No. 785,134. PATENTED MAR. 21, 1905.

G. S. WALKER.

FLUSHING GATE FOR SEWERS, &c.

APPLICATION FILED JAN. 9, 1905.

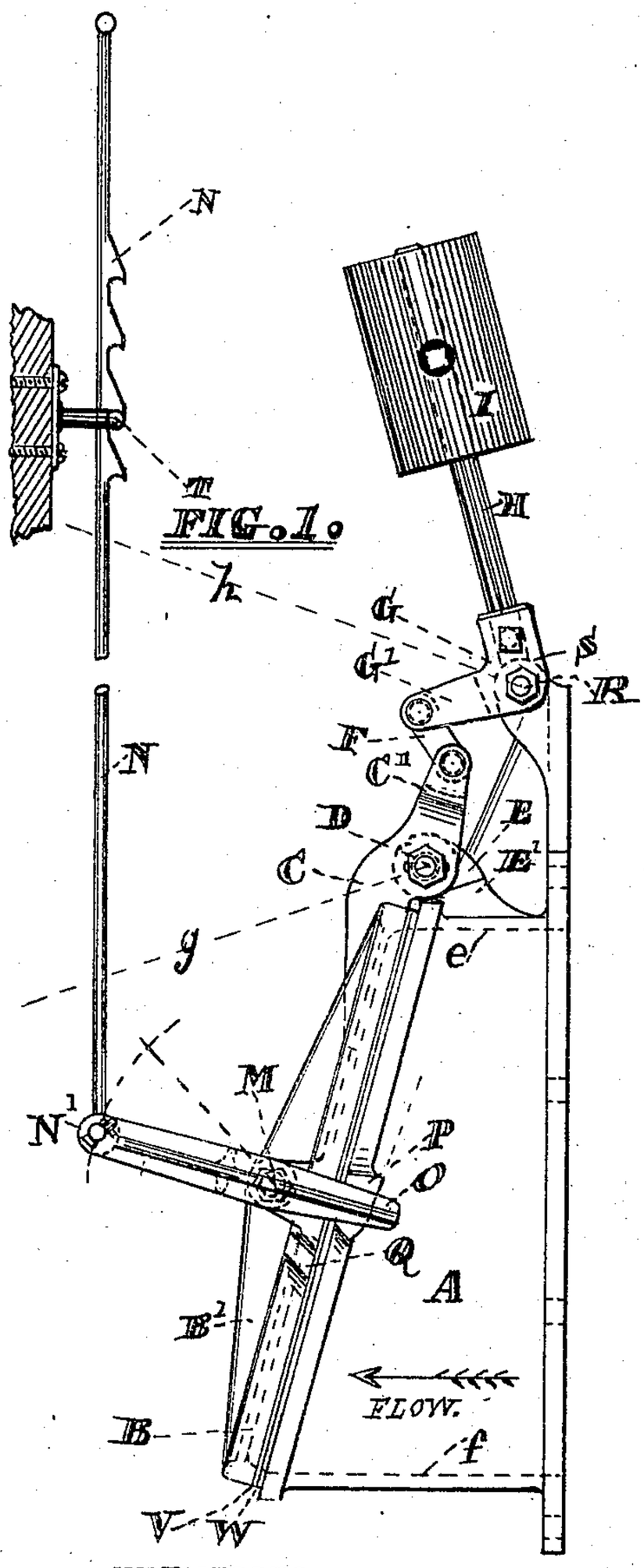

FIG. 1.

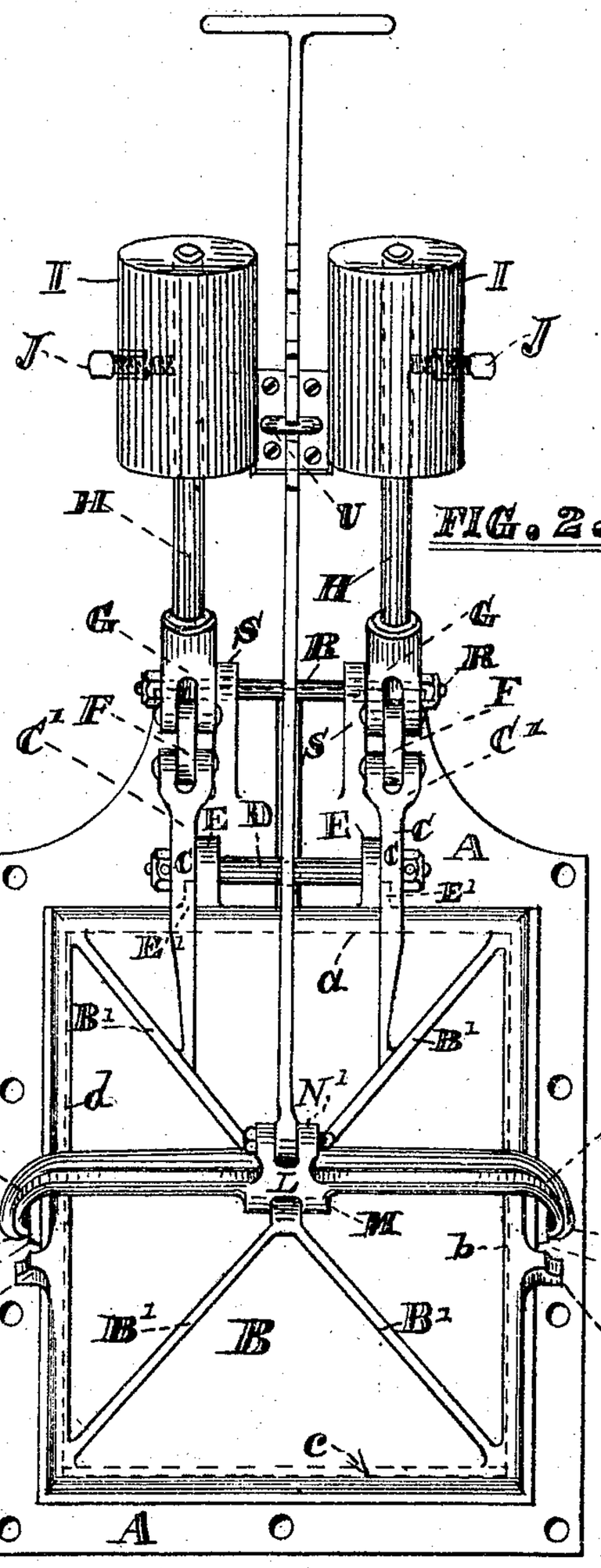

FIG. 2.

WITNESSES:

Thomas L. Taylor.

Harry W. Godden.

INVENTOR.

George Sutherland Walker,

BY D. N. B. Coffin

ATTORNEY.

No. 785,134. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

GEORGE S. WALKER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO COFFIN VALVE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FLUSHING-GATE FOR SEWERS, &c.

SPECIFICATION forming part of Letters Patent No. 785,134, dated March 21, 1905.

Application filed January 9, 1905. Serial No. 240,325.

To all whom it may concern:

Be it known that I, GEORGE SUTHERLAND WALKER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Flushing-Gates for Sewers and for Like Purposes, of which the following is a full and exact description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a side elevation of the gate, showing the valve in a closed position. Fig. 2 is a front or downstream elevation of the same.

The gate-frame is marked A, the valve is marked B, and its strengthening-ribs B′. The valve-hinges are marked C, and its lever-arm C′. The hinges are pivoted on the axial rod D, which is supported in lugs E upon the frame. The levers C′ are pivoted to the link F, the opposite end of which is pivoted to the bell-crank G at the end of arm G′. The upper end or arm of these bell-cranks is extended in suitable form to carry counter or balance weights I. There are two of these weights shown in the drawings, though a single one may be used, if preferred. The counterbalance-weight and levers may be omitted entirely in the case of small gates when the valve can be easily operated without them. A set-screw J serves to secure the weights at any desired position upon the lever-arm of the bell-crank. In the frame are shown holes around the margin for bolting it to a pipe or wall-pipe or to the masonry.

The yoke-lever L is pivoted at its middle to the valve B. Its outer extremities curve downward to grasp the lugs P on the frame by means of the holddown-lugs on the lever ends at O, the upper end being connected to the operating-rod N at N′, so that when the operating-rod N is pushed down the valve is locked to its seat and when the rod is pulled up the lugs O and P disengage and the valve is free to be lifted. The tilting of lever L by the upward lift of rod N causes it to stop against lug Q on the valve and become rigid in relation to the valve, so that the further lifting opens the valve. Its open position is indicated by dotted line *g*, and the corresponding position of the counterweight lever-arm is indicated by the dotted line *h*. The bell-cranks G are pivoted upon rod R, which is supported in lugs S on the frame A. The operating-rod N has lock notches or hooks and when lifted may be made to engage with any suitable stop, as T in Fig. 1, or U in Fig. 2.

The frame A has an opening for the flow bounded by the dotted lines *a b c d* in Fig. 2 and *e f* in Fig. 1. This opening is opened and closed by means of valve B. This valve is hinged at C D to the frame, as before alluded to, and is provided with a suitable facing V, preferably of bronze, and is well fitted to a similar facing W on the frame. These faces are suitably inclined in relation to the flow of the sewage liquid. This direction is indicated by an arrow in Fig. 1.

The object to be accomplished is to secure by sudden flooding and forceful flow the more perfect removal or washing out of the stagnated or accumulated sewage matter below the gate. To this end the gate is closed, as described, for a time until there is accumulated some head of reserved fluid above the gate. Then the gate is suddenly opened by pulling up rod N, which first disengages lugs O P, as described. Then the further sudden pull opens suddenly the valve, causing a forceful rush downward through the gate of the accumulated liquid, so washing away the accumulations acquired during the slower natural flow. The drawings show the valve in its closed position locked securely by the engagement of the lever ends O with the lugs P on the frame. The lugs P have an inclined surface underneath for lever end lugs O to slide upon, so as to tighten the locking action.

The counterbalance-weights I and their connecting-levers may be omitted when the gate is a small one and easily operated by hand.

The parts may be made of the usual materials employed in the art or other materials applicable.

I claim—

1. The yoke-lever, having the upward arm for connection to the lifting-rod and the two lower arms provided with holddown-lugs and the intermediate fulcrum attachment to the valve, in combination with the hinged valve, its stop-lugs for the lower arms of the lever, the gate-frame and its incline lugs to engage the holddown ends of the lever, substantially as shown and described.

2. In combination with the hinged valve, its arms and connecting-links, the pivoted bell-cranks and adjustable balance-weights, arranged at corresponding reversed angles, substantially as shown and described.

3. The adjustably-balanced flushing-gate, comprised of a frame having a through fluid-way and a hinged valve, the yoke-lever with central fulcrum jointed to the valve and arms embracing valve and frame, and locking under lugs provided with inclines upon the frame, an upward arm and jointed lifting-rod with the valve-arms, connecting-links, bell-cranks, adjustable balance-weights, to which they are connected, all arranged and acting together substantially as shown and described.

4. The combination of the gate-frame, its pivoted valve, the pivoted three-arm lever, its engaging lugs, operating-rod, and lever-stops on valve and frame, all arranged and operating together, substantially as shown and described and for the purpose set forth.

5. The three-arm lever and operating-rod in combination with the pivoted valve, and valve-frame, all constructed and arranged substantially as shown and described and for the purpose set forth.

GEORGE S. WALKER.

Witnesses:

F. E. ADAMS,

D. N. B. COFFIN,

E. J. CHADBOURNE.