



# United States Patent Office.

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Letters Patent No. 100,477, dated March 1, 1870.

## IMPROVEMENT IN PISTON-PACKING.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, WILLIAM D. WHITMORE, of Bloomington, in the county of McLean, and State of Illinois, have invented a new and valuable Improvement in Steam-Packing; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a central vertical section of my device.

Figure 2 is a top view, and

Figure 3 is a bottom view of the same.

My invention relates to the method of packing the piston-heads of horizontal steam-cylinders, and consists mainly in the employment of a hard metal shoe upon the lower or bearing portion of the piston, and so arranging the same that when worn down it can, by the use of suitable wedges or shimmers, be set up so as to fit the cylinder properly.

The letter A of the drawing designates the piston-head provided with the ordinary outer flanches, *a a*.

B B represent the shoe, made in two sections, and arranged to break joints with the sectional packing-rings *c c*, placed between the flanches *a a* and the inner ribs *d d*.

D represents a block placed between the ends of the ribs *d d* at the uppermost point of the piston.

Flanches *e e* extend out on each side of the block from its lower part, and operate to support the ends of the sectional packing-rings *c c*.

A spring, *h*, is secured to the under part of the

block D. This spring presses the block and the sectional packing-rings outward, thus keeping the packing tight above.

Channels, *z z*, are formed in the cylinder of the piston between the flanches *a a*, and when the shoe B B is worn down, wedges *o o* are forced into these channels, thereby setting the shoe out and making all tight again.

Sometimes, instead of two sectional shoes, as shown in the drawing, and covering the lower half of the piston, I prefer to employ a single shoe, arranged to cover the lower third thereof. It will often happen that this will answer every purpose, as the shoe is worn down only for a certain distance on each side of its lowermost point.

Sometimes I prefer, instead of using wedges, to set up the shoe by means of thin curved plates or shimmers introduced between the cylinder of the piston-head and the shoe.

What I claim as my invention is—

1. The shoe B, wedge *o*, and channel *z*, when constructed and arranged to operate as and for the purposes specified.

2. The break-joint block D and spring *h*, when constructed, combined, and arranged as and for the purposes set forth.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

WM. D. WHITMORE.

Witnesses:

E. W. ANDERSON,  
D. D. KANE.