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munication with this port, and with the interior of the conduit 10, whereby liquid may flow from the conduit into the chamber to move the piston forwardly. A branch pipe 92 is also provided, which connects the pipe 90 in communication with the inlet port 68 of the valve 80. An opening 81 is provided in the casing 76 which communicates with the counterbore 80 and leads to the exterior of the casing, whereby air may flow into and out of the counterbore in accordance with the movements of the extension 84 in the counterbore.

The discharge port 70 may have a discharge pipe 94 connected in communication therewith, which leads to any convenient location where it may be desired to collect the samples of liquid which are withdrawn from the conduit.

In the operation of the invention liquid flowing through the conduit 10 will cause the rotor 24 to rotate, operating the worm 32 to rotate the gear 34 and drive the drive shaft 36, which in turn rotates the valve 52 in the valve casing. When the valve reaches the position shown in Fig. 2 liquid may flow from the conduit 10 through the pipe 90 and branch pipe 92 to the inlet port 68, and, by way of the passageway 74, to port 72, through pipe 78 into the chamber 79, to move the piston 82 to the left, as seen in Fig. 2, until the extension 84 engages the adjusting screw 86. During such movement of the piston liquid may flow out of the port 88 through pipe 90 and branch pipe 92, to permit the piston to move toward the left, and such movement may take place because of the smaller area exposed to liquid on the side of the piston from which the extension 84 extends. As the valve 52 continues to rotate, communication between the ports 68 and 72 will be cut off, and when the valve reaches the position illustrated in Fig. 4 communication will be established through the passageway 74 between the port 72 and the discharged port 70, whereupon liquid from the conduit 10 will flow through pipe 90 and port 88 into chamber 79 to move the piston to the right, as seen in Fig. 4, thereby discharging the sample of liquid, through the pipe 78, port 72, passageway 74, port 70 and discharge pipe 94, to the point of collection. In this manner successive samples of liquid may be taken as the liquid flows through the conduit, thus enabling a constant check to be maintained on the quality of the liquid. By suitably adjusting the screw 86, the movement of the piston 82 in chamber 79 may be regulated to vary the size of the sample which is taken, as may be desired.

It will thus be seen that the invention, constructed as described above, provides sample taking apparatus of simple design, which may readily be applied to existing pipe line structures, which requires no independent source of power for operation, and in which the parts are easily replaceable for purposes of maintenance and repair.

The invention has been disclosed herein in connection with a certain specific embodiment of the same, but it will be understood that this is intended by way of illustration only, and that numerous changes can be made in the construction and arrangement of the various parts, without departing from the spirit of the invention or the scope of the appended claims.

Having thus clearly shown and described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from said inlet and outlet, a valve in the casing having a flowway and rotatable to one position to bring the flowway into communication with the inlet and said port and to another position to bring the flowway in communication with the outlet and said port, means having a connection with a conduit containing a flowing liquid and with said inlet to conduct liquid from the conduit to said inlet, and rotatable means mounted in the conduit in position to be rotated by said flowing liquid and having a driving connection with said valve to rotate the valve.

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2. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from the inlet and outlet, a valve in the casing having a flowway and rotatable to one position to bring the flowway into communication with the inlet and said port and to another position to bring the outlet into communication with said port, means in communication with said port to receive liquid from said inlet when said valve is in said one position and to discharge said liquid through said outlet when said valve is in said other position, means having a connection with a conduit containing a flowing liquid and with said inlet to conduct liquid from the conduit to the inlet, and rotatable means mounted in the conduit in position to be rotated by said flowing liquid and having a driving connection with said valve to rotate the valve.

3. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from the inlet and outlet, a valve in the casing having a flowway and movable to one position to bring the flowway into communication with the inlet and said port and to another position to bring the flowway into communication with the outlet and said port, means having a connection with a conduit containing a flowing liquid and with said inlet to conduct liquid from the conduit to said inlet, a housing having a chamber and an opening in communication with the chamber through said opening and with said port and through which liquid may flow into and out of the chamber, said chamber having an inlet spaced longitudinally of the chamber from said opening, means connected in communication with said chamber inlet and said conduit and means in the chamber located between said opening and said chamber inlet and movable toward said opening in response to the flow of liquid into the chamber through said chamber inlet and away from said opening in response to the flow of liquid into said chamber through said opening.

4. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from the inlet and outlet, a valve in the casing having a flowway and movable to one position to bring the flowway into communication with the inlet and said port and to another position to bring the outlet into communication with said port, means having a connection with a conduit containing a flowing liquid and with said inlet to conduct liquid from the conduit to said inlet, a housing having a chamber and an opening in communication with the chamber through said opening and with said port and through which liquid may flow into and out of the chamber, said chamber having an inlet spaced longitudinally of the chamber from said opening, means connected in communication with said chamber inlet and said conduit, piston means in the chamber located between said opening and said chamber inlet and movable toward and away from said opening.

5. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from the inlet and outlet, a valve in the casing having a flowway and movable to one position to bring the flowway into communication with the inlet and said port and to another position to bring the outlet into communication with said port, means having a connection with a conduit containing a flowing liquid and with said inlet to conduct liquid from the conduit to said inlet, a housing having a chamber and a piston movable in the chamber, said housing having an opening on each side of said piston in communication with the chamber, means connected in communication with one of said openings and with said inlet, and means connected in communication with the other of said openings and with said port and said conduit.

6. Sample taking apparatus comprising a valve casing having an inlet and an outlet and a port spaced from the inlet and outlet, a valve in the casing having a flowway and movable to one position to bring the flowway into