(No Model.)

A. H. MORRISON.

STEAM THROTTLE VALVE.

No. 304,443. Patented Sept. 2, 1884.

Fig. 1.

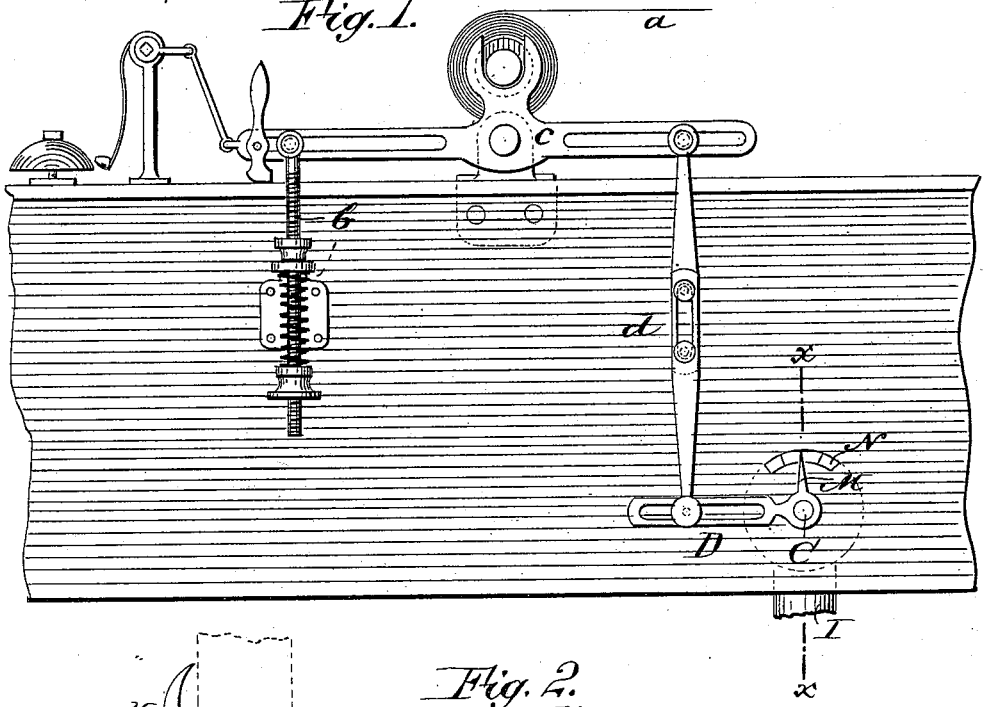

Fig. 2.

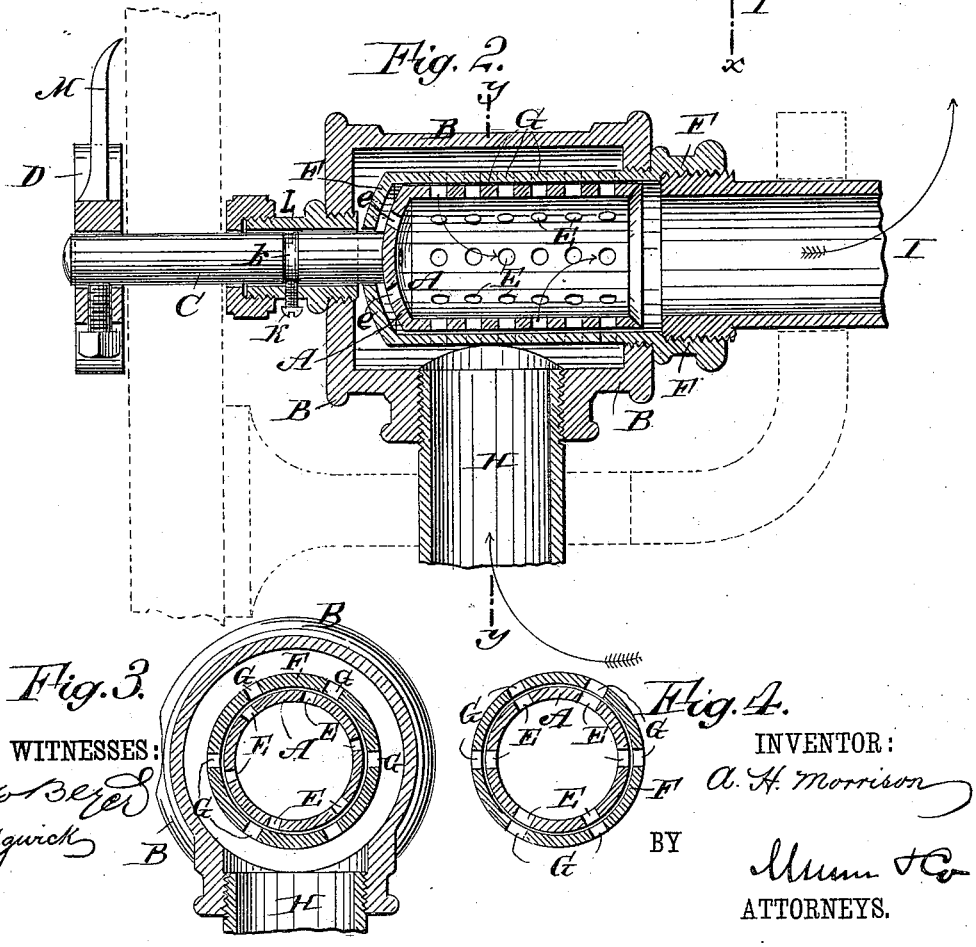

Fig. 3.

Fig. 4.

WITNESSES:

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AUGUSTUS HINKLEY MORRISON, OF MECHANICSVILLE, NEW YORK.

STEAM THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 304,443, dated September 2, 1884.

Application filed December 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS H. MORRISON, of Mechanicsville, in the county of Saratoga and State of New York, have invented a new and Improved Steam Throttle-Valve, of which the following is a full, clear, and exact description.

My invention relates to a valve for automatically regulating the flow of steam where, in a given operation or need of steam, a varying amount is required, and the amount required controlling the operation of the valve; and it consists in the devices substantially as hereinafter set forth and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a paper-drying apparatus, showing my improved valve as applied thereto in connection with a regulating device. Fig. 2 is an enlarged longitudinal sectional view of the valve on line *x x* of Fig. 1. Fig. 3 is a cross-section on line *y y* of Fig. 2, showing the valve closed; and Fig. 4 is a detail showing the valve open.

In the construction of my valve I provide an outer box or case, B, in one end of which is secured a hollow cylinder, F, closed at its inner end, and provided with apertures G, as shown, and in this fixed cylinder I fit closely another cylinder, A, also closed at its inner end, and provided with apertures E, corresponding to the apertures G of the cylinder F. The cylinder A is provided with a stem, C, passing through an opening in the closed end of the cylinder F, and through a bearing or a packing-gland, L, at the other end of the valve-case B, which stem is for operating the valve by (in this case) a lever, D, connected with the tension-regulator of a paper-drying apparatus, which regulator is to be made the subject-matter of a separate application for Letters Patent of even date herewith, and need not be here described.

By securing the valve-stem C to the outside of the closed end of the cylinder A and passing it through the closed end of the cylinder F and the gland L, I leave the space within the cylinder entirely free of obstruction, whereas in a former construction the valve-stem was secured to a boss projecting into the cylinder, and the rod then passed through the entire cylinder and through a gland in the casing. The partial rotation of cylinder A brings the holes in the two cylinders opposite each other, opening a passage for steam, as seen in Fig. 4, or separates them, closing the passage, as shown in Fig. 3; or the passage may be partly closed, allowing a smaller amount of steam to pass, to meet a varying demand. Apertures *e* are made in the closed end of the cylinder A, and steam, pressing on both sides of the closed end of cylinder A, keeps it balanced, and there is little or no pressure, as the cylinder is not pressed to a seat by the steam. The steam enters the valve by the pipe H and leaves it by pipe I, following the course of the arrows.

To preserve the cylinder A from longitudinal displacement a set-screw, K, is placed in the bearing L, having one end fitting in a groove, *k*, in the valve-stem C. The valve-stem C is provided with an index-finger, M′, to show on a suitable dial, N, the position of the valve.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A valve constructed substantially as described, and consisting of a case, B, having a bearing and packing-gland, L, at one end, and a cylinder, F, closed at its inner end, secured in the opposite end, in which fixed cylinder a cylinder, A, also closed at its inner end, is fitted, said inner cylinder having a stem, C, secured to the outside of its closed end, extending through the end of the cylinder F and the bearing L, and the said cylinders A and F having the corresponding apertures E and G, and the case B having inlet and outlet openings, substantially as described, whereby, by the revolution of the inner cylinder, the volume of steam passing the valve can be regulated.

AUGUSTUS HINKLEY MORRISON.

Witnesses:
D. S. DOUGLASS,
D. M. CHURCH.