Sept. 22, 1931. P. C. GIBBONS 1,824,716

CONTROL VALVE ATTACHMENT FOR FLUSH TANK FAUCETS

Filed March 6, 1928

Fig. 1.

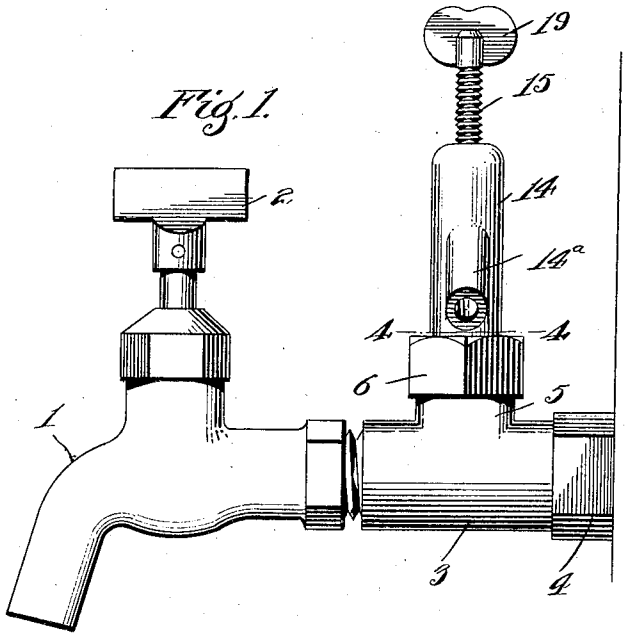


Fig. 2.

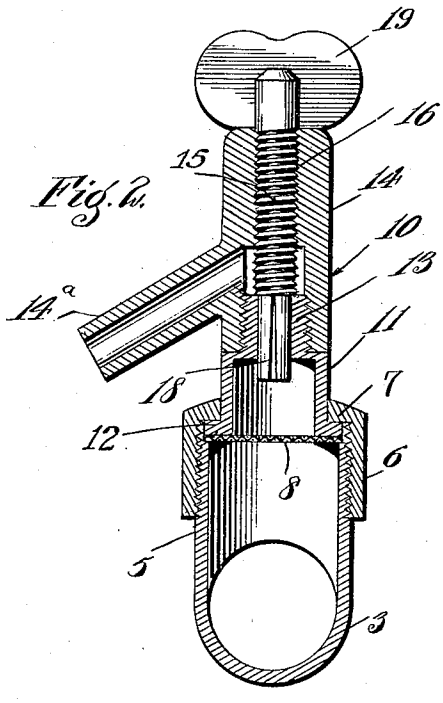


Fig. 3.

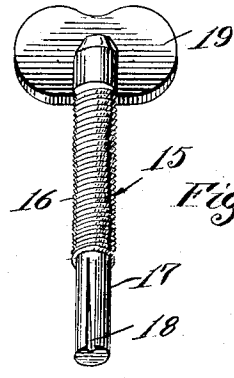
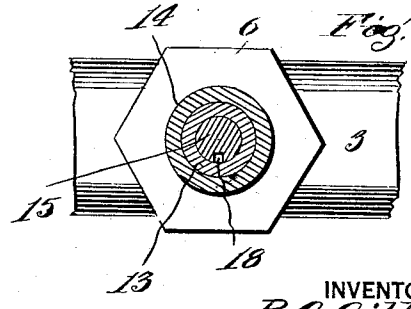


Fig. 4.



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UNITED STATES PATENT OFFICE

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CONTROL VALVE ATTACHMENT FOR FLUSH TANK FAUCETS

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This invention relates to flush tank faucets used in connection with sewer systems and more particularly to regulating attachments for said faucets.

In sewer systems, what are known as flush tanks are used, one at the end of each sewer line. These tanks are so constructed and equipped that when a predetermined quantity of water is turned into one of them it dumps automatically. These faucets are intended to work either continuously through curved attachments or by hand periodically by turning the hand valve shown in Fig. 1. To operate by hand is tedious and sometimes impossible, as in winter when the mud and ice is frozen on the lids of the tanks. Various expedients have been employed to let the water run, but it was found that either too much water was wasted or if a hole in the curved attachment sufficiently small to permit the proper amount of water to flow through was made, such a hole would soon become stopped up by sediment settling in the discharge point thereof.

This invention was designed to overcome these difficulties, and the attachment constituting this invention operates on just the opposite principle of the old method, that is, the water instead of flowing down is directed upwardly through the small opening to prevent all possibility of sediment settling around and closing it.

Another object of the invention is to so construct an attachment of this character which will perform the double purpose of regulating the constant flow of water and in case any obstruction should get into the device it will only be necessary to manipulate it slightly to loosen any accumulation, giving the water an opportunity to flush said accumulation out of the spout.

Still another object is to so construct an attachment for a faucet of this character which will discharge a continuous stream of desired size which may be regulated to any desired extent and completely shut off if desired to do so.

Still another object is to provide a device of this character which is simple, being formed of a minimum number of pieces and which may be easily applied and adjusted to meet desired requirements.

In carrying out these objects the invention is susceptible of modification without departing from the spirit or sacrificing any of the advantages of the claimed invention; there being shown in the drawings for illustrative purposes a preferred and practical form, in which;

Figure 1 represents a side elevation of a flush tank faucet equipped with the attachment constituting this invention,

Fig. 2 is a transverse vertical section through the attachment,

Fig. 3 is a detail perspective view of the valve stem constituting a part of the attachment, and

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 1.

In the embodiment illustrated, a flush tank faucet 1 is shown having the usual hand valve 2, said faucet being designed to be attached to a water line, not shown, used in connection with a sewer flush tank. A three-way T-coupling 3 is shown with one end of which the faucet 1 is connected and the other end of which is designed to be connected by a suitable union 4 with a water line. The shank 5 of this coupling 3 extends upwardly when the device is in operative position, and is externally threaded to receive a coupling nut 6 which unites the attachment 10 with the T-coupling 3, as is shown clearly in Fig. 2. This coupling nut 6 has an in-turned flange 7 at its outer end which is designed to overlie and clampingly engage a flange 12 of the base 11 constituting a part of the attachment 10. A strainer 8 is located between the flange 12 and the upper end of the shank 5 of the coupling 3 and is secured by tightening up of the nut 6. This strainer operates to strain out any sediment in the water flowing through the coupling 3 and which is designed to pass out through the attachment 10 in a manner presently to be described.

The base 11 of the attachment 10 has a reduced exteriorly threaded tubular extension 13 with which is designed to be engaged a tubular upper section 14, the bore of which at its lower end, is enlarged to fit the extension

13 while the outer portion of said bore is reduced and internally threaded to receive a valve stem 15 which also has engagement with the interior of the extension 13 as is shown clearly in Fig. 2. A downwardly and outwardly inclined spout 14ª communicates with the interior of the tubular member 14 and is designed to discharge the water which flows past the valve stem 15 and which is discharged in predetermined quantities to meet the requirements of the tank in connection with which the device is used.

The valve stem 15 is threaded throughout a portion of its length as shown at 16 and is designed to be screwed into the tubular member 14 and with its unthreaded portion to turn and slide freely in the extension 13 of the base 11. The lower or outer end of this stem 15 which is unthreaded as shown at 17 has extending longitudinally thereof a groove 18 which tapers toward its inner end as is shown clearly in Fig. 3, and is designed for controlling the water, and permit it to pass from the hollow base 11 which is in communication with the coupling 3 and the spout 14ª through which the water is discharged into the flush tank. It will thus be seen that by adjusting this valve stem 15 by means of the finger grip 19 at the outer end thereof, the amount of water passing out through the spout 14ª may be controlled so that a continuous stream may be supplied to the tank and so regulated that the desired amount of water will be supplied to the tank in the time desired, causing the tank to dump automatically in a set time according to the location of the tank and the flushing of the sewer required. The tapered groove 18 performs the double function of regulating the constant flow of the water and also provides means whereby any obstruction which might occur in the small opening of the attachment could be readily removed by turning the stem 15 a few turns to the left to loosen the accumulation, allowing the water to force it out through the spout. If necessary, of course, the valve stem might be entirely removed for cleaning or other purposes.

The attachment 10 is made in two sections 11 and 14, as above described, to permit the base 11 to be unscrewed from the upper section and allow the union or coupling nut 6 which engages the T-coupling 3 to slip over the base and be properly connected therewith.

This attachment 10 is substituted for the old form of downwardly curved spout attachment now in use simply by unscrewing the nut 6 which is used for connecting the curved attachment to the T-coupling shank 5 as well as this attachment 10. The nut 6 is then removed from the curved spout and applied to the attachment 10 as above described and permits it to swivel in any direction by leaving the nut loose enough to permit such turning of the member 11.

It will thus be seen that this attachment overcomes all the difficulties of the old method operating on the opposite principle, that is, the water, instead of doing down, flows up through the small opening in the attachment, thereby preventing all possibility of sediment collecting around and closing up the passage.

This attachment has been thoroughly tested, and proven absolutely successful.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit and scope of the claimed invention.

I claim:—

In a device of the class described the combination with a flush tank faucet having a hand valve; of a three-way T-valve with one end of which said faucet is connected, the other end of said coupling having means for connection with a water line, the shank of the coupling extending upwardly when in operative position, said shank being externally threaded to receive a coupling nut, a coupling nut engaged with said threaded shank portion and having an inturned flange at its outer end, a tubular member having an outturned flange at its lower end adapted to underlie and engage with the flange of the nut, said tubular member having a reduced externally threaded section, a tubular upper section having an enlarged bore at its lower end to fit said tubular threaded extension of the first mentioned extension, the upper or outer portion of said bore being threaded to receive a valve stem, a downwardly and outwardly inclined spout carried by said upper section and communicating with the interior of said tubular portion thereof, a valve stem threaded throughout a portion of its length and having threaded engagement with said tubular upper section with its unthreaded portion adapted to slide freely and turn in the reduced extension of the lower section, the unthreaded section of said valve stem having a groove extending longitudinally thereof and tapering toward its inner end for controlling the water and permitting it to flow from the hollow upper section into the flush tank, the valve stem being adjustable to vary the amount of water permitted to pass.

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