

(No Model.)

B. H. TAYLOR.
SLIDE VALVE.

No. 585,798.

Patented July 6, 1897.

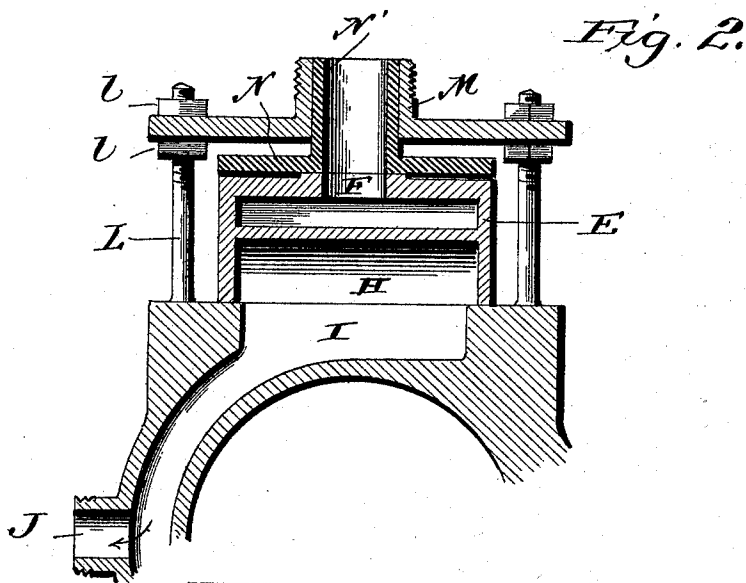
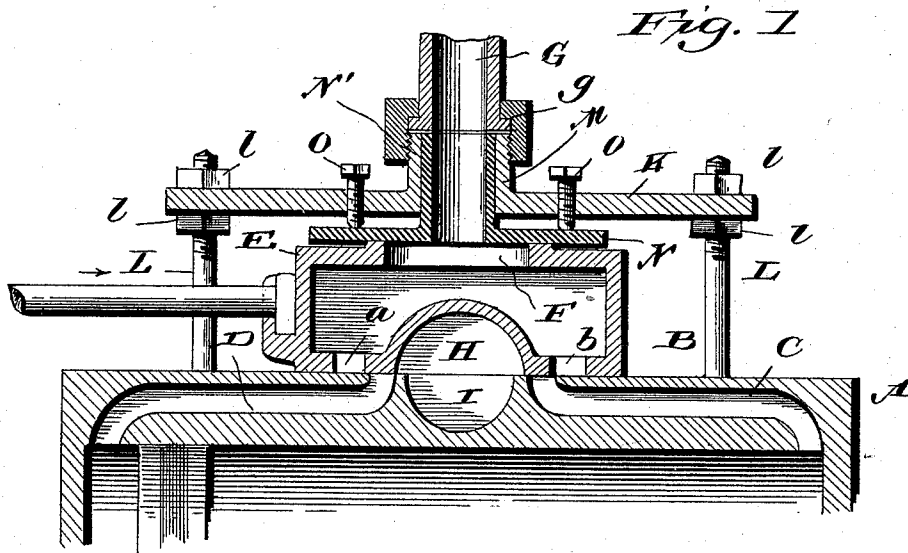
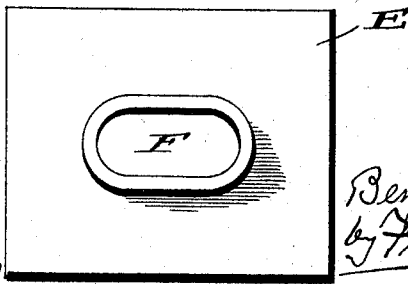


Fig. 3.



Witnesses:
L. C. Mills.
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Inventor:
Benjamin H. Taylor,
by Franklin H. Hough
Atty.

UNITED STATES PATENT OFFICE.

BENJAMIN H. TAYLOR, OF ROSEDALE, MISSISSIPPI, ASSIGNOR OF ONE-HALF
TO OSCAR G. McGUIRE, OF SAME PLACE.

SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 585,798, dated July 6, 1897.

Application filed June 27, 1896. Serial No. 597,264. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN HENDERSON TAYLOR, a citizen of the United States, residing at Rosedale, in the county of Bolivar and State of Mississippi, have invented certain new and useful Improvements in Slide-Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in balanced slide-valves; and it has for its object, among others, the provision of a valve of this character which will combine in a single element both a slide-valve and steam-chest, thus dispensing entirely with the ordinary form of steam-chest and admitting the steam directly to the hollow interior of the valve, from which the steam is supplied through suitable ports at opposite ends of the cylinder.

My invention consists in the cylinder having a valve-seat formed on its top and a slide-valve which forms both a valve and a steam-chest, combined with a vertically-adjustable top plate that is connected to the cylinder and provided with a tubular opening through its center, a second adjustable plate provided with a tubular collar which extends into the tubular opening in the top plate, and set-screws which are passed through the top plate and regulate the pressure upon the valve, as will be more fully described hereinafter.

The object of my invention is to provide a double means for regulating both the pressure upon the top of the slide-valve and the pressure of the valve upon its seat.

To these ends and to such others as the invention may pertain the same consists in the novel construction and in the peculiar combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying draw-

ings, and then specifically defined in the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating the same parts throughout the several views, and in which drawings—

Figure 1 is a vertical longitudinal section of a valve constructed in accordance with my invention, the same being shown in connection with the cylinder of a steam-engine. Fig. 2 is a central vertical transverse section of the same. Fig. 3 is a top plan view of the slide-valve.

Reference now being had to the details of the drawings by letter, A designates a steam-engine cylinder of ordinary construction, having the usual ports C and D leading to opposite ends of the cylinder.

E is my improved slide-valve, which is seated upon and designed to move over the ground-valve seat or level surface B, provided upon the upper face of the cylinder, being provided with the usual rod or pitman which conveys motion to the machinery operated by the engine. This valve E consists, essentially, of a hollow box or chamber having at its longitudinal center an exhaust-chamber H, which chamber extends transversely across the valve and is preferably semicircular in cross-section, the open bottom of the chamber registering with an exhaust-port I, leading to an outlet J at the side of the cylinder, as shown. The bottom plate of the slide-valve is also provided with ports *a* and *b*, which when the valve is moved will register with the ports C and D of the cylinder alternately.

Steam is admitted to the interior chamber of the valve through a vertical inlet-pipe G, which is passed through a fixed plate K and communicates with an elongated opening F in the top plate of the valve, the said elongated opening being of sufficient length to admit at all times of a free ingress of the steam to the valve regardless of its throw.

N is a plate having a central opening, surrounding which is an upwardly-extended

collar or pipe N', which collar or pipe is passed upward through the interior of a corresponding collar M, rising from the plate K. O O are set-screws which are passed downward
 5 through the plate K and at their lower ends bear against the upper face of the plate N. It will be seen that by adjusting these nuts any desired degree of pressure may be secured upon the said plate N, which bears upon the
 10 upper face of the slide-valve.

The lower end of the pipe G, I have shown as provided with an outwardly-extending flange g, which bears against the upper end of the collar M, and this union or connection
 15 of the pipe with the said collar being maintained by means of a suitable screw-threaded and steamed-packed collar N'.

The plate K is held in place by means of posts L, which rise from the upper face of
 20 the cylinder and at their upper ends are screw-threaded. Jam-nuts l l upon these posts, bearing upon both the upper and lower faces of the plate, serve to hold the plate securely in place and permit of its vertical ad-
 25 justment, as will be readily seen. This plate is made vertically adjustable for the purpose of affording a double adjustment for regulating the pressure of the valve upon its seat and the pressure of the plate N upon the top
 30 of the valve. In first adjusting the parts in place for operation the screws O are turned back and the plate K is adjusted down upon or very close to the top of the plate N. Should
 35 the valve work loose, so that the steam escapes at either top or bottom, it can be tightened either by means of the set-screws O or

by adjusting the jam-nuts l, as may be desired. This double adjustment of parts enables small short set-screws O to be used.

The operation of the valve will be readily
 40 understood. It will be seen that the steam will be admitted alternately to the opposite ends of the cylinder as the valve is reciprocated and that as the steam is entering the
 45 port at one end of the cylinder the exhaust-steam from the opposite end of the cylinder will enter the exhaust-chamber in the valve and thence will pass out through the exhaust-
 port I.

What I claim to be new, and desire to se-
 50 cure by Letters Patent, is—

The cylinder, having a valve-seat formed on its top, and a hollow valve which forms a
 55 combined steam-chest and valve, combined with the adjustable plate E, having a tubular collar N' upon its top to form a continuation of the steam-pipe; the plate K, also vertically adjustable, and provided with a tubular collar at its center to make connection
 60 with the steam-pipe; the rods L, rising from the cylinder and passing through the plate K, the jam-nuts l on the rods, and the set-screws O, which extend through the plate K and regulate the pressure of the plate N upon
 65 the valve, substantially as shown.

In testimony whereof I affix my signature
 in presence of two witnesses.

BENJAMIN H. TAYLOR.

Witnesses:

W. L. VAN LOAN,
 FRANKLIN H. HOUGH.