(No Model.)

J. W. WALTERS.

PISTON PACKING.

No. 367,873. Patented Aug. 9, 1887.

Fig. 1.

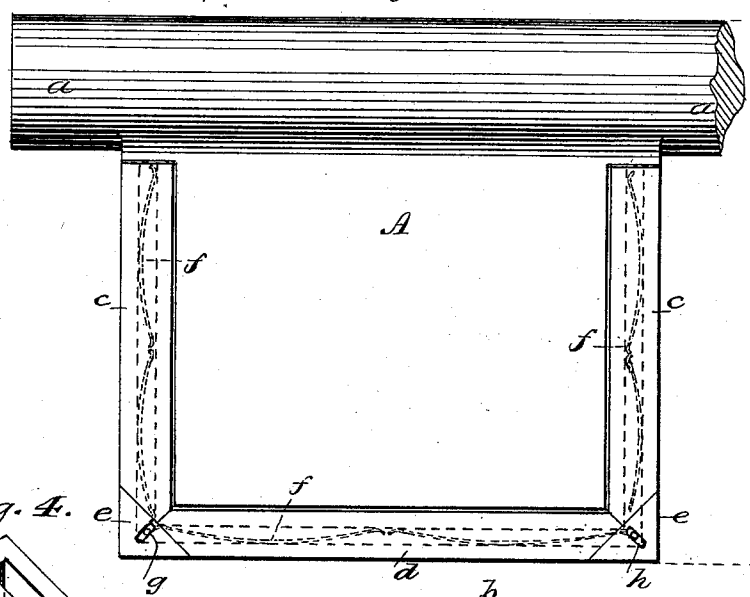


Fig. 2.

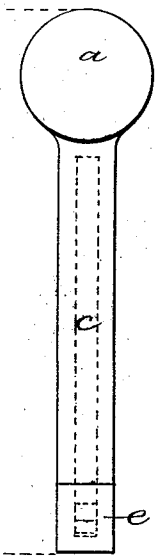
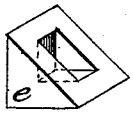


Fig. 4.



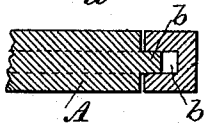


Fig. 3.

Fig. 6.

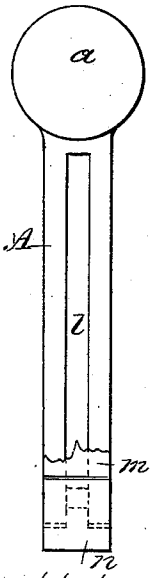


Fig. 7.

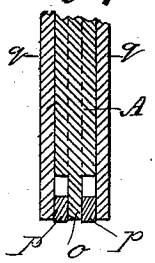
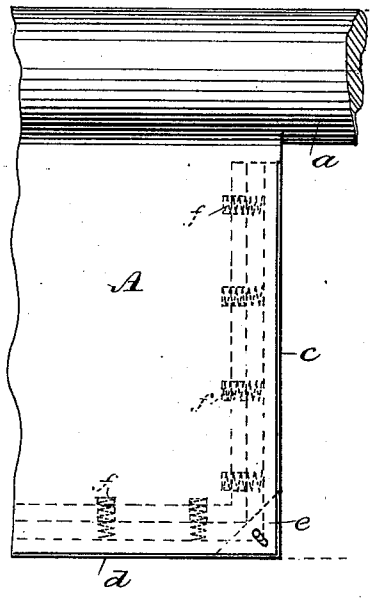


Fig. 5.



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UNITED STATES PATENT OFFICE.

JULIUS WM. WALTERS, OF NEW YORK, N. Y.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 367,873, dated August 9, 1887.

Application filed March 30, 1887. Serial No. 233,074. (No model.)

To all whom it may concern:

Be it known that I, JULIUS WM. WALTERS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Piston-Packing, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in piston-packing, and the object is to produce a reliable packing for square or rectangular pistons, more especially adapted to vibrating or pendulum engines, although also applicable to rotary or semi-rotary engines; also, to produce a packing for said engines which will effectually prevent leakage of steam, and at the same time will not retard the operation of the piston in the cylinder or steam-chamber by packing it too tight, which is often occasioned by the ordinary packing in use; also, to make the packing self-adjusting in all required directions, so as to compensate for the wear; furthermore, to facilitate the removal and replacement of the packing whenever necessary, and, finally, to produce a packing applicable to old as well as new engines.

The invention to this end consists in the peculiar construction of the details and the arrangement of parts of a piston for square or rectangular engines, as will be more fully described hereinafter, and specifically pointed out in the claims, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters indicate similar parts in the different figures of the drawings, in which—

Figure 1 is a side elevation of a piston for a vibrating or pendulum engine provided with my improved packing. Fig. 2 is an end view of the same. Fig. 3 is a detail section of part of the same. Fig. 4 is a detached view of one of the corner-pieces of the packing. Fig. 5 is a side elevation. Fig. 6 is an end view, partly in section. Fig. 7 is a detail view in section of a modification.

In the drawings, A represents the main body of a piston for a vibrating or pendulum engine having the usual trunnions, *a*, upon which it vibrates. The peripheral faces or edges of the body of the piston are provided with a tongue, *b*, over which the loose inclosing packing-pieces *c*, *d*, and *e* fit, and all of ⌊⌋ or channel shape in cross-section. The corner-pieces *e* are angular, and their edges are oblique and fit against the oblique edges of the side pieces, *c*, and face-pieces *d*. They are preferably forced out against the inner surface of the segmental cylinder or steam-chamber by means of elliptical or coil springs *f*, or their equivalents, placed in the groove *b'*, formed in the packing-pieces, although they may be set out by steam or its equivalent. The corner-pieces *e* are held in position on the piston by means of pins *g*, which fit into slots *h* in said corner-pieces to allow them to move freely in and out in an oblique manner, so as to pack the corners of the cylinder or steam-chamber.

In the modification shown in Fig. 5 the packing-pieces are set out by coil springs *f*.

The packing-pieces are constructed in a similar manner as shown at Fig. 1, and suitable filling-pieces applied at the joints to prevent leakage.

In the modification shown in Fig. 7 the piston-body is provided with a tongue, *o*, and into the recesses on each side thereof the plain packing-pieces *p* are fitted, being held in place by the followers *q*, and suitable springs are placed behind said packing-pieces to force them out against the inner surface of the cylinder or steam-chamber, or steam may be admitted to them.

In employing the springs behind the packing-pieces one or more springs may be used on the sides or faces, and they may be made to extend only part of the entire width, or the entire width, as desired.

I am aware of the Patent No. 316,606 to Crist, and disclaim the construction therein shown, as the packing-pieces are of a single plain thickness and do not prevent leakage of steam, especially after they are slightly worn.

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

1. The piston-packing herein described, consisting of the body of the piston having a

tongue, in combination with the inclosing packing-pieces *c d* and the inclosing corner-pieces *e*, and the springs *f*, all constructed and arranged substantially as specified.

2. The piston-packing described, consisting of the body of the piston having a tongue, in combination with the inclosing packing-pieces *c d* and the inclosing corner-pieces *e*, provided with slots *g* and pins *h*, and set out by the springs *f*, substantially as shown and set forth.

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

JULIUS WM. WALTERS.

Witnesses:

JOHN S. ROAKE,

JNO. M. WILSON.