W. MANN & S. OWENS.

VALVE.

No. 189,049. Patented April 3, 1877.

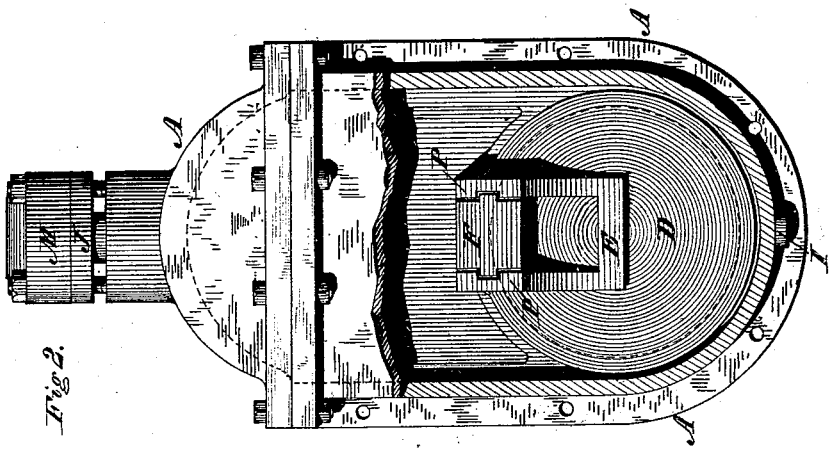

Fig 2.

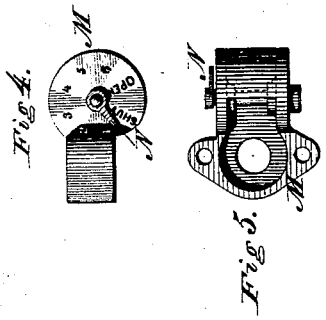

Fig 4.

Fig 5.

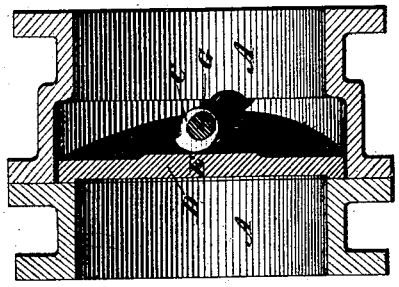

Fig 3.

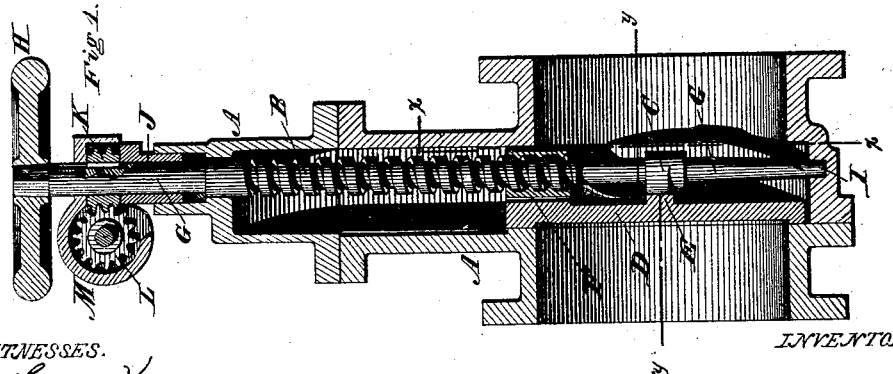

Fig 1.

WITNESSES.

Harry King Del.

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Mann & Owens,
By their Attorneys,
Stansbury & Munn

INVENTOR.

UNITED STATES PATENT OFFICE.

WILLIAM MANN AND SAMUEL OWENS, OF LONDON, ENGLAND.

IMPROVEMENT IN VALVES.

Specification forming part of Letters Patent No. **189,049**, dated April 3, 1877; application filed February 22, 1877.

To all whom it may concern:

Be it known that we, WILLIAM MANN and SAMUEL OWENS, of London, England, have invented a new and useful Improvement in Valves; and we do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of the valve. Fig. 2 is a side elevation, the shell being broken away on line *x x* of Fig. 1. Fig. 3 is a horizontal section on line *y y* of Fig. 1, looking downward; Figs. 4 and 5, details of the indicator.

The same letter indicates the same part wherever it occurs.

The nature of our invention consists in the peculiar construction of a valve-locking device, in which the same screw-spindle which raises and lowers the slide carries a spiral cam or eccentric, which bears against a rib on the back of the slide to close the same, and by the rotation of the spindle releases the slide, both movements being instantaneous, and unaccompanied by the sticking and jamming which are apt to occur in valves in which the locking is done gradually by a wedging device.

In the accompanying drawings, A marks the body or case of the valve, and B the screw portion of the spindle G. The lower end of the spindle turns in a step, I, at the bottom of the valve, and to its upper end is attached a crank or hand-wheel for turning it. The screw B passes through a threaded nut, F, working, with slight play, in a bracket, P, fixed to the slide D. By turning the spindle the screw is made to raise or lower the slide, to open or close the valve, as desired. On the part of spindle G below the screw B is attached a spiral cam, C, which has a bearing on a rib or projection, E, when the valve is shut, at which moment the projection comes into position to receive the pressure of the cam.

When the valve is to be opened, the spindle G is turned the reverse way, and, by the slight play allowed the nut F, the pressure of cam C upon rib E is removed, so as to relieve the slide of all pressure before the screw comes into position for lifting the slide D.

Near the top of spindle G is fixed, by a key, a worm, K, which gears into a worm-wheel, L, fixed on a horizontal axis. On the end of this axis is a pointer, which shows, by its position on an index-plate, the position of the valve, indicating to what extent it is opened or closed.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the spindle G, screw B, nut F, cam C, rib E, and slide D, all constructed, arranged, and operating substantially in the manner and for the purpose described.

2. The slide D, provided with the rib E, and driven to its seat by means of a cam on the same shaft as the screw, for raising and lowering the slide, all as specified.

3. The nut F, playing in the bracket P, in combination with the screw B, cam C, and slide D, all as and for the purpose stated.

The above specification of our said invention signed and witnessed at London this 3d day of November, A. D. 1876.

WILLIAM MANN.
SAMUEL OWENS.

Witnesses:
HENRY COLEY,
CHARLES BUTLER.