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WATER PURIFICATION

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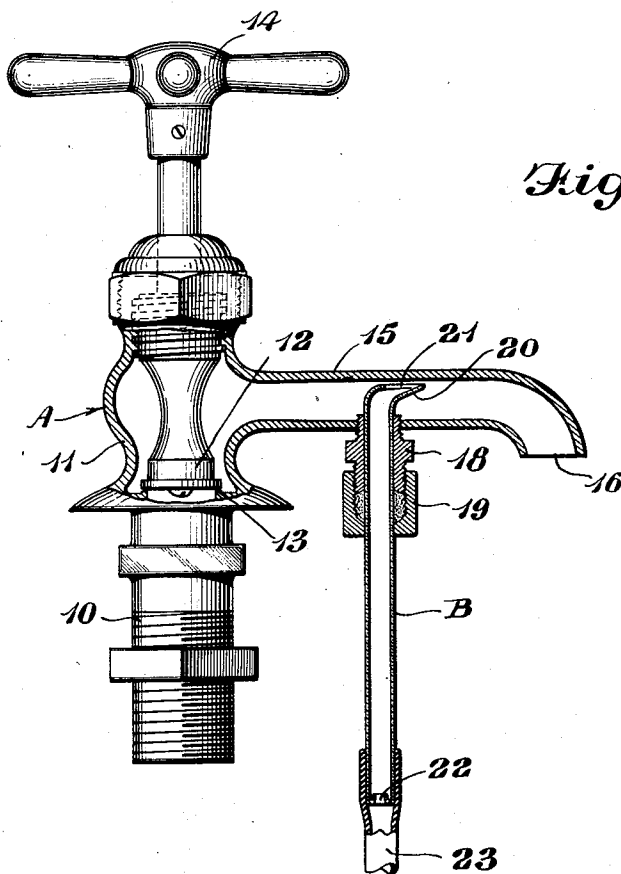


Fig. 1.

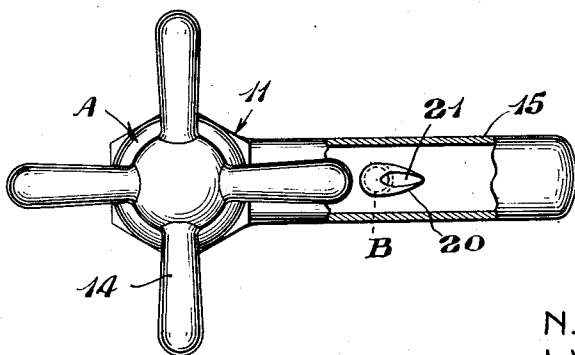


Fig. 2.

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WATER PURIFICATION

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2 Claims. (Cl. 210—40)

The invention relates to water-purification and more particularly to an improved method and apparatus for introducing chlorine or the like into water for sterilizing the same.

5 There is an increasing tendency on the part of various governmental agencies to require by law proper sterilization of water used for washing dishes, glasses and the like at restaurants, soda fountains and other public places and also to re-
10 quire the sterilization of water used in swimming pools and the like. For such purposes it is important that the chemical be introduced in just the right quantity and concentration.

15 According to our invention the chemical is introduced into the outlet pipe of a water faucet or the like, preferably by means of a glass tube, one end of which extends into said pipe, the chemical being automatically drawn into the stream of water by the flow of the water itself, which flow
20 may be regulated by the usual valve with which the faucet is equipped. Thus the quantity of chlorine introduced is automatically regulated according to the requirements of the particular case. We are aware that chemicals have previously
25 been introduced into a stream of water but not in the manner herein described, and the present arrangement has the advantages of simplicity, economy, efficiency and uniformity of product.

30 The invention will be more readily understood by reference to the accompanying drawing which is intended as illustrative only and not as limiting the invention to the precise details herein set forth.

In the drawing:

35 Fig. 1 is a view partly in side elevation and partly in vertical section showing a faucet equipped with a chlorine supplying attachment, and

Fig. 2 is a top view of the same partly in plan and partly in horizontal section.

40 Referring to the drawing, the reference character A denotes a faucet of any desired type having an outlet pipe, and B represents a tube for introducing chlorine or the like into said outlet pipe.

45 As shown the faucet includes a water inlet pipe 10 which may communicate with any suitable source of supply, and 11 indicates the usual valve body which may be provided with a reciprocating valve 12 of any desired type adapted to be brought
50 into engagement with a seat 13 for cutting off the flow of water or to be removed from said seat by the operation of the handle 14, having a suitable screw connection with the body of the faucet. By means of this valve the quantity and pressure of
55 the water flowing from the inlet pipe 10 to the

outlet pipe 15 may be controlled as desired. The outlet pipe 15 is provided with a suitable outlet opening 16.

It will be understood that water will be supplied to the pipe 10 under the usual pressure of the system and its flow will be controlled by the valve mechanism just described so that any desired degree of pressure may be had through the outlet pipe up to a predetermined maximum for the system. The water into which a suitable chemical
10 will be supplied through the pipe B discharges into a basin or the like for sterilizing dishes, glasses etc. or into a swimming pool or the water may be used for any other desired purpose.

According to the present invention an opening
15 is provided in the lower wall of the outlet pipe 15 which opening is preferably threaded to receive a nipple 18 to which may be connected a suitable packing gland 19 through which the tube B for introducing the chemical is slidably fitted. The
20 tube B is preferably of glass or like material inert to chemicals. This tube is provided with an elongated ellipsoidal nozzle portion 20 bent at 90 degrees to the remainder of the tube and having a nozzle opening 21 shown as located near the top
25 of the nozzle which is also of elongated ellipsoidal form. The other end of the tube B is provided with a suitable inlet orifice 22 the size of which regulates the quantity of chemical to be injected. By properly proportioning the orifices 21 and 22
30 with reference to the area of the outlet pipe and the known pressure of the water in the system any desired concentration of chlorine or other chemical may be secured.

The pipe B may be connected through a tube
35 23 to any suitable source of supply (not shown). It is not necessary that any pressure be applied at the source to force the chlorine or other chemical into the water, it being sufficient to open the faucet valve to admit water under pressure
40 whereby the chemical is drawn upwardly through the pipe B and injected into the swiftly flowing water passing through the faucet outlet 15, such injection being due to the flow of the water itself and in this manner the correct quantity of the
45 chlorine or other chemical will be automatically injected into the stream of water depending on the quantity and force of the water flowing there-through and on the size of the orifices 21 and 22.

As soon as the water is cut off by closing the
50 faucet valve the chemical immediately ceases to flow and drains back into its container, which prevents corrosion of any metal that the chemical would otherwise contact.

It will be understood that the invention may be 55

applied to various types of faucets and that means may be provided for setting the faucet handle at any desired position so that the valve will remain open without manual control.

5 It will be understood that the orifices 21 and 22 will be metered or calibrated according to the percentage strength of chlorine and the parts per million desired according to the requirements of the particular case.

10 The invention has been described in detail for the purpose of illustration but it will be obvious that many variations and modifications may be resorted to without departing from the spirit of the invention.

15 We claim:

1. An automatic water purification device, comprising a faucet having an inlet pipe connected to a source of water under pressure, an outlet pipe, means for regulating the supply of water to said outlet pipe, and means for supplying chlorine to said outlet pipe, wherein the chlorine supplying means includes a glass pipe having an elongated ellipsoidal nozzle bent at 90° thereto located within the outlet pipe of the faucet and having an oval outlet orifice in the top of the same.

2. An automatic water purification device comprising a faucet having an inlet pipe connected to a source of water under pressure, an outlet pipe, means for regulating the supply of water to the outlet pipe, and means for automatically supplying chlorine to said outlet pipe when water is flowing therethrough, said means including a pipe of relatively small diameter extending upwardly into said outlet pipe from a source of chlorine supply, and having an enlarged head of elongated ellipsoidal form extending in the direction of water flow in the outlet pipe and having an opening in the top portion thereof which is also of elongated ellipsoidal form, whereby a vacuum is created within the chlorine pipe by the flow of water over and around the nozzle sufficient to introduce chlorine into the water stream.

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