

(Model.)

J. FOWLER.
Change Valves.

No. 228,051.

Patented May 25, 1880.

Fig. 1.

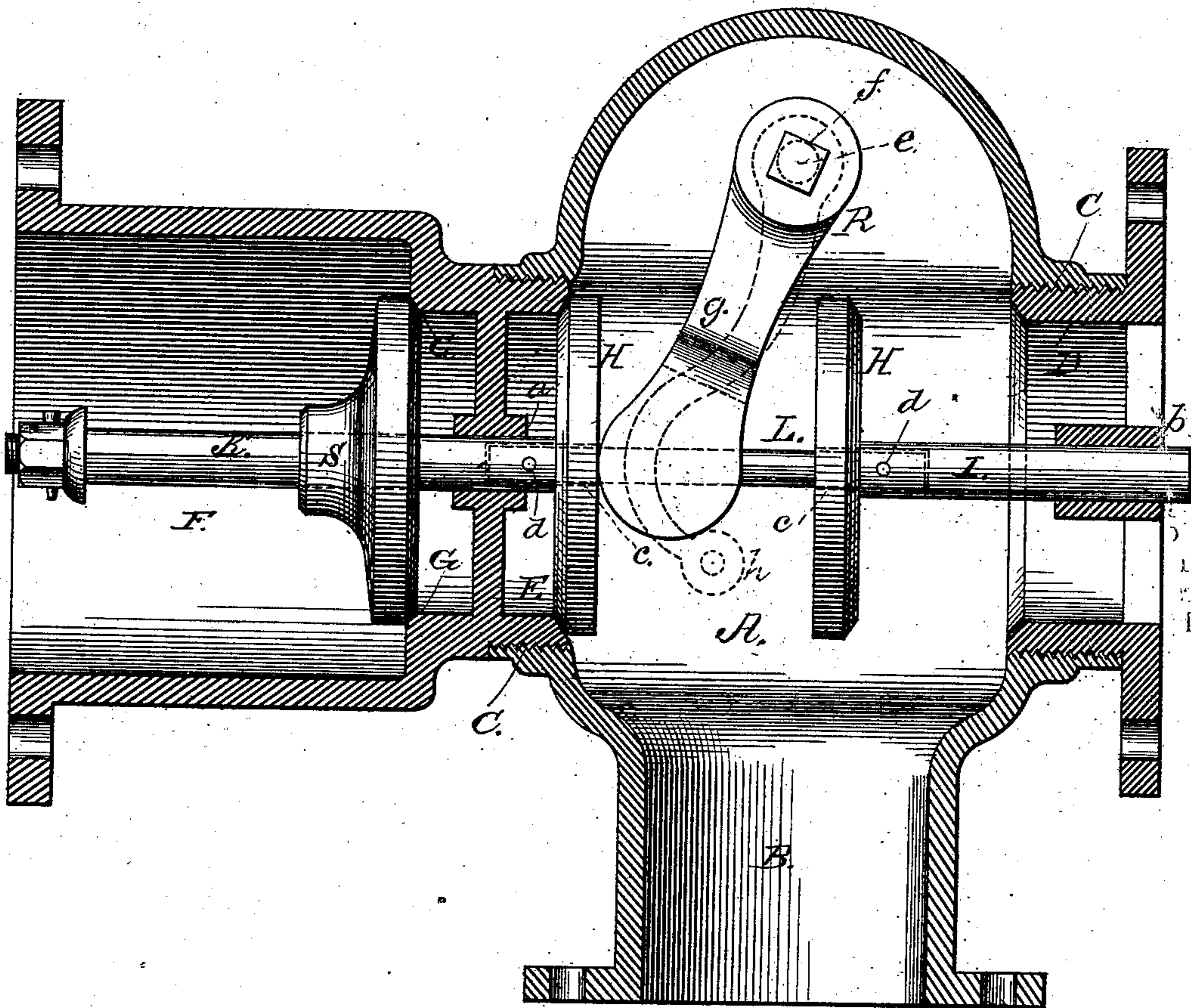
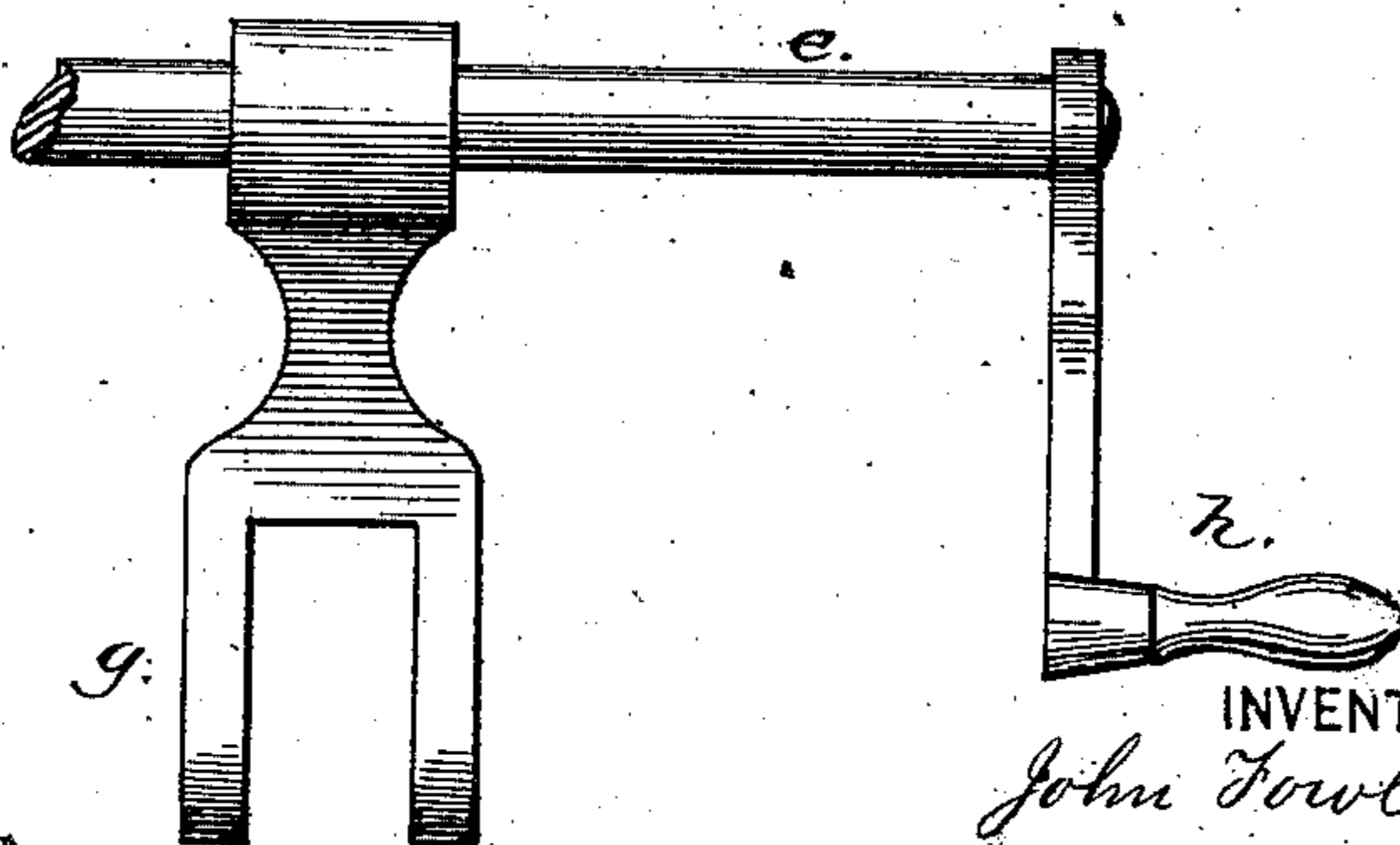


Fig. 2.



WITNESSES

John A. Ellis
Phillips

INVENTOR

John Fowler,
by E. W. Anderson
his ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN FOWLER, OF LOUISVILLE, KENTUCKY.

CHANGE-VALVE.

SPECIFICATION forming part of Letters Patent No. 228,051, dated May 25, 1880.

Application filed April 10, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOHN FOWLER, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and valuable
5 Improvement in Change-Valves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a
10 part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of my improved charge-valve. Fig. 2 is a detail view of the
15 operating-shaft and its arm.

This invention has relation to means for changing the direction of a flow of steam, gas, liquids, or other substances; and it consists in
20 the construction and novel arrangement of the valve-chests and valve-seats, the reciprocating self-adjusting valves and their rod-connection, and the crank-shifter and its operating handle; also, in the combination, with the valve-stem, of a loose or sliding valve, all as hereinafter
25 fully shown and described.

In the accompanying drawings, the letter A designates the valve-box having the flanged opening B, whereby it may be connected to a
30 pipe. At each end of the valve-box openings C are made, and internally threaded to receive the flanged valve-seats D and E, the latter having usually a recess, F, and a shoulder-seat, G, as shown in the drawings.

H H designate the main valves, which are
35 provided with guide-stems I K, which pass through the guide-openings *a b* of the valve-seats. These valves are maintained at a proper distance from each other by a rod, L, which extends by its ends into recesses *c* of the
40 valves. The ends of the rod fit loosely in these recesses, and are secured by pins *d*, so that a little play is allowed to each valve, sufficient to enable it to adjust itself squarely on its seat and close the opening.

45 In order to move the valves to and fro between their seats in the valve-box, a crank-shifter, R, is employed. This consists of a rod or shaft, *e*, passed through a close or packed bearing, *f*, in the valve-box, and having a
50 double arm or shifting projection, *g*, which

plays between the valves H H, usually upon the connecting-rod L. The outer end of the shaft *e* is provided with an operating arm or crank, *h*, by moving which either of the valves can be brought against its seat, its fellow being at the same time lifted or moved away
55 from its seat. In this manner the flow by the opening B through the valve-box may be directed at will through either valve-seat opening C. Sometimes a sliding valve, S, is employed, especially when there is pressure in the
60 chamber or receiver connected with the flanged valve-seat E, this valve being loosely arranged on the stem K of one of the main valves connected with the shifter, and being designed
65 to close against the seat G automatically. The object of this valve is to close the opening to the receiver when the pressure in the valve-box is relieved by the reaction of the
70 pressure in the receiver against said valve, forcing it against its seat.

This shifting or change valve may be used for various purposes, but its principal object is as follows: When connected with a still in
75 a distillery the engineer can use the exhaust-steam from his engine without being under the necessity of notifying any one to close the main valves when he desires to stop his engine. In this connection the valve S will
80 close automatically on account of the pressure in the still, thereby preventing any liquid or matter returning through the pipes into the engine. When used for other purposes not requiring an automatic valve the valve S may
85 be omitted in the construction.

I am aware that a pressure-regulating valve has been arranged with an operating-shaft and weighted crank-arm to hold one of two
90 opposite valves to an outer seat, said valves being connected by a rigidly-attached stem; and I do not claim such devices, my valves being arranged between the seats and kept to seat by pressure of the water or steam.

What I claim as my invention, and desire
95 to secure by Letters Patent, is—

1. The change-valve consisting of the box
A, having openings B C and crank-shifter R,
100 journaled in the box, and having the arm *g*, provided with jaws, the valve-seats D E, the self-adjusting valves H H between said valve-

seats, and having guided stems, and the connecting-rod L, freely seated in recesses in said valves, all constructed and arranged to operate substantially as specified.

- 5 2. The change-valve consisting of the box A, having the openings B C and the valve-seats D E G, the self-adjusting valves H H, their guided stems I K, and loosely-connected rod L, the crank-shifter R, and the automatic

sliding valve S on the long stem K, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN FOWLER.

Witnesses:

AL. AINSLEE,

THOS. W. MORAN.