

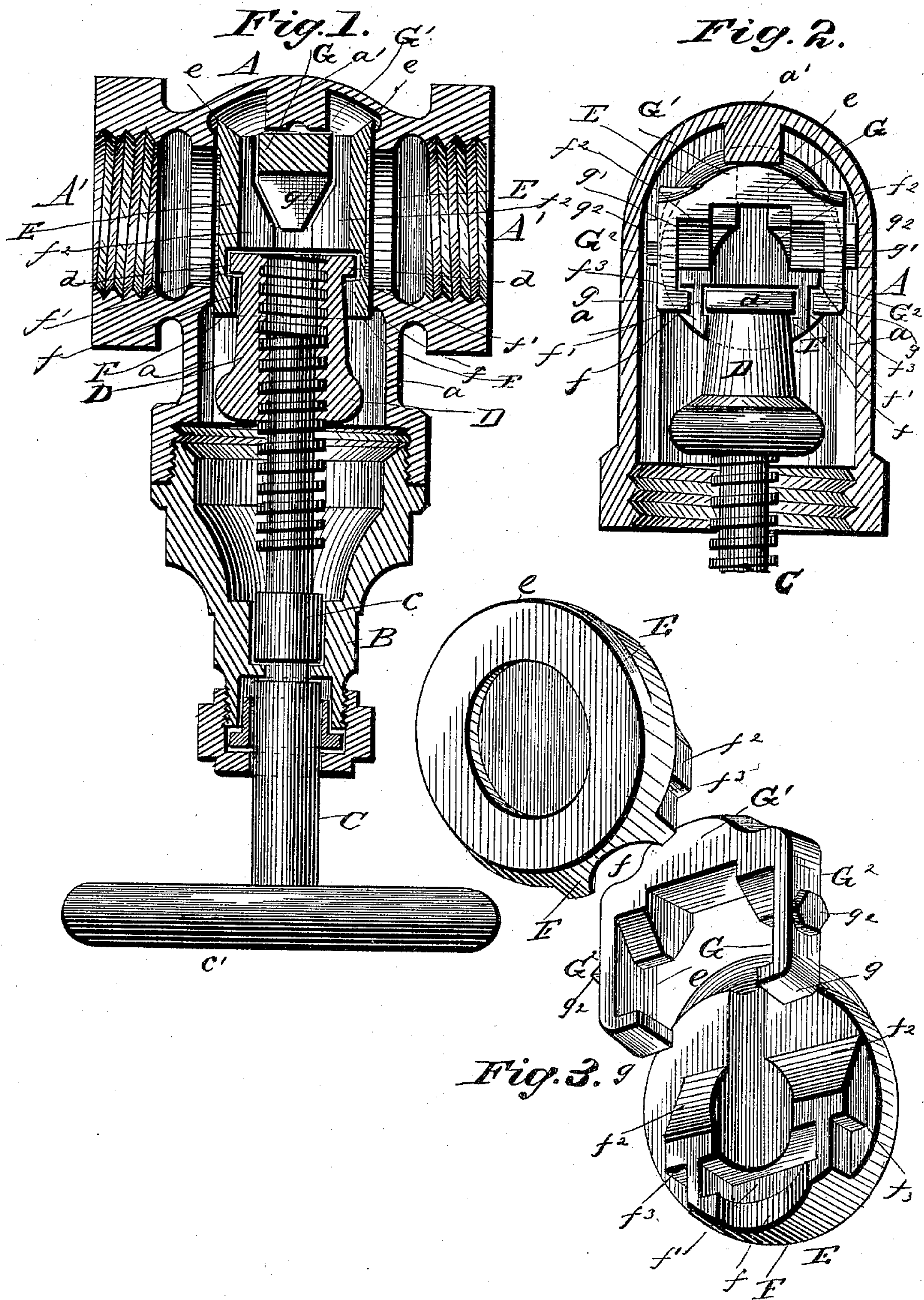
(No Model.)

H. HALL.

STRAIGHT WAY STOP VALVE.

No. 330,322.

Patented Nov. 10, 1885.



WITNESSES

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HENRY HALL, OF LANSINGBURG, NEW YORK, ASSIGNOR TO THE RENSSELAER MANUFACTURING COMPANY, OF SAME PLACE.

STRAIGHT-WAY STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 330,322, dated November 10, 1885.

Application filed September 9, 1885. Serial No. 176,583. (No model.)

To all whom it may concern:

Be it known that I, HENRY HALL, of Lansingburg, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Straight-Way Stop-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a central vertical section of the whole device. Fig. 2 is a transverse vertical section of the lower part thereof, and Fig. 3 represents a perspective view of the gates and actuating parts.

This invention relates to valves with sliding gates, and is based on certain improvements on the invention for which Letters Patent were granted to me on the 26th day of May, 1885, and numbered 318,894.

The present improvements consist, first, in reversing the position of the wedge-shaped lugs and the inclined surfaces on the gates which engage therewith, so that when the valve is situated with its stem downward the gates will not bind by gravity, and, secondly, in making the gates with cutting-edges, so that the ports will be cleared and sticks or like substances passing into the ports and likely to stop the motion of the gates will be sheared off by the latter and the ports freed therefrom, all as will be hereinafter more fully explained, and pointed out in the appended claims. As certain parts are similar to those already described in my before-mentioned patent, such parts will not require so full a description as those peculiar to this invention.

Referring to the accompanying drawings by letter, A designates the T-shaped casing of a valve provided with the ports A' A', the ways *a a* at right angles to and between the ports, and the stop *a'* on the interior of its base, as shown.

B is the stem-casing screwing into the top of the valve-casing, and C is the valve-stem turning in said casing, but not moving longitudinally therein.

c is a collar on the stem C, turning in a chamber, *b*, in the stem-casing, and prevent-

ing the longitudinal movement of the stem.

c' is the hand-wheel, by means of which the stem is turned.

D is a threaded sleeve-nut turning on the threaded end of the stem C, and provided on its inner end with the outstanding rectangular flange *d*, as shown.

E E are the gates of circular form, but having upon their outer edges, on the side opposite their engaging-points with the sleeve-nut D, the curved cutting-edges *e e*. The edges are arranged against the inner surface of the ports, as hereinafter more fully explained.

From the inner surface of each gate, on the side opposite its cutting-edge, stands inwardly a projection, F, through which runs a longitudinal semicircular groove, *f*, and a short distance within the outer end of said groove is a transverse recess, *f'*. When the two gates are placed together, the grooves *f* form a circular canal, into which the lower end of the sleeve-nut passes, opposite corners of the flange *d* passing into the recesses *f'*, so that the gates will move up and down with the sleeve-nut, the engagement of the recesses *f'* and flange *d* preventing the sleeve-nut from turning with the stem. The reaction of the stem consequently causes the sleeve-nut and gates to move up and down. The inner end of each projection F, on each side of the groove *f'*, is beveled toward the surface of the gate, so as to form the inclined surfaces *f² f²*, and on the sides of said projection, outward from the inclined surfaces, are formed the similar shoulders *f³ f³*, for a purpose hereinafter explained.

G is a rectangular piece composed of the transverse bar G' and the similar arms G² at right angles thereto. The ends of the arms G² are bent inwardly to form the flanges *g g*, adapted to engage upon the shoulders *f³*, and at the inner side of the junction of each arm G² with the transverse bar G' is the wedge-shaped projection or lug *g'*, which, when the gates and piece G are in position, lies between two facing inclined surfaces, *f²*, on opposite gates. The outer surface of the bar G' is arranged to engage against the stop *a'* when the valve is closed.

The edges of the gates move in the ways *a* of the casing, and are prevented thereby from

turning, and the piece G has projections g^2 , standing outward from its arms G^2 and entering said ways, to keep the piece G in proper position, if necessary.

5 It is evident from the above description that when the stem is turned the sleeve-nut, gates, and piece G will all move together outward or inward with relation to the casing, and that
10 when moving inward the cutting-edges of the gate will turn light articles—such as straw—inward when they meet the edges of the port in closing, thus clearing said ports; or if small sticks are borne with the water
15 into the ports, they will be cut off by the cutting-edges, so that the ports will be cleared and not prevented from closing. The parts are so arranged that the gates are not pressed against the ports till the cutting-edges have
20 passed the same. Thus the said edges, if ragged, will not mar the ports, and the ports, if ragged or marred, will not injure the cutting-edges. This construction, while it might be used in any position whatever, is particularly adapted to those positions in which the
25 stem is below the gates, and in my patent of May 26, 1885, the piece corresponding to the piece G is also below the gates. In this position the gates in a large valve would fall from their own weight, and being pressed out-
30 ward by the wedge-shaped lugs, which look upward, might have a tendency to bind on the ports. In the present construction the piece G bears the wedge-shaped lugs which look downward, and the gates cannot bind on
35 the ports until the piece G brings up against the stop a' and tightly closes the gates.

Having described my invention, I claim—

1. In a straight-way stop-valve, the combination of the T-shaped casing A, provided
40 with the ports A' and stop a' , the stem rotating but not moving longitudinally therein, and situated below the ports A' , the sleeve-nut traveling on the threaded upper end of said stem and provided with the flange d , the
45 gates having the recesses f' to engage said flange, and the projections F, provided with

the grooves f , inclined surfaces f^2 , and shoulders f^3 , and the piece G, having the transverse bar G' , adapted to bring up against the stop a' when the valve is closed, the wedge-shaped
50 lugs g' to engage between the inclined surfaces f^2 , and the flanges g on the ends of its arms to engage with the shoulders f^3 , all substantially as specified.

2. In a straight-way stop-valve, the combination of the T-shaped casing A, provided
55 with the ports A' and stop a' , the stem C, rotating therein and situated below the ports A' , the sleeve-nut traveling upon the thread of said stem and provided with the flange d , the
60 gates having the recesses f' to engage said flange, the cutting-edges e , to shear against the edges of the ports when the gates ascend, and the projections F, provided with the
65 grooves f , inclined surfaces f^2 , and shoulders f^3 , and the piece G, having the transverse bar G' , adapted to bring up against the stop a' when the valve is closed, the wedge-shaped lugs g' ,
70 and the flanges g on the ends of its arms G^2 , all substantially as and for the purpose set forth.

3. As an article of manufacture, the herein-described valve, composed of the T-shaped casing A, provided with the ports A' , ways a ,
75 and stop a' , the stem-casing B, provided with the chamber b , the valve-stem C, provided with the collar c , the sleeve-nut D, provided with the flange d , the gates E, each having a cutting-edge, e , and provided with the groove
80 f , recess f' , inclined surfaces f^2 , and shoulders f^3 , and the piece G, provided with the transverse bar G' , flanges g , and wedge-shaped lugs g' , all constructed and arranged as shown and described, and for the purpose specified.

In testimony that I claim the foregoing as
85 my own I affix my signature in presence of two witnesses.

HENRY HALL.

Witnesses:

ELLIS L. ROWE,
HARRY E. STOVER.