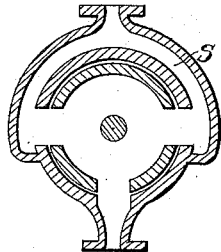
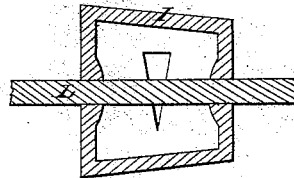
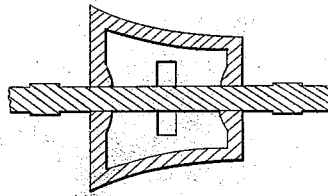
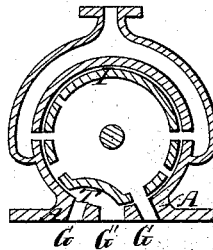
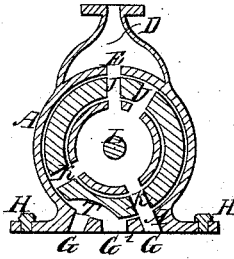
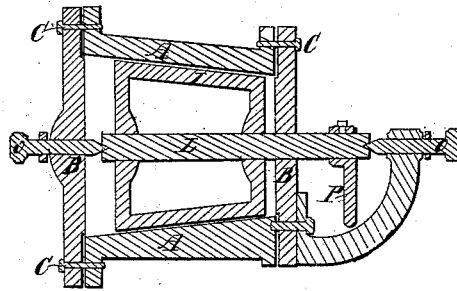
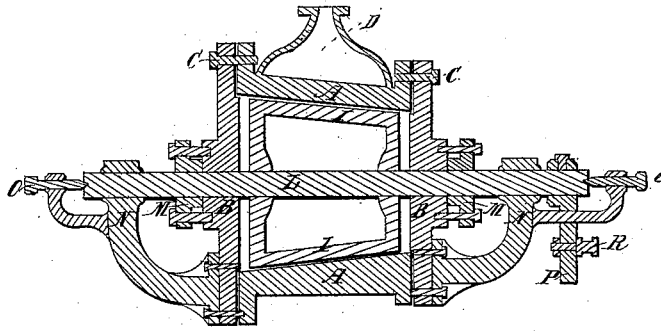


G. Davis,
Rotary Steam Valve.
No 45,910. *Patented Jan. 17, 1865.*



Witnesses:
Alex. A. C. Mauck
C. C. Smith

Inventor:
Guy Davis
By Munroe
Atty's

UNITED STATES PATENT OFFICE.

GUY DAVIS, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN OSCILLATING VALVES.

Specification forming part of Letters Patent No. 45,910, dated January 17, 1865.

To all whom it may concern:

Be it known that I, GUY DAVIS, of the city of Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Valves for Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification.

The nature of my invention consists in providing steam-engines with suspended conical or cylindrical valves.

Make a cylindrical steam-chest, A, to be attached to the side of steam cylinders in the same manner as the square steam-chest in ordinary use at this time. Turn out the inner surface perfectly true, making the diameter of the chest less at one end than at the other, and giving the whole a conical form. Close each end of the chest A by the heads B B, which may be held firmly by the bolts C. Upon the upper part of the cylinder or chest A make a flat surface for the attachment of the steam-chamber D, which is connected by flanges with the steam-pipe coming from the boiler. Through the upper part or face of the chest A make an elongated opening, E, for the passage of the steam from the chamber D into the chest A. Through the lower face of the chest A make three elongated openings, G, corresponding with the same number of openings in the upper surface of the large steam-cylinder.

The chest A is to be attached to the main steam-cylinder in the same manner as the square steam-chest containing the common slide-valve.

Make the valve I of any suitable metallic substance, having the form corresponding with the form of the inner surface of the chest A. The length of the valve must be less than the length of the space between the heads B, and the valve may be ground to a fit in chest A by means well known to machinists. Make the valve I hollow in the center and having two openings, J, through the upper portion, either of which may be made to correspond at pleasure with the opening E, and thus allow the steam to pass from the chamber D into the center of the valve.

Make two openings, K, on the opposite side of the valve from the openings J, so as to correspond at pleasure with the openings G in the face of the steam-cylinder. These openings are to allow the steam to pass alternately into

each end of the steam-cylinder. Make an exhaust-chamber, T, in the valve between the openings K, which may alternately connect the openings G from each end of the main cylinder with the central opening, G', which is connected with the exhaust-pipe of the engine.

Pass a shaft, L, through the center of the valve I, projecting outside of the steam-chest A sufficiently far to be held firmly by the bearings N.

O O are set-screws, so arranged that by screwing up one and unscrewing the other the position of the valve I may be changed or adjusted within the steam-chest A.

M M are packing-boxes in the center of the heads B B, for the purpose of preventing the escape of steam around the shaft.

P is a crank attached to the shaft L, having a wrist, R, connected with the main shaft of the engine by means of a connecting-rod and eccentric. An oscillating motion is thus communicated through the shaft L to the valve I, thereby so connecting the several openings as to allow the steam to act alternately in each end of the working or steam cylinder, the steam passing in a direction at right angles with the shaft L.

It may readily be seen that by means of the shaft L resting in the bearings N the valve I is suspended within the chest, and by means of the set-screws O O the valve may be so adjusted as to work with little or no friction between its surface and the inner surface of the chest A, the two surfaces being so nearly in contact as to prevent the passage of steam between them.

The power required to work this form of valve is found to be far less than that of the slide-valves in general use.

I do not confine my invention to the exact purpose described, but it may be used as a governor-valve, in which case the form shown at S would be preferable.

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

The conical suspended valve I, with its openings J J communicating with the steam-chest, and the induction-openings K K and eduction-opening T communicating with the cylinder, substantially as described.

GUY DAVIS,

Witnesses:

R. F. STEVENS,
T. D. DAVIS.