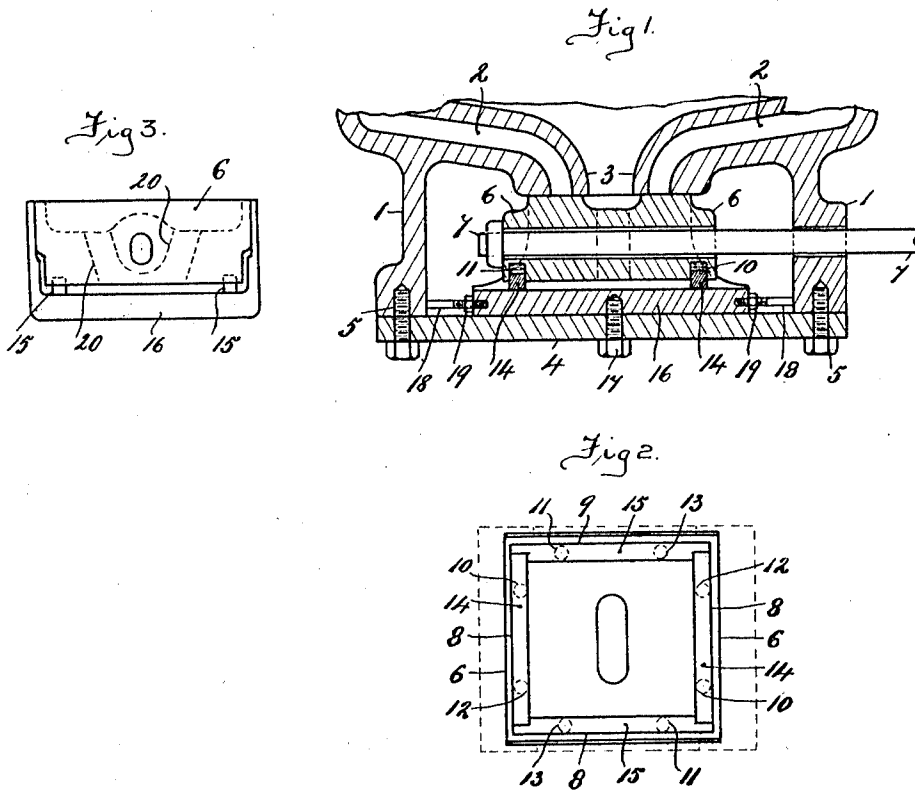


J. DOCKINGS.
BALANCED SLIDE VALVE.
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1,066,427.

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BALANCED SLIDE-VALVE.

1,066,427.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN DOCKINGS, a subject of the King of Great Britain, and a citizen of the Dominion of Canada, residing on Concession street, in the city of Hamilton, in the county of Wentworth, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Balanced Slide-Valves, of which the following is a specification.

This invention relates to balanced slide valves and it has more particular reference to steam engine slide valves of the type in which the pressure of the steam on the valve face is counterbalanced and the valve thereby caused to have a free and easy motion.

The object of my invention is to provide an improved slide valve of the foregoing type and it consists primarily in fitting parallel inter-connecting spring influenced packing strips into the back of the valve which are so arranged as to prevent steam getting between the said valve back and the steam chest cover.

A further feature consists in the combination with a slide valve constructed as stated of a hood or protector which effectively prevents live steam getting to the back of the valve.

The accompanying sheet of drawings is in illustration of one practical embodiment of my invention:—Figure 1, being a vertical transverse section of the improved slide valve and the parts connected therewith. Fig. 2, is a top or plan view of the back of the valve. Fig. 3, is a detail end view of the valve and hood.

Similar reference characters indicate corresponding parts in both figures.

According to the form of my invention illustrated, 1 indicates the valve-chest, 2, 2, the inlet ports, and 3, the exhaust port.

4, is the valve-chest cover which is bolted to the valve-chest by bolts 5, 5, in the well-known way.

6, is the slide valve to which the valve rod 7, is connected in any suitable manner that allows for the lifting of the valve at right angles to its axis. In the rear face or back of the slide valve 6, I form a rectangular recess consisting of parallel grooves 8, 8, and 9, 9, and said grooves are preferably arranged adjacent and at an equal distance from the outer edge of the valve. In these grooves 8, 8, 9, 9, and at equal distances from their ends I form recesses 10, 10, 11,

11, designed to house compression springs 12, 12, 13, 13, adapted to normally force outward or upward parallel packing strips 14, 14, 15, 15. These packing strips 14, 14, 15, 15, are preferably of a like thickness to the depth of, and fit snugly into, the grooves 8, 8, 9, 9, one parallel pair, for example 14, 14, are butted or rabbeted at their ends into cut out parts of the other pair 15, 15, in order to break joint with the corners of the grooves 8, 8, 9, 9. Any other form of joint may however be adopted to form a steam tight joint at the corners of the valve. Instead of the spiral springs 12, 12, 13, 13, shown I may use flat or leaf springs beneath the packing strips 14, 14, 15, 15, and in the case of large slide valves employ one or a plurality of concentric grooves and strips. Obviously the strength of the springs 12, 12, 13, 13, is such that the packing strips 14, 14, 15, 15, will be always kept forced to and against the valve chest cover 4.

16, is a substantially U-shaped hood held in place by one or more set screws 17.

18, 18, are adjusting screws fitted with lock-nuts 19, 19, and their function is to properly adjust the valve 6, longitudinally before said hood 16, is clamped in position by the set screws 17.

20, 20, are passages through the valve 6, which allow any live steam passing the strips 14, 14, to pass readily away to the exhaust 3.

From the foregoing description and accompanying drawings it will be readily seen that in use the packing strips 14, 14, 15, 15, will be kept forced outward against the inner face of the hood 16, and thereby effectively keep the steam from passing between the valve 6, and said cover or hood. This arrangement of parts will remove all steam pressure directly from the back of the valve 6, and leave only sufficient to keep said valve to its seat during compression. A further advantage accruing to my invention is, that should the valve face become worn and water in the cylinder cause undue pressure, said valve would lift from its seat, and when the undue pressure was relieved be automatically returned by the action of the springs 12, 12, 13, 13, and the steam pressure. A still further advantage resides in the fact that the valve being always automatically seated live steam is prevented from passing the valve and escaping to the exhaust cavity.

Obviously the size, proportions and arrangement of the various parts may be varied to suit different requirements and it is intended to include all such modifications within the present application wherein only one practical embodiment of the invention has been specifically shown and described.

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

1. In a device of the character described, the combination with a slide valve body, of a plurality of spring actuated packing strips seated in recesses in the outer face of said valve body and arranged in rectangular formation, the ends of some of said strips being rabbeted into other of said strips.

2. In a device of the character described,

the combination with a slide valve body, of a plurality of spring actuated packing strips seated in recesses in the outer face of said valve body and arranged in rectangular formation, the ends of some of said strips being rabbeted into other of said strips, the outer faces of all of said strips lying in the same plane, and a substantially U-shaped hood having a plane inner face disposed toward said strips and over which face said strips slide.

Signed at Hamilton, in the county of Wentworth, Province of Ontario, Canada, this 3rd day of February, A. D. 1913.

JOHN DOCKINGS.

In the presence of—

ALFRED T. BRATTON,
GERTIE NICHOLSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."