No. 801,654. PATENTED OCT. 10, 1905.

C. H. DODD.

TIDE OR BACKWATER GATE.

APPLICATION FILED FEB. 23, 1905.

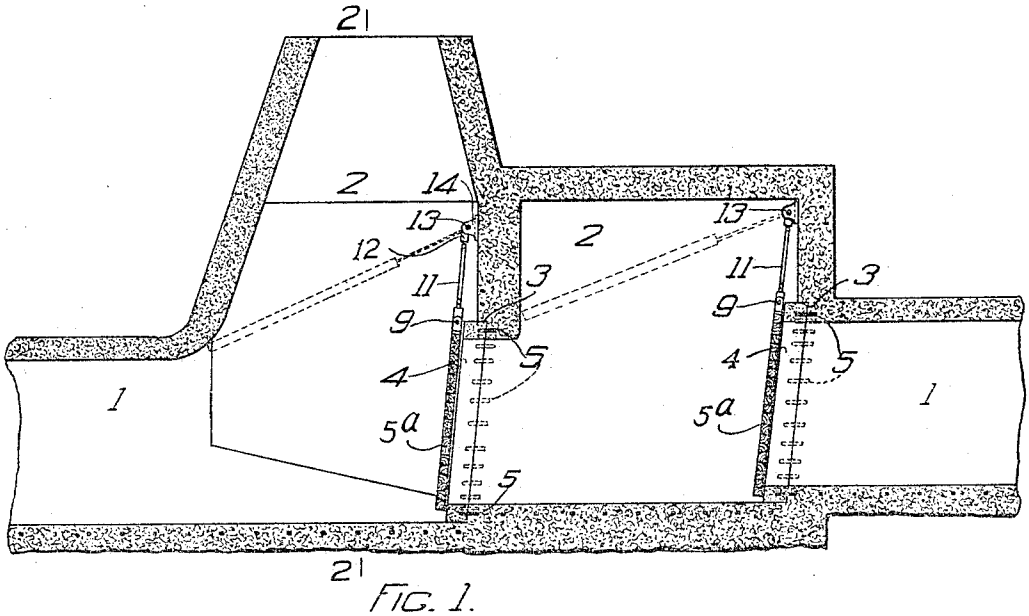



FIG. 1.

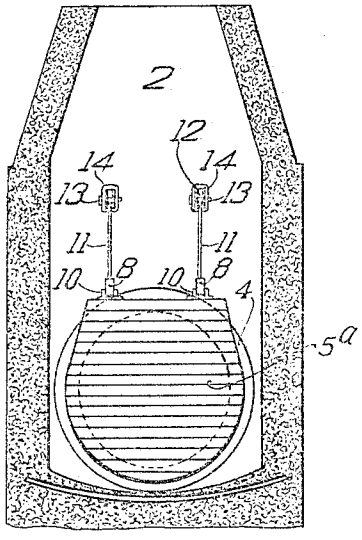



FIG. 2.




FIG. 5.

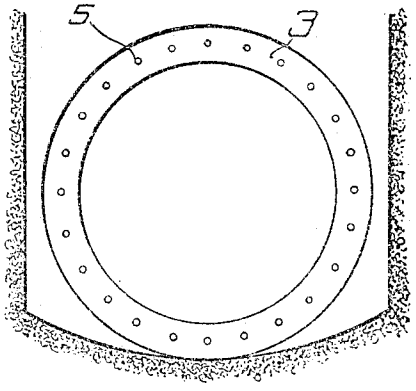



FIG. 3.

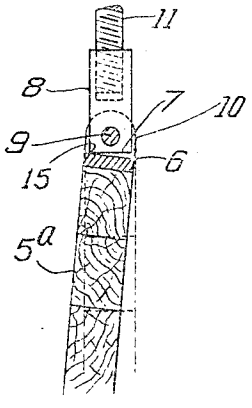



FIG. 4.

WITNESSES
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# UNITED STATES PATENT OFFICE.

CHARLES H. DODD, OF BOSTON, MASSACHUSETTS.

## TIDE OR BACKWATER GATE.

No. 801,654. Specification of Letters Patent. Patented Oct. 10, 1905.

Application filed February 23, 1905. Serial No. 247,035.

*To all whom it may concern:*

Be it known that I, CHARLES H. DODD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tide or Backwater Gates, of which the following is a specification, reference being had therein to the accompanying drawings.

The objects of my invention are, first, to secure a tight and durable joint between hinged tide or backwater gates and the gate-seats, and, second, to afford such gates a slight and limited swinging movement, (independently of the full opening movement of the gate,) whereby the gate will better adjust itself to the seat.

Figure 1 is a longitudinal central section of a suitably-chambered sewer or the like provided with hinged gates and with gate-seats embodying my invention. Fig. 2 is a vertical sectional elevation at line 2 2 of Fig. 1 looking toward the outer side of the gate, which, with its hinges, is shown in elevation. Fig. 3 shows a face view of the gate-seat recess, the view showing also a vertical transverse section of the sewer. Fig. 4 is a detail of the construction whereby a limited and slight swinging movement is permitted to the gate independently of the main swinging or opening movement of the gate on its supporting-hinges. Fig. 5 is a view of one form of a concrete-holding pin of the type preferably used in forming my new gate-seat.

In the drawings, 1 is a sewer formed with gate-chambers 2 2. The number of gate-chambers is immaterial to my invention. The sewer (or other conduit) walls may be of any desired material, but, as shown, are of concrete construction.

To obtain a gate-seat which is cheaply constructed and durable and not attacked by acids in the matter flowing through the sewer, I form a recess 3 of any desired shape in that face of the conduit which is to carry the gate-seat and then mold in said recess a gate-seat 4, of fine concrete or other suitable plastic material, the seat being bonded in the recess not only by its adhesion to the walls of the recess, but also by means of any suitable concrete-holding pins 5 of any suitable shape. These pins are set in the face-wall of the recess and project outwardly therefrom, so that the gate-seat is molded on the pins. The gate-seat projects (preferably) beyond the end wall of the sewer to insure contact of the gate therewith by preventing the gate from closing against any portion of the sewer-wall, as might happen if the gate-seat did not project. The inclination of the gate-seat is desirable to facilitate the tight closing of the gate by gravity. A molded concrete gate-seat anchored in place is wholly new with me and possesses the advantages not only of resisting the action of acids, but of being made in any desired shape. Heretofore gate-seats of woodwork have been made square and rectangular, and gate-seats of cast-iron have been generally made circular. Wooden gate-seats are apt to rot if not constantly submerged, and cast-iron gates are frequently softened and rendered useless by the action of acids in the sewage.

Gate 5ª may be of any desired construction in respect of its body. In accordance with the present invention its upper edge 6 is flat opposite the flat inner rectangular ends 7 of the hinge-blocks 8, a pair of which are provided, and each of which is loosely pinned at 9 to ears 10, fast on the gate. The hinge-blocks receive screw-threaded hinge-rods 11, the upper ends of which are also provided with threaded hinge-blocks 12, that are loosely pinned at 13 to ears 14 on the sewer-wall and from which the gate is suspended. By this construction of the hinge-rods the gate is readily adjusted vertically to suit its location on the seat. As there is a space between the ends of the lower hinge-blocks 8 and the opposed flat walls of the gate, the latter is free to swing slightly and for a limited distance until the upper edge of the gate brings up against the corners 15 of hinge-blocks 8 to permit the gate to adjust itself on the gate-seat. This slight but limited movement is independent of the movement of the gate on the upper ears 14.

What I claim is—

1. The combination of a sewer-wall, having a gate-seat-receiving recess provided with projecting concrete-holding pins, of a gate-seat of plastic material molded in said recess and on said pins projecting beyond the face-wall of the sewer and inclined upwardly.

2. The combination of an inclined gate-seat of molded plastic material with anchor-pins embedded therein and also in the walls of a recess in which the seat is formed and from which it projects; a gate; and hinges therefor attached to the upper side of the gate and also to a wall above the gate.

3. The combination of an inclined gate-seat of molded plastic material with anchor-pins embedded therein and also in the walls of a recess in which the seat is formed and from which it projects; a gate; and hinges therefor attached to the upper side of the gate and also to a wall above the gate, the gate being vertically adjustable on its hinges.

4. The combination of a sewer-wall with a thereon-mounted gate-seat of plastic material; and a self-adjusting, hinged gate.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. DODD.

Witnesses:
EDWARD S. BEACH,
E. A. ALLEN.