

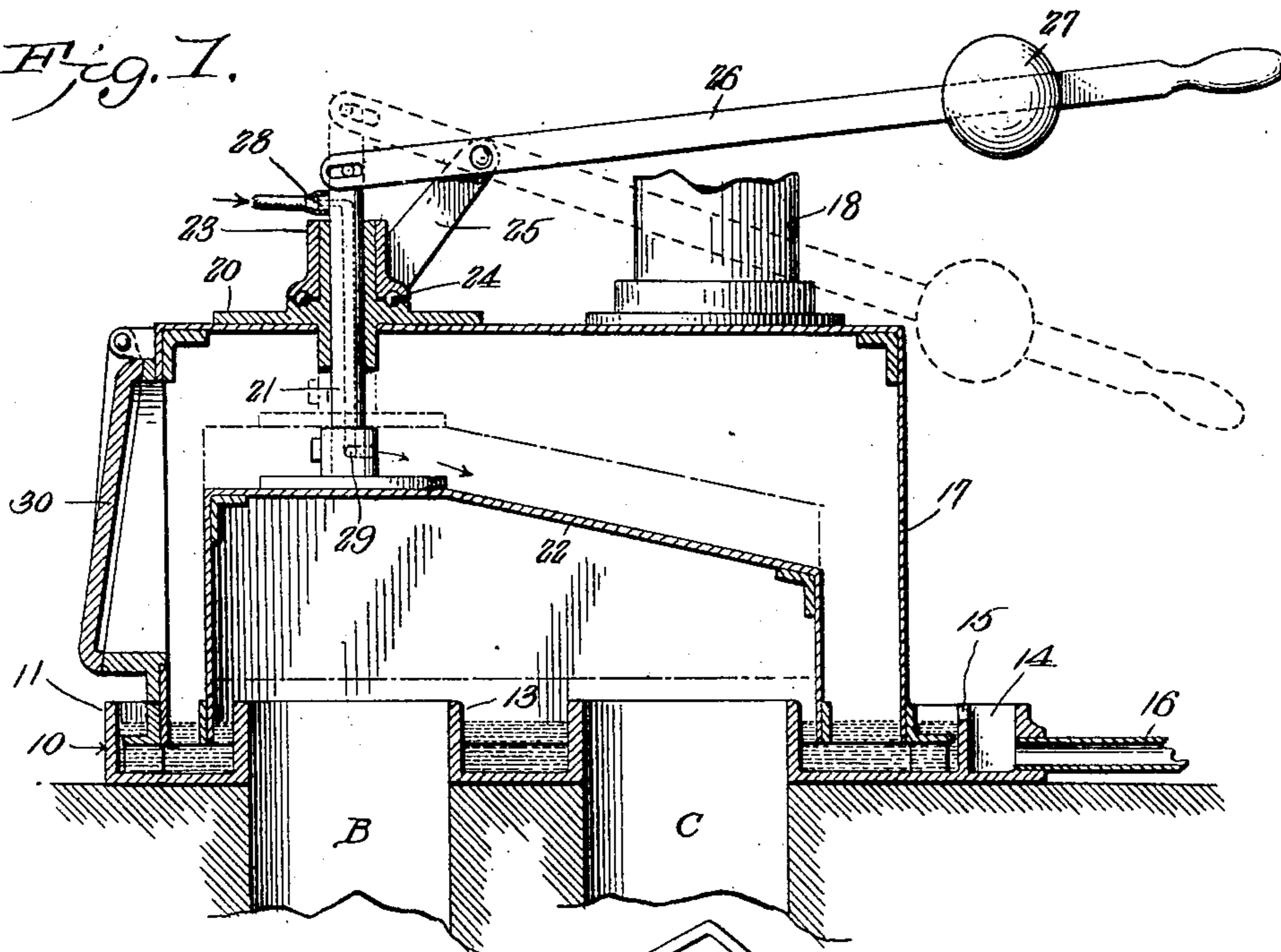
No. 810,443.

PATENTED JAN. 23, 1906.

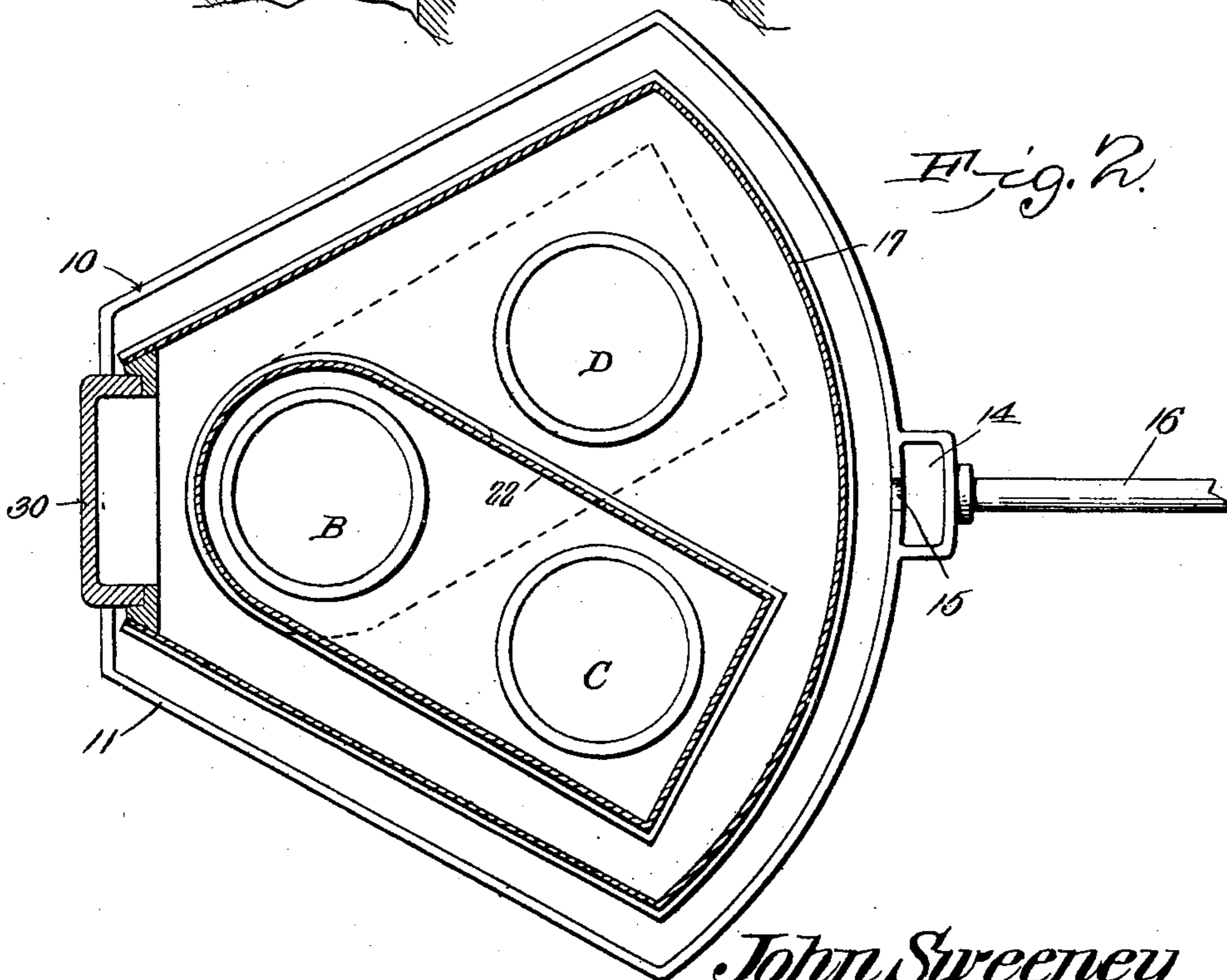
J. SWEENEY.  
GAS VALVE.

APPLICATION FILED JUNE 30, 1905.

*Fig. 1.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN SWEENEY, OF JOHNSTOWN, PENNSYLVANIA.

## GAS-VALVE.

No. 810,443.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed June 30, 1905. Serial No. 267,772.

*To all whom it may concern:*

Be it known that I, JOHN SWEENEY, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Gas-Valve, of which the following is a specification.

This invention relates to reversing-valves of that class employed for controlling the flow of currents of air or gas to and from heating and melting furnaces, and has for its principal object to provide a valve that may be quickly moved from one position to the other with minimum exertion and which will be automatically sealed in water at each adjustment.

A further object of the invention is to provide a novel means for cooling the valve and for supplying fresh water to the sealing tank or chamber to replace the water evaporated and to keep the parts cool.

A still further object of the invention is to provide a valve that is readily accessible for purposes of renewal, repairs, or cleaning.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of a reversing-valve constructed in accordance with the invention. Fig. 2 is a sectional plan view of the same.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

At the top of the furnace A, which is provided with the usual passages B, C, and D, leading to the furnace and stack, is secured a casting 10, that is provided with a continuous marginal flange or rim 11, forming a water vessel in which the valve is sealed, as hereinafter described, and around each of the openings B, C, and D the casting is also provided with an annular flange 13 of the same height as the outer flange 11. At one side of the flange 11 is arranged a small over-

flow-compartment 14, into which the excess water flows through a notch or recess 15, formed in the flange 11, the water flowing off through a suitable waste-pipe 17, and if water is continuously supplied to the casting there will be a continuous outflow and the parts may be kept in a comparatively cool condition.

Secured within the flange 11 is a casing 17, which in the present instance is shown as formed of structural-iron and sheet-iron plates, and this in some cases may be lined with fire-brick or other refractory material. To the upper portion of the casing leads a pipe 18 from the gas-producer, air-compressor, or other source of supply.

The upper portion of the casing is provided with a bearing 20, the vertical axis of which is coincident with the vertical axis of the passage B, and in said bearing is arranged a vertical spindle 21, to the lower end of which is rigidly secured a valve 22 in the form of an inverted pan, one end of the valve being always in communication with the passage B, while the opposite end thereof may be adjusted to communicate with either the passage C or the passage D, as required. The lower edge of this valve is sealed in the water except during the time required for adjustment from one position to the other.

Fitting around the bearing 20 is a sleeve 23, that is supported on an annular series of bearing-balls 24, and projecting from one side of the sleeve is an arm 25, to which is pivoted an operating-lever 26. One end of the lever is pivoted to the upper end of the spindle 21, and the opposite handled end of said lever is provided with an adjustably-mounted weight 27, which partly counterbalances the weight of the valve, so that when the handle is pressed down by hand the valve may be readily raised until its lower edge is above the flanges 13, and after this the handle may be moved in either direction in a horizontal plane for the purpose of shifting the valve to permit communication with either the passage C or the passage D. This valve may also be lined with fire-brick or refractory material, if necessary.

The spindle 21 is hollow, and from its upper end projects a small pipe or nipple 28, to which may be connected a water-hose or swing-joint pipe, and at the lower end of the spindle are arranged a number of radial openings 29, through which the water passing downward through the spindle may dis-

charge over the top of the valve, the water tending to keep the valve at a comparatively low temperature and flowing over its top and sides, to be received in the sealing vessel 5 formed by the casting 10 and its flanges.

At one end of the casing 17 is a door 30, which may be opened to permit access to the interior of the casing should it be necessary to clean, examine, or repair the valve.

10 A valve constructed in accordance with this invention will require but little exertion to raise the valve until its lower edge is above the flanges 13 and then to turn the valve in order to establish communication with either 15 of the passages C or D. The valve, moreover, is kept comparatively cool by the running water, and the water of the sealing vessel is constantly replenished.

Having thus described the invention, what 20 is claimed is—

1. The combination with a fixed water-sealed casing, of a plurality of passages having vertically-extended walls terminating above the lower portion of the casing, a water-sealed valve arranged within the casing 25 and movable independently thereof, and a vertically-movable and revoluble carrying-spindle for said valve.

2. In a device of the class specified, a plate 30 provided with a marginal flange, and a plurality of annular flanges within the marginal flange to form a water-containing vessel, a vertically-movable and revolubly-adjustable valve arranged above the plate, and having its lower edge sealed in the water, and a 35 stationary water-sealed casing covering said valve.

3. In a device of the class specified, a plate 40 having a marginal flange and provided with a plurality of flanges within the marginal flange to form a water-containing vessel, a valve, the lower edge of which is sealed in the water, a vertically-movable and revoluble spindle supporting the valve, an operating 45 member connected to said spindle, and a stationary water-sealed casing surrounding said valve.

4. In a device of the class specified, a stationary water-sealed casing inclosing a plurality of ports or passages, an open-bottom 50 valve arranged within said casing and movable

independently thereof for controlling communication between the passages, a spindle connected to said valve, a lever connected to the spindle, and a revoluble support on 55 which said lever is mounted to permit turning of the valve.

5. In a device of the class described, a flanged base arranged to form a water seal and provided with a plurality of annular 60 flanges forming the terminals of air or gas passages, a casing extending over all of such passages and provided with a bearing, a longitudinally-movable and revoluble spindle mounted in said bearing, a valve carried by 65 the spindle and controlling communication between the passages, a collar surrounding the bearing, bearing-balls between the collar and bearing, a bracket projecting from the collar, a weighted operating-lever mounted 70 on the bracket, and means for connecting the lever to the spindle.

6. In a device of the class described, the combination with a base-plate having a marginal flange to form a water-containing vessel 75 and provided at one side with an overflow-compartment from which waste water is discharged, said plate being further provided with a plurality of annular flanges arranged at the terminals of gas or air passages, a casing inclosing all of said passages, a bearing in 80 said casing, said bearing being in vertical alinement with one of the passages, a longitudinally-movable and revoluble spindle mounted in said bearing, a valve carried by 85 the spindle and controlling communication between the passages, said spindle being hollow and provided at the top with a water-supply connection, and at the bottom with ports for the discharge of the water, a collar 90 surrounding the bearing, and supported by bearing-balls, a bracket projecting from the collar, and a pivotally-mounted weighted lever fulcrumed to the bracket and connected to the upper portion of the spindle. 95

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

JNO. SWEENEY.

Witnesses:

CHARLES L. RAY,  
W. O. HENCHBERG.