the faucet and an opening in the faucet for permitting access to the said screw plug.

In testimony whereof we have affixed our signatures.

JOSEPH B. CRANDON,
MARKS M. BERNSTEIN,
BERNARD J. BERNSTEIN.

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