L. TURNER.
PISTON PACKING.

No. 108,653. Patented Oct. 25, 1870.

Fig: 2.

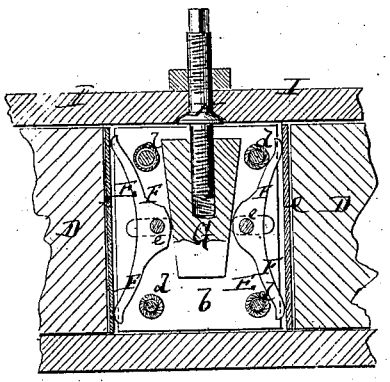


Fig: 3.

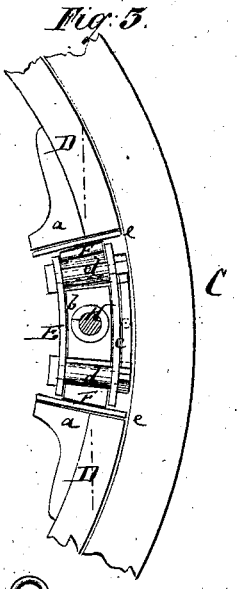


Fig: 4

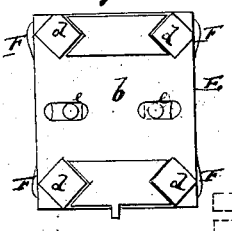


Fig: 1.

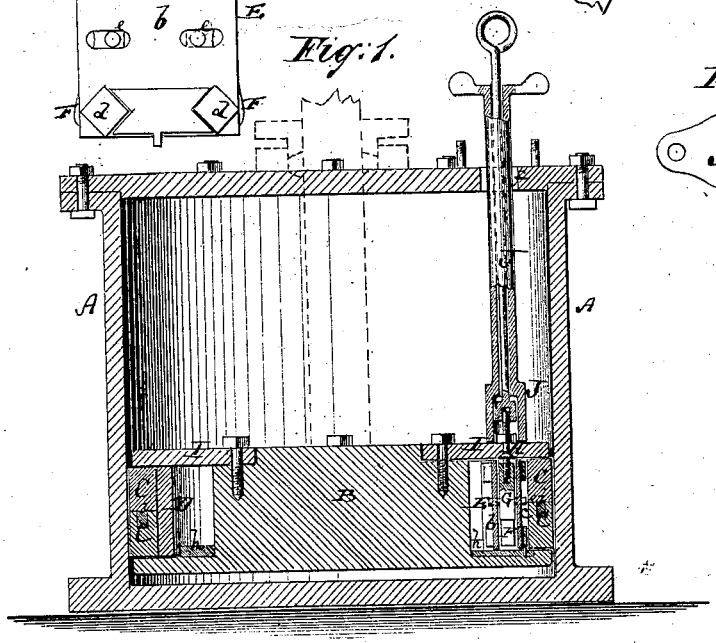
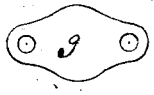


Fig: 5



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United States Patent Office.

LAWRENCE TURNER, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 108,653, dated October 25, 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, LAWRENCE TURNER, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and improved Piston-Packing; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical section of a steam-cylinder provided with my improved piston.

Figure 2 is a detail vertical section, on an enlarged scale, of the expansion-lock arranged in the piston.

Figure 3 is a detail horizontal section of the same.

Figure 4 is a detail side view of the same.

Figure 5 is a top view of the hand-hole cover in the cylinder top.

Similar letters of reference indicate corresponding parts.

This invention relates to a new packing for the pistons of steam-cylinders, and has for its object to facilitate the adjustment of the rings, and prevent the straining of parts by the greater or lesser inclination of the machinery.

The invention is chiefly applicable to marine engines, in which the rolling of the ships frequently produces a straining of the machinery, and leakage in the piston.

The invention consists chiefly in the use of an adjustable expansion-lock, which is applied to the piston between the ends of an expansion spring, and which can be worked to spread or contract said spring, and to thereby increase or reduce the diameter of the piston, whose outer sides are formed by split rings.

A in the drawing represents the steam-cylinder, of suitable construction.

B is the core or hub of the piston.

C C are the split outer rings, which constitute the outer periphery of the piston.

Within them is placed the expanding spring D, which is bent to fit against their inner faces.

The ends of the spring D do not meet, as shown in fig. 3, but carry inwardly-projecting brackets, *a a*.

Between the ends of the spring D is interposed my improved expansion lock, E.

The same consists of two plates, *b* and *c*, which are held apart and connected by means of bolts *d d*.

Between the plates *b c* are two pivoted or swinging springs, F F, which hang on pins *e*, that pass through horizontal slots of the plates *b c*, as shown in fig. 2.

The ends of the springs F F rest against the ends of the spring D.

G is a wedge-shaped block, suspended from a screw or screw-bolt, H, which is swiveled in the upper plate I of the piston.

The wedge G, when forced down, will enter between the springs F, and, forcing them apart against the ends of the spring D, which is thereby expanded to spread the rings C.

Chafing-plates, *e e*, are or may be interposed between the ends of the springs F and D, to prevent excessive friction during the adjustment of the springs.

The wedge is adjusted up or down by turning the the bolt H, which can be done by means of a wrench, J.

For the introduction of this wrench a hand-hole, *f*, is provided in the upper head of the cylinder.

This hand-hole is closed by a plate, *g*, when the wrench is not required.

A shoulder, *h*, is formed on the hub B, of soft or other metal, for holding the spring ring D in contact with the outer rings C.

Excessive friction on the contiguous edges of the rings C is prevented by the insertion of a soft-metal ring, *i*, within the grooved edge of one of said rings, as shown in fig. 1.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The adjustable springs F, held in slotted plates *b c*, and combined with the spring D and adjustable wedge G, substantially as herein shown and described.

2. The chafing-plates *e e*, interposed between the adjusting-springs F F and the expanding spring D, substantially as herein shown and described.

3. The vertically-adjustable wedge G, suspended from the screw-bolt H, for the purpose of expanding the rings of the piston, substantially as herein shown and described.

L. TURNER.

Witnesses:

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