

J. H. STREHLI.
Steam-Engines.

No. 142,295.

Patented August 26, 1873.

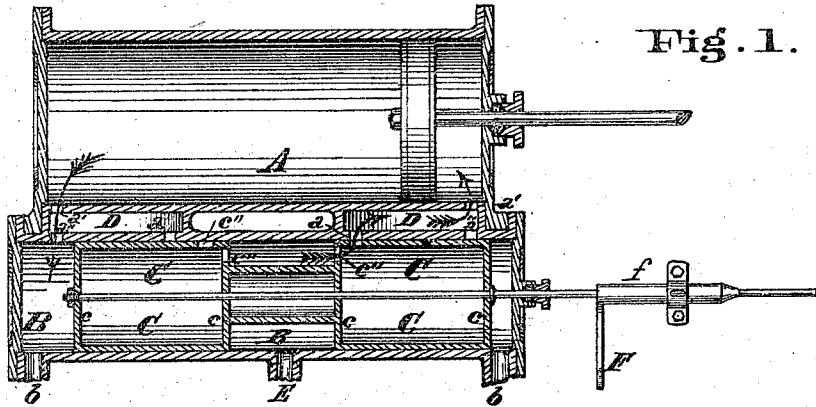


Fig. 2.

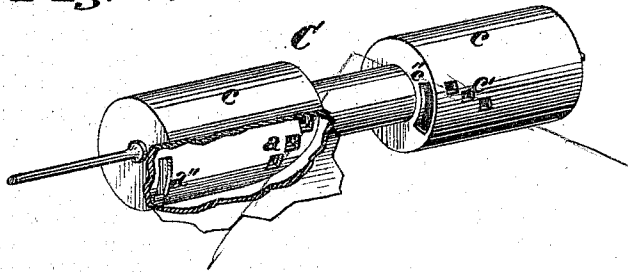
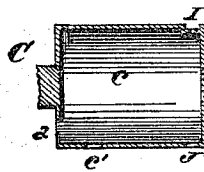


Fig. 3.



Attest

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JOSEPH H. STREHLI, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEAM-ENGINES.

Specification forming part of Letters Patent No. **142,295**, dated August 26, 1873; application filed June 17, 1873.

To all whom it may concern:

Be it known that I, JOSEPH H. STREHLI, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Steam-Engines, of which the following is a specification:

My invention consists of a peculiarly-constructed steam-cylinder and slide-valve governing the ports of the same, by which the valve is enabled, by the operation of a governor, to not only open and close the ports at the proper time, but to regulate the amount of steam admitted, so as to regulate the speed of the engine. My invention further consists of peculiarly-constructed chambers between the cylinder and valve-chamber, and in a peculiar balancing device for the valve, by which a free exhaust is obtained direct from the cylinder and the valve relieved from unbalanced pressure.

Figure 1 is a sectional plan of the cylinder, valve-chamber, and attachments of the engine. Fig. 2 is a perspective view of the valve and portion of the cylinder, so as to exhibit the operation and construction of the supply and exhaust ports. Fig. 3 exhibits the device for balancing the valve in its chamber when opposite the end ports of the cylinder.

A is the steam-cylinder, B the valve-chamber, and C the sliding piston-shaped valve, of the engine. D D are intermediate chambers, which are alternately steam and exhaust chambers. Three ports are provided at each end of the cylinder—port *a* delivering live steam to the chamber D; port *a'* delivering live steam to the cylinder and returning the exhaust; and port *a''* serving to deliver the exhaust to the chamber B directly, where it escapes at pipe *b*. Pipe E delivers the live steam to the valve-chamber between the pistons *c c* of the valve C. The ports *a* are made by diagonal steps, as shown, or by a single spiral opening each, and the valve C is provided with ports *c'* to match the ports *a*. The ports *c'* are fed through openings *c''*. Lever F and sleeve *f* are attached

rigidly to the stem of valve C, the sleeve being fitted to slide in bearing G. The rod H, which is reciprocated by the usual eccentric on the shaft of the engine, is so attached to rod or sleeve *f* as to swivel therein, so that a governor connected to lever F may rotate the valve C, and thus open or contract the spiral or diagonal ports *a c'*, to govern the speed of the engine automatically.

The provision of the chamber D, with its ports arranged in the manner described, gives a direct exhaust, as shown.

Recesses I located opposite the cylinder A, and fed through the holes J, balance the valve when opposite ports *a' a''*.

I prefer the step or diagonal row of openings of rectangular shape, as shown, for the ports *a c'*, for the reason that less rotative motion is required to accomplish the purpose of cutting off than if the ports were made by a single spiral opening.

I claim—

1. The piston-valve C *c c*, adapted alone to control the ports of the cylinder A when made with diagonal or step openings *c'*, substantially as described, and so fitted to its operating-rod as that it may be rotated by a governor for the purpose of cutting off the steam automatically to govern the speed of the engine.

2. The combination of cylinder A, valve-chamber B, and intermediate chambers D D, communicating with each other by ports *a a' a''*, and operating in connection with a suitable valve, substantially as and for the purpose specified.

3. In the piston-valve C *c c*, the recesses I and pipe or opening J, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JOSEPH H. STREHLI.

Witnesses:

FRANK MILLWARD,
J. L. WARTMANN.