

J. D. JONES.
CANAL GATE.

APPLICATION FILED FEB. 3, 1912. RENEWED OCT. 8, 1912.

1,046,599.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.

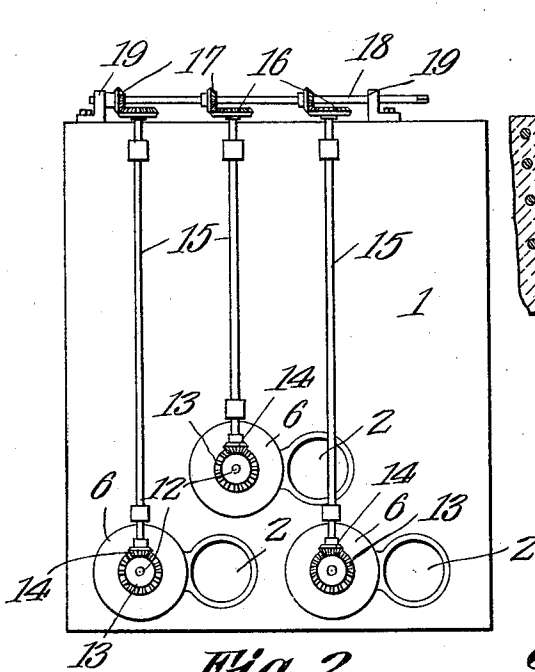
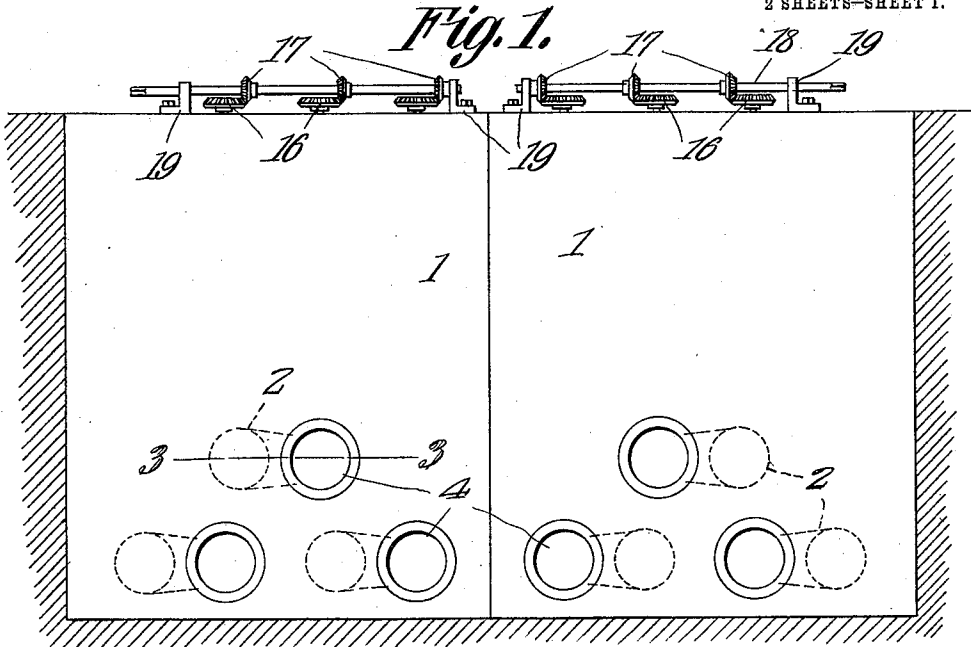


Fig. 2.

Witnesses

J. P. Goulding
S. H. H. H. H.

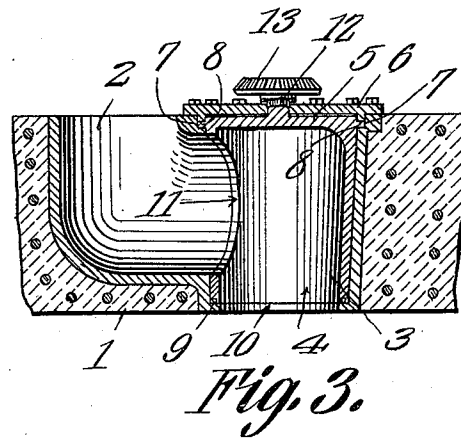


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4

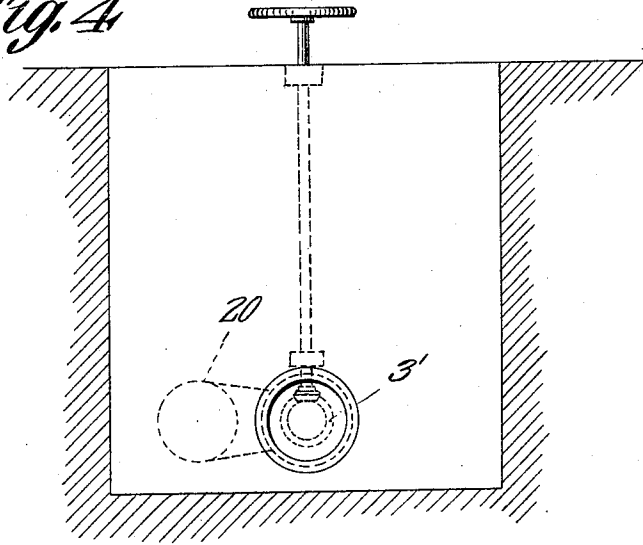


Fig. 5.

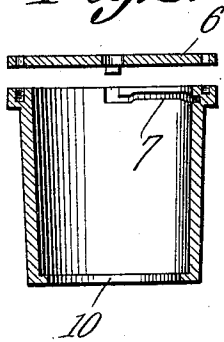
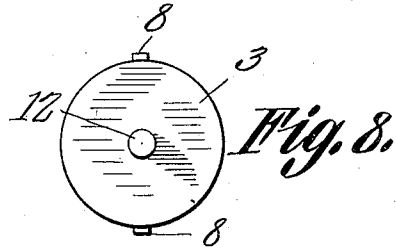
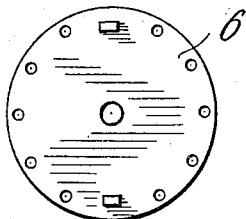
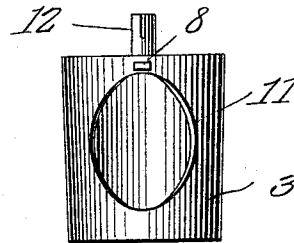


Fig. 6.



Witnesses

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Fig. 7.

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UNITED STATES PATENT OFFICE.

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CANAL-GATE.

1,046,599.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 3, 1912, Serial No. 675,164. Renewed October 8, 1912. Serial No. 724,678.

To all whom it may concern:

Be it known that I, JOHN D. JONES, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla 5 and State of Washington, have invented a new and useful Canal-Gate, of which the following is a specification.

The present invention relates to improvements in canal gates, the primary object of the invention being the provision of a gate provided with a plurality of flumes through the lower portion thereof, each of said flumes being provided with a truncated conical valve, the open end of which is normally disposed in the direction of the water pressure, and provided with operating mechanism whereby all of said valves may be operated in unison to open or closed position, the construction employed rendering 20 such operation easy while the flow of water from the lower portion of the lock is conducted exceedingly rapid, thus emptying the lock in a shorter time than is possible with the present form of mechanism.

A further object of the present invention is the provision of a novel form and arrangement of valves which when in opened or closed position will be forced upon and locked in seated position to provide a water tight connection in the flume, but which is operated with the least amount of power to be rotated approximately 90° to completely open the same from closed and locked position, thus rendering the same especially desirable for use in connection with canal gates or flumes which conduct water to any form of hydraulic motor.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a section taken through a canal lock showing the gate equipped with the present invention in closed position and from the pressure side thereof. Fig. 2 is an elevation of a single gate taken from the opposite side. Fig. 3 is a horizontal section through the gate and 55 the valve and its casing. Fig. 4 is a view similar to Fig. 1 showing the valve used in

connection with a mill-race flume. Fig. 5 is a central sectional view of the valve supporting member, with the sealing cover detached therefrom and shown also in section. 60 Fig. 6 is an elevation of the valve *per se*, with its outlet port exposed. Fig. 7 is an inside plan view of the sealing cover of the valve supporting member. Fig. 8 is a plan view of the closed end of the valve. 65

Referring to the drawings, the numeral 1 designates the gates of a canal lock, which though made usually of wood, are in the present instance to be made of reinforced concrete, said gates being provided with the 70 usual mechanism for swinging the same into open and closed position, while provided in the lower portion thereof are the flume ducts or conduits 2. Each one of these ducts or conduits is controlled by a single valve 75 which as clearly shown in Fig. 3 is a truncated conical member 3 having the open end 4 at all times upon the pressure side of the gate, while the sealed end 5 is removably held in position within the gate by means 80 of a locking plate 6. The casing is provided with the diametrically disposed cam slots 7 which co-act with the lugs 8 of the valve, when the valve is rotated to move the rim carrying the gasket 9 off and onto the sealing plate 10 mounted at the inlet end of the 85 valve. The valve 3 is provided with a port 11 which is adapted to be thrown into and out of registration with the conduit 2, thus permitting the water upon the pressure side 90 of the gate to enter the open end 4 of the valve to pass through the port 11 to and through the conduit 2 upon the opposite side of the gate.

Each of the valves are provided with the 95 concentric spindle 12 which projects through the plate 6 exteriorly thereof and has a gear 13 keyed thereupon, which in turn meshes with the gear 14 carried upon its respective vertically disposed operating shaft 15, which 100 as clearly shown in Fig. 2, is suitably journaled upon the non-pressure side of the gate. The upper ends of the shafts 15, are each provided with a gear 16 which meshes at all times with its respective gear 105 17 mounted upon the operating shaft 18. This shaft 18 is journaled in brackets 19 and is operated either manually or by power to simultaneously control the opening and closing of all of the valves 3 carried by each 110 gate.

In Fig. 4 the reinforced concrete wall

carries the flume or conduit 20 of a mill-race and has mounted therein the valve 3' which is similar to the form of valves used with the canal gate, the same being operated
 5 in a similar manner thereto. Although only one valve is shown, it is evident that any number may be employed according to the volume of water desired.

From the foregoing description taken in
 10 connection with the drawings, it is evident that a canal gate provided with a plurality of valve mechanisms as herein set forth, provides a proper seal for the canal lock during the filling and retention of the water
 15 therein, yet by reason of the easy manipulation of the valves, the rapid release or discharge of the water from the lower level of the lock is permitted, thus producing a highly efficient and practical mechanism of
 20 this character and a great time saver in both filling and emptying the lock.

What is claimed is:

1. A pressure retaining medium, having a flume conduit extending through from
 25 the pressure to the non-pressure side thereof, an open ended valve mounted for rotation and having the open end thereof disposed to receive the water at all times at the pressure side of the medium, said valve
 30 being provided with a port in one side thereof, and means for rotating said valve to bring the port into and out of registration with the conduit.

2. A canal gate, having a plurality of
 35 conduits near the lower end thereof, said conduits being open at the pressure and non-pressure side of the gate, a valve casing to each conduit disposed within the gate, an insertible valve in each casing from the
 40 non-pressure side of the gate, means for preventing the withdrawal of the valve from the casing, the open end of said valve being disposed at all times toward the pressure side of the gate, said valve being pro-
 45 vided with a port in one wall thereof, and means for rotating the valves to place them in open or closed position.

3. A pressure retaining medium, having a flume conduit extending through from the
 50 pressure to the non-pressure side thereof, a

truncated conical open ended valve mounted for rotation and having the open end thereof disposed to receive the water at all times at the pressure side of the medium, said valve being provided with a port in one
 55 side thereof, and means for rotating said valve to bring said port into and out of registration with the conduit.

4. A canal gate, having a plurality of conduits near the lower end thereof, said
 60 conduits being open at the pressure and non-pressure side of the gate, a valve casing to each conduit disposed within the gate, a truncated conical valve insertible in said casing from the non-pressure side of the
 65 gate, means for preventing the withdrawal of the valve from the casing, the open end of said valve being disposed at all times to the pressure side of the gate, said valve being provided with a port in one wall
 70 thereof, and means for rotating all of said valves in unison to place them in open or closed position.

5. A canal gate, the body of which is made of reinforced concrete and provided
 75 with a plurality of conduits near the lower end thereof and open to both sides of the gate, a valve casing mounted in the body of the gate at the inlet of each conduit, said casing being provided with tapered walls, a
 80 truncated conical valve insertible from the non-pressure side of the gate into each casing and provided with a port in one wall thereof, the open end of said valve constituting the inlet for each conduit, means for
 85 retaining the valve within the casing but permitting a rotation thereof, co-acting means carried by the valve and each one of said means for seating the valve tightly when opened and closed and releasing the
 90 same at the beginning of either operation thereof, and means for controlling all of said valves in unison.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN D. JONES.

Witnesses:

SELINA WILLSON,
 ANNA C. BURKE.