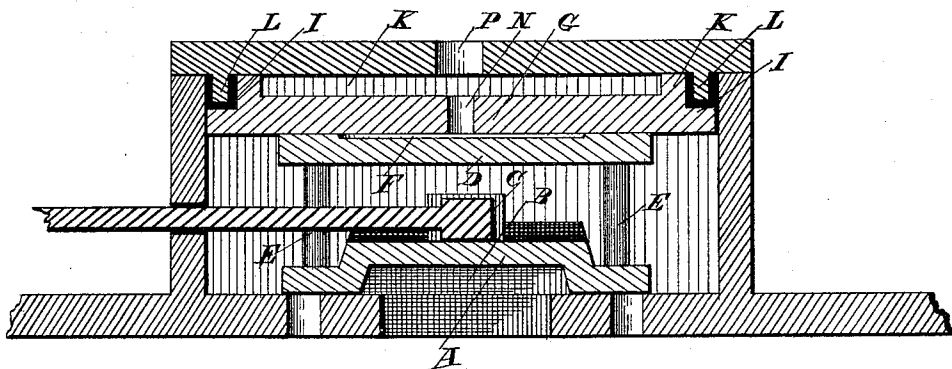
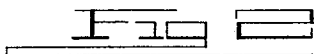
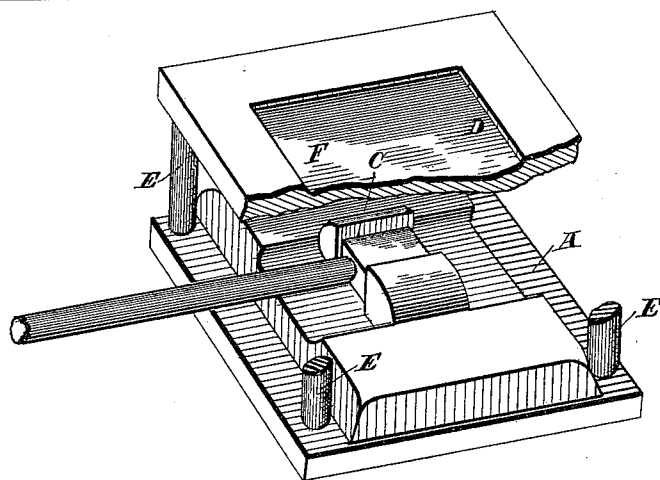
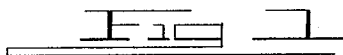


(No Model.)

A. T. DOYLE.
SLIDE VALVE.

No. 481,013.

Patented Aug. 16, 1892.



Witnesses

E. W. Seville

Wm. A. Schoonborn

Inventor

A. T. Doyle

By his Attorneys

Alexander & Howell

UNITED STATES PATENT OFFICE.

ALBERT T. DOYLE, OF PENDLETON, OREGON.

SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 481,013, dated August 16, 1892.

Application filed April 20, 1892. Serial No. 429,908. (No model.)

To all whom it may concern:

Be it known that I, ALBERT T. DOYLE, of Pendleton, in the county of Umatilla and State of Oregon, have invented certain new and useful Improvements in Slide-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to improvements in slide-valves for steam-engines; and it has for its objects to provide for holding the valve positively to its seat, while permitting it to reciprocate with as little friction as possible; and the invention consists in the combination, with the ordinary slide-valve, of a plate of substantially the same area as the valve, secured to the upper side of the valve by means of suitable standards, the whole constituting virtually a single valve, and a plate fitting within the upper part of the valve-chest and bearing against the upper face of the plate secured to and forming part of the valve so as to keep the same to its seat independently of the pressure of the steam within the valve-chest, as more fully hereinafter set forth.

In the accompanying drawings, forming part of this specification, and in which like reference-letters indicate similar parts in the respective views, Figure 1 represents a perspective view of the valve and the plate secured thereto detached from the valve-chest. Fig. 2 represents a vertical sectional view of the valve-chest, bearing-plate, and valve in position.

Referring to the drawings by letter, A indicates a slide-valve of the ordinary construction having the usual elongated port B on its lower face, which works over the ports in the valve-seat to alternately supply and exhaust the steam from each end of the cylinder. The upper face of the valve is provided with the usual recess C for the end of the valve-rod.

D indicates a metallic plate of substantially the same area as the valve. The said plate is secured to the upper face of the valve by means of standards E of such height as to elevate the plate nearly to the top of the valve-chest. These standards may be fastened to the valve and plate by screws or otherwise in such manner as to connect the

two rigidly and form virtually a single valve. The upper face of the plate is provided with a shallow recess F, so as to reduce the area of surface against which the bearing-plate G rests, thereby reducing friction between said plates G and D to a minimum.

The bearing-plate G is of such size as to fit closely within the upper part of the valve-chest and rests upon the top of plate D, the adjacent bearing-surfaces being truly planed, so as to permit the valve to work accurately and confine it closely to its seat.

The upper edge of the plate G is rabbeted, as indicated by the letter I, so as to set well down in the valve-chest when in place, and is provided with an upwardly-extending flange K, which, in connection with a downwardly-extending and surrounding flange L on the valve-chest cover M, serves to hold a packing of asbestos or other suitable material under the cover to prevent the passage of steam between the cover and the bearing-plate.

The plate G and the chest-cover are provided with coincident openings N P for the escape of any steam that may leak through between the plates D and G and obviate any undue pressure upon the plate G, which increases the friction of the valve.

The operation of my valve is similar to an ordinary slide-valve and will be apparent from the above description, from which it will also be seen that the invention may be applied to any engine in which there is sufficient room in the valve-chest for the plate D and its connections and the bearing-plate G, thus adapting the invention to engines already in use.

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

1. The combination, with the slide-valve of an engine, of a plate secured to the upper face of the valve by suitable standards and having a recessed upper face and a bearing-plate fitted within the valve-chest above the valve, the plate having an opening over the recess in the plate and adapted to hold the valve positively against its seat, substantially as specified.

2. The combination, with the slide-valve and the plate D, secured thereto by suitable

standards, of the rabbeted plate G, having an upwardly-extending flange, and the downwardly-extended flange on the chest-cover surrounding the flange on the bearing-plate
5 for the purpose of holding packing, substantially as and for the purpose described.

3. The combination, with the slide-valve, of the plate D, recessed on its upper face, and the bearing-plate provided with a central
10 opening, the chest-cover provided with a co-

incident opening, and the packing-flanges on the cover and bearing-plate, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two
15 witnesses.

ALBERT T. DOYLE.

Witnesses:

DANIEL JOHNSTON,
JOHN CAMPBELL.