C. J. KURTZ.

IRRIGATION VALVE.

APPLICATION FILED DEC. 4, 1919.

1,399,434.

Patented Dec. 6, 1921.

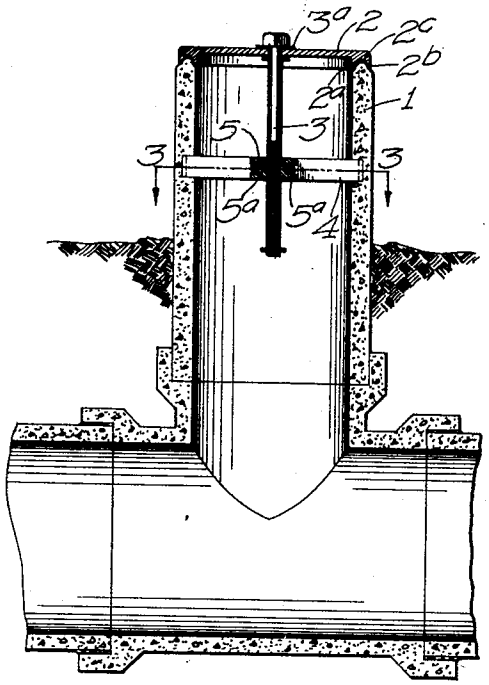


Fig. 1.

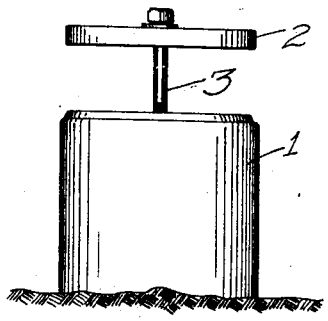


Fig. 2.

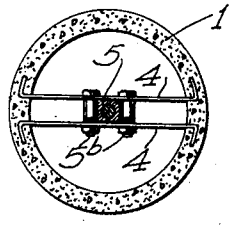


Fig. 3.

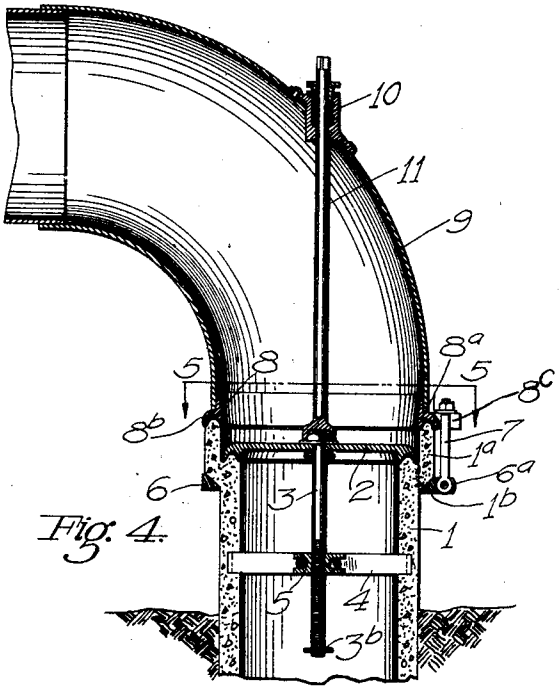


Fig. 4.

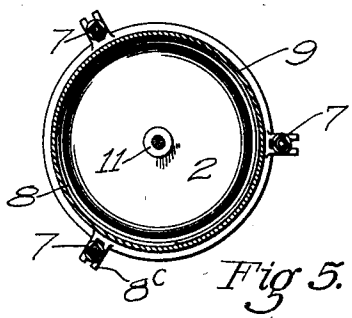


Fig. 5.

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IRRIGATION-VALVE.

1,399,434. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed December 4, 1919. Serial No. 342,339.

To all whom it may concern:

Be it known that I, CLINTON J. KURTZ, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented certain new and useful Improvements in Irrigation-Valves, of which the following is a specification.

My invention relates to valves to be used in connection with irrigation systems and the objects of my invention are: first, to provide a novelly constructed valve for opening and closing the water outlet in irrigation pipe line systems more particularly those of concrete; second, the provide a valve structure of this class the seat of which is formed of the concrete material of which the pipe is made and formed by pressure contact with the metal valve member; third, to provide a valve structure of this class which is readily made applicable to the different forms and shapes of water outlets as desired and fourth, to provide a valve structure of this class which is very simple and economical of construction, durable, easy to install, easy to operate and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application, in which:

Figure 1 is a sectional view of my irrigation valve shown in position in connection with a concrete pipe and showing the valve closed; Fig. 2 is a side elevational view of the upper end thereof showing the valve open; Fig. 3 is a sectional view through 3—3 of Fig. 1; Fig. 4 is a sectional view showing the application of my valve for use in connection with a metal pipe conductor for conducting the water in laterals from the main line and showing a slightly modified form of support for the valve seat for the outer valve and Fig. 5 is a sectional view through 5—5 of Fig. 4.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The concrete pipe member 1, valve member 2, bolt 3, supporting bars 4 and nut 5 constitute the principal parts and portions of my valve structure in its preferred form.

In constructing the concrete pipe member 1, it is formed in the conventional manner and mounted therein in position are the transverse bars 4 so that when the concrete hardens the bars are supported rigidly therein some distance below the top. Mounted between these bars 4 is the nut 5 which is provided with a thread adapted for the bolt 3. It is provided with two grooves 5^a in oppositely disposed sides in which rest the bolts 5^b, which perform the functions of supporting the nut 5 in position and holding the bars 4 in relative position to each other. It will be noted that the nut 5 is mounted loosely in its position in the center between the two bars so that it will readily conform to the screw thread and take the bolt 3. The valve member 2 is preferably a disk plate with a central hole adapted for the bolt 3 with a gasket washer 3^a to form a tight fit between the bolt and the member 2. The outer edge of this member is provided on the one side with double flanges 2^a and 2^b and they are placed in position on the top edge of the pipe as shown best in Fig. 1 of the drawings and the bolt 3 turned into the nut 5 causing the member 2 to fit tightly and securely on the upper edge of the concrete pipe 1 while it is green and left to set in this position, after which the bolt 3 is loosened and a gasket 2^c secured to the member 2 in the groove between the flanges 2^a and 2^b and adapted to seat on the seat portion of the pipe formed by the pressure of the members. In case it is desired to use laterals in connection with the pipe in addition to the structure as just described there is added an additional flange 1^a to the concrete of larger diameter beveled at 1^b and against this beveled portion is mounted an annular member 6 provided with outwardly extending lugs 6^a in which are pivotally mounted bolts 7, and there is provided an annular member 8 provided with downwardly extending flange portions 8^a similar to the flanges 2^a and 2^b on the member 2, and with a plurality of bifurcated lugs 8^c adapted for the bolts 7, and this flange member is screwed down in position on the upper ends of the flange 1^a on the green cement on the top edge and permitted to set, after which it is removed and a gasket 8^b placed in position. On the top edge of this mem-

ber 8 is secured an elbow 9 to which the laterals are connected. This elbow is provided with a stuffing box 10 in which is mounted a wrench member 11 which extends downwardly and the lower end is recessed adapted to engage the head of the bolt 3 for turning the bolt 3 and opening the valve member 2, and to permit the flow of water out into the lateral. It will be noted that the lower end of the bolt 3 is provided with a cotter pin 3^b to prevent the bolt 3 from being turned clear out of the nut 5.

Though I have shown and described a particular construction, combination and arrangement of parts and portions I do not wish to be limited to this particular construction, combination and arrangement nor to the modification thereof but desire to include in the purview of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

It is obvious that with this construction there is provided a valve structure for irrigation purposes in which the concrete pipe forms a support and seat for the valve formed by the valve itself under pressure while the upper edge of the pipe is green thus providing a molded fit of the valve with the seat; that the nut is supported in the bars embedded in the concrete forming a substantial means for supporting the valve relatively to the seat; that the annular member 6 is supported against the ledge 1^b which forms the support for the bolt 7 for securing the member 8 forming a tight joint between the lateral elbow and the top edge of the ledge 1^a and a substantial means for supporting the elbow 9 relatively to the concrete pipe 1.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:

1. A device of the class described including, a concrete pipe, a pair of spaced apart lateral bars embedded in the wall of said pipe and extending across the middle thereof some distance from the end, an integral valve seat formed on the end of said concrete pipe, a plate with its outer edge conforming to said valve seat provided with a central hole, a bolt mounted in said central hole and extending downwardly and a nut mounted between said lateral bars adapted to fit on the end of said bolt.

2. The herein described method of forming irrigation valve seats, consisting in molding a pipe of plastic material and while green forming the seat by pressing the valve against the end of said pipe and permitting the plastic material to set while in such position.

3. A device of the class described, including an annular plate provided with a bifurcated flange extending from one side thereof near the edge, a concrete pipe with an integral valve seat on one end thereof conforming to and filling the space between said bifurcated flange and means embedded in said concrete pipe walls some distance from the end and connected with said plate for securing said plate rigidly on said integral valve seat.

4. A device of the class described including, an annular plate provided with a bifurcated flange extending from one side thereof near the edge, a concrete pipe with its edge conforming to the space between the parts of said bifurcated flange, means embedded in said concrete and connected with said plate for securing said plate rigidly on the edge of said concrete pipe, another flange on said pipe, an elbow provided with a bifurcated flange on one end engaging said pipe flange and means for securing said bifurcated flange to said pipe member, a stuffing box mounted in said elbow and a wrench revoluble in said stuffing box for releasing said plate from said pipe.

In testimony whereof, I have hereunto set my hand at San Diego, California, this 22nd day of November, 1919.

CLINTON J. KURTZ.