733,905.

PATENTED JULY 14, 1903.

E. M. ERDMAN.

STRAIGHTWAY VALVE.

APPLICATION FILED APR. 14, 1903.

MODEL.

Fig. 1.

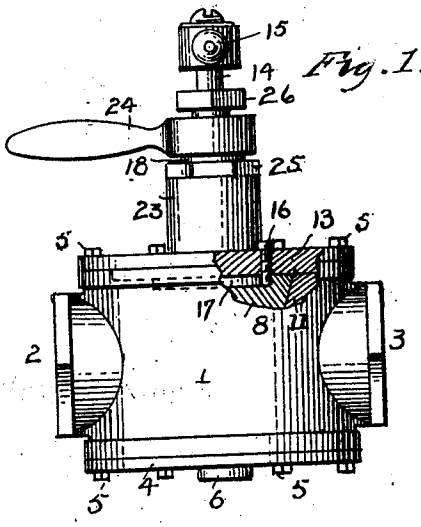


Fig. 3.

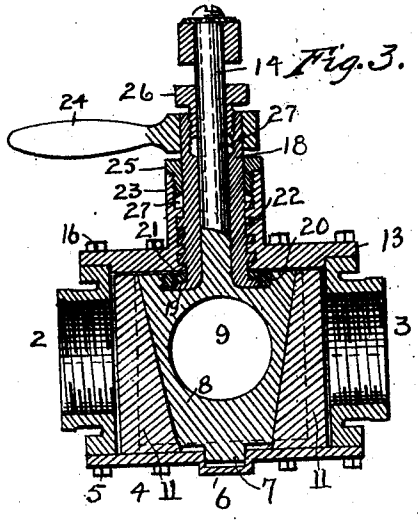


Fig. 2

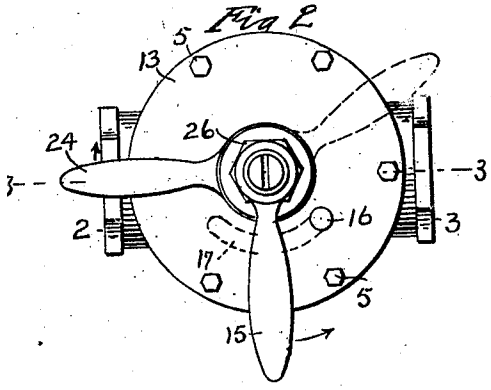


Fig. 4.

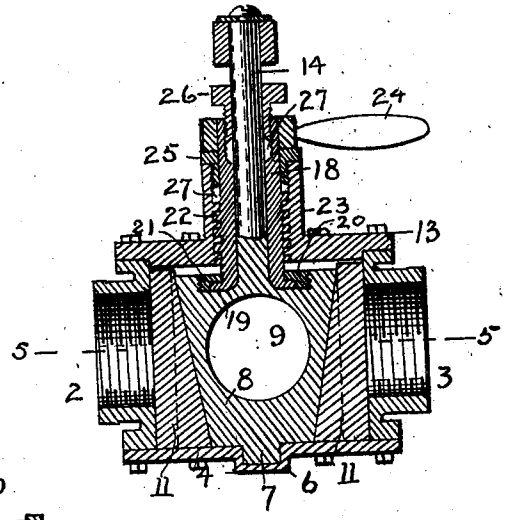


Fig. 5.

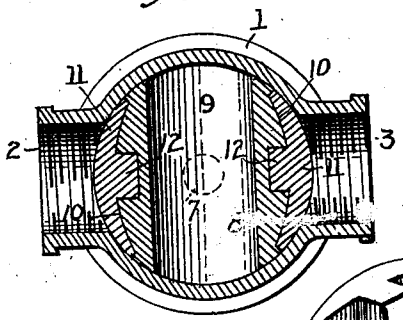
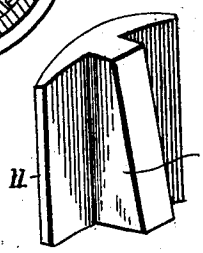


Fig. 6.



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No. 733,905. Patented July 14, 1903.

UNITED STATES PATENT OFFICE.

EDWARD M. ERDMAN, OF POTTSVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM J. MATZ, OF POTTSVILLE, PENNSYLVANIA.

STRAIGHTWAY VALVE.

SPECIFICATION forming part of Letters Patent No. 733,905, dated July 14, 1903.

Application filed April 14, 1903. Serial No. 152,488. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. ERDMAN, a citizen of the United States, residing at Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Straightway Valves, of which the following is a specification.

This invention relates to straightway valves; and its object is to provide a valve of this class which will be simple in construction, can be easily opened and closed, can be locked in either position so that it cannot be accidentally changed, and in which a fluid-tight closure can be produced. These objects are effected by the construction hereinafter set forth, which consists, in brief, of a straightway valve having a turning plug containing a transverse passage-way for the fluid and carrying two loose segments for closing the admission and discharge openings of the valve-casing and provided with wedge-shaped ribs fitting similar grooves in the plug and a screw-threaded sleeve on the valve-stem meshing with threads in the neck of the valve-casing and swiveled into the plug, so that an angular movement of said sleeve will move the plug lengthwise and cause it to force the segments tightly against the walls of the casing.

In the accompanying drawings, Figure 1 is a side elevation of a straightway valve embodying my invention and partly broken away. Fig. 2 is a top plan view. Fig. 3 is a longitudinal section on the line 3 3, Fig. 2, showing the valve closed and unlocked. Fig. 4 is a similar section showing the valve locked. Fig. 5 is a transverse section on the line 5 5, Fig. 4. Fig. 6 is a perspective view of one of the segments.

The valve-casing has a cylindrical body 1, provided with diametrically opposite inlet and outlet openings 2 3. The bottom of the casing is closed by a flat head 4, secured by screws 5 and preferably having a central socket 6 for the pivot 7 of the turning plug 8, which has an easy fit in the body of the casing and is provided with a transverse passage-way 9, adapted to register with the openings 2 3 when the valve is open. In each side of the plug between the ends of the passage-way 9 is a shallow recess 10 to receive a loose segment 11, which is wider than the openings 2 3, so that when the valve is closed said segments will overlap said openings at each side, as shown in Fig. 5. On the back of each segment is a rib 12, having its edge inclined. The ribs fit in similarly-inclined grooves in the plug, so that the portion of the plug between said grooves is wedge-shaped in section. The segments fit snugly at top and bottom against the upper head 13 and the lower head 4 of the casing; but the plug is shorter than the segments, so as to be capable of a slight amount of play endwise. When the plug is moved downward, the segments are wedged apart and forced tightly against the walls of the casing; but when the plug is lifted the pressure is relieved and the plug and segments can be easily turned. The plug has a stem 14, projecting through the head 13 and provided with a handle 15. A stop-stud 16 projects through the head 13 into a groove 17 in the top of the plug and concentric with the axis thereof, the length of the groove being a quadrant, so that the plug can be turned just ninety degrees in order to effect a complete opening or closing thereof.

Surrounding the stem is a sleeve 18, having at its lower end a flange 19, which rests on the top of the plug and is retained there by a ring 20, secured to said plug and having a flange 21 overlapping the flange on the sleeve. This construction acts like a swivel and permits the sleeve to be rotated independently of the stem. The flange 19 and ring 20 are preferably received in an annular recess in the top of the plug. The exterior of the sleeve is provided with screw-threads 22, which mesh with screw-threads on the inside of a neck 23, rising from the head 13. Above the neck the sleeve is provided with a handle 24, by which it can be rotated. A gland 25 is screwed into the upper end of the neck, and a similar gland 26 is screwed into the upper end of the sleeve to make fluid-tight joints around the sleeve and stem by means of the packing 27, which said glands compress.

The operation is as follows: When the parts stand as shown in Figs. 1, 2, and 3, the valve is closed, but the plug is free to turn easily. To lock it, the handle of the sleeve is turned

to the dotted position in Fig. 2, which forces down the plug and wedges the segments tightly against the casing, as shown in Figs. 4 and 5. Owing to the great friction thus produced it is then impossible to turn the plug, and thus the parts are effectually locked against accidental movement. By turning the sleeve-handle back to the position shown in Figs. 1, 2, and 3 the plug is raised, the segments released, and the valve can be opened by giving the plug-handle a quarter-turn to the right in Fig. 2. If desired, the valve can be locked in this position by screwing the sleeve down again.

Having described my invention, what I claim is—

1. In a straightway valve, the combination with a turning plug and its stem, of loose segments carried by said plug, inclined faces between said plug and segments, and a screw-threaded sleeve surrounding said stem and swiveled to said plug.

2. In a straightway valve, the combination with a turning plug and its stem, of loose segments carried by said plug, inclined faces between said plug and segments, a screw-threaded sleeve surrounding said stem and having a flange, and a ring secured to said plug and engaging with said flange.

3. In a straightway valve, the combination with a turning plug and its stem, of loose segments carried by said plug, inclined faces between said plug and segments, a screw-threaded sleeve surrounding said stem and having a flange entering a recess in the top of said plug, and a ring screwed into said recess and having a flange overlapping the flange on the sleeve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD M. ERDMAN.

Witnesses:
FRANK LITTLE,
WM. W. NEWELL.