W. H. Akins,

Rotary Steam Valve.

No. 52,511. Patented Feb. 13, 1866.

Fig. 1

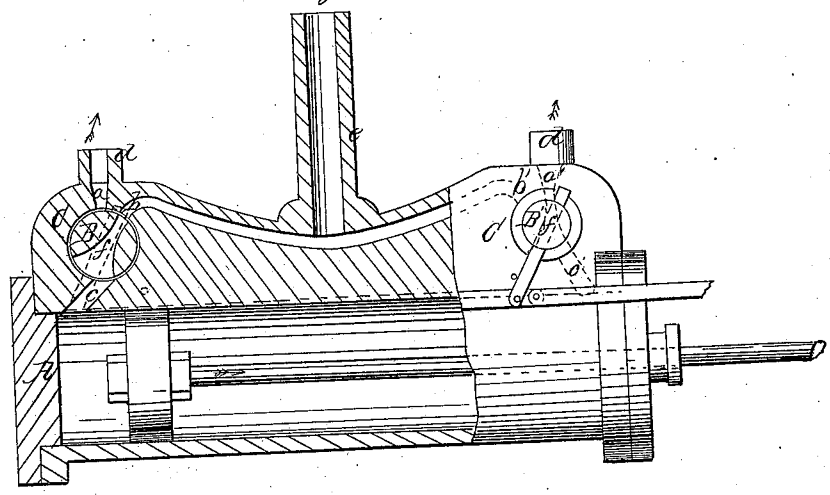
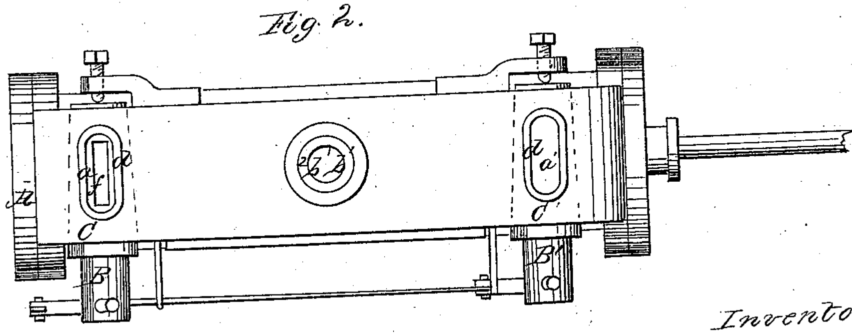


Fig. 2.



Witnesses:

[illegible]

[illegible]

Inventor

Wm. H. Akins

Munn & Co

Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. AKINS, OF DRYDEN, NEW YORK.

IMPROVEMENT IN PLUG-VALVES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **52,511**, dated February 13, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. AKINS, of Dryden, in the county of Tompkins and State of New York, have invented a new and Improved Steam-Valve; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional plan or top view of this invention. Fig. 2 is a side elevation of the same.

Similar letters of reference indicate like parts.

This invention relates to a plug-valve which is provided with a steam-passage extending through the plug, flaring-shaped at its opening leading to the induction-port, in combination with a shell having three apertures, one of which serves to admit steam to the shell, while the other leads to the exhaust-pipe, and the third to the cylinder, in such a manner that the induction-port on the aperture leading from the shell to the cylinder is always open, and by turning the plug it is alternately made to communicate with the steam-supply pipes and then with the exhaust-pipe, and consequently a trifling motion imparted to said plug-valve changes the steam instantaneously.

A represents a steam-cylinder provided with two valves, B B′, one at each end. These valves are of that class generally known as "plug-valves," and they are fitted into shells C C′, each of which is provided with three openings, *a b c a′ b′ c′*. The openings *a a′* communicate with the steam-supply pipe *d*, the openings *b b′* with the exhaust-pipe *e*, and the openings *c c′* lead to the interior of the cylinder.

The plug-valves themselves are perforated with channels *f f′*, the inner spaces of which are larger than the outer, as clearly shown in Fig. 1 of the drawings. By turning the valves in their shells the outer spaces of these openings are made to coincide either with the steam-supply openings *a a′* or with the exhaust-openings *b b′*; but their inner spaces are always so situated that the ports *c c′* are always open, and by turning the valves they are alternately brought in communication with the steam-supply openings *a a′* and then with the exhaust-openings *b b′*.

In practice, if the valves are properly placed, the channel *f* of the valve B coincides with the exhaust-pipe when the channel *f′* of the valve B′ coincides with the steam-pipe, and vice versa; and by imparting to the valves a slight oscillating motion the steam is changed at the proper intervals. The motion of the valves is effected by means of a rock-shaft, eccentric, cam, or any other suitable mechanism. It requires little power, and the steam can be changed almost instantaneously and worked at or very near to boiler-pressure.

What I claim as new, and desire to secure by Letters Patent, is—

1. A plug-valve, B, provided with a channel, *f*, flaring-shaped, in combination with a shell, C, provided with three apertures or ports, *a b c*, substantially as and for the purpose set forth.

2. The arrangement of two valves, B B′, with flaring-shaped channels *f f′*, in combination with shells C C′, having ports *a b c a′ b′ c′*, and with a steam-cylinder, A, constructed and operating substantially as and for the purpose described.

WILLIAM H. AKINS.

Witnesses:
E. R. HULBERT,
HIRAM BOUTON.