(No Model.)

W. W. ST. JOHN.

PISTON PACKING.

No. 325,022. Patented Aug. 25, 1885.

Fig. 1.

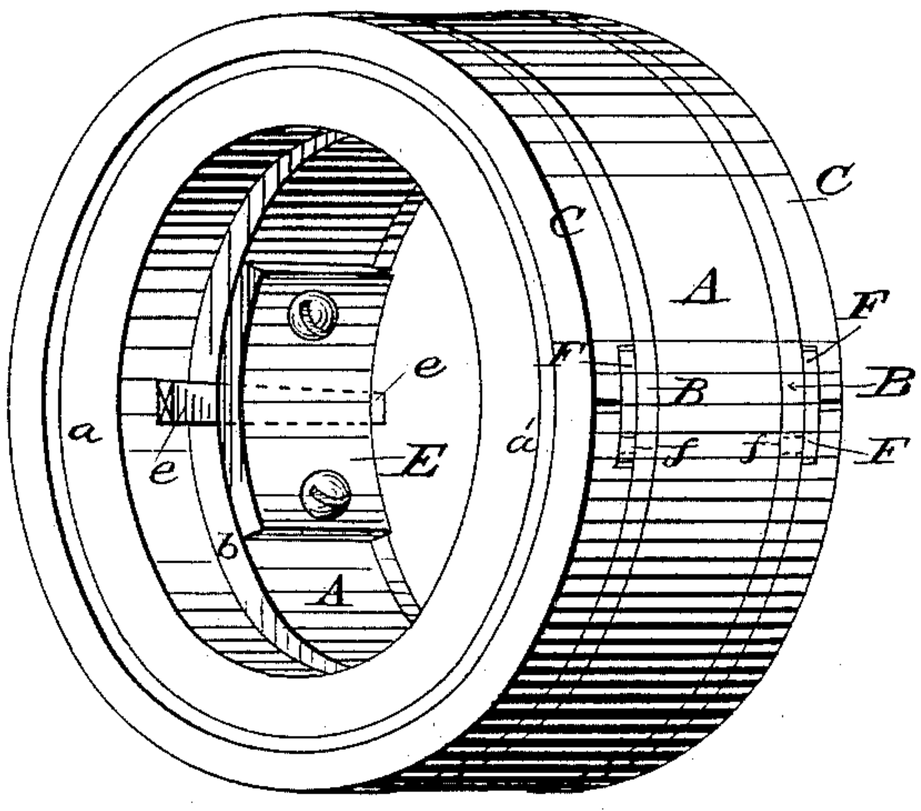


Fig. 2.

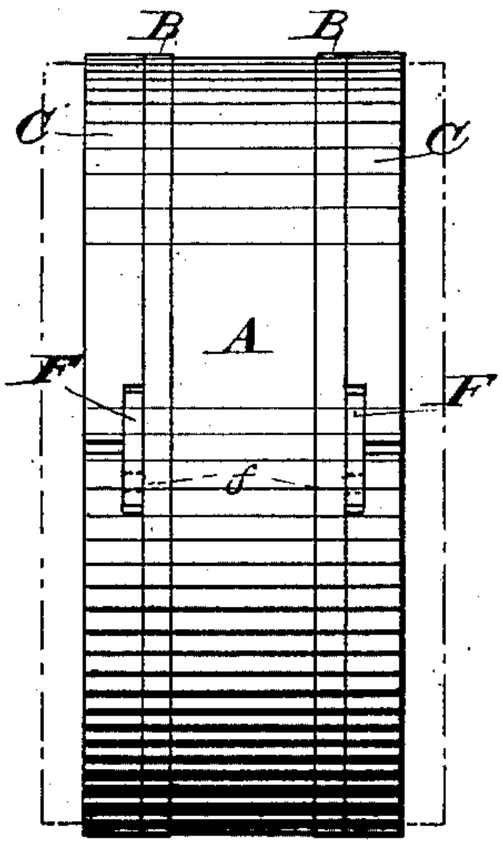


Fig. 3.

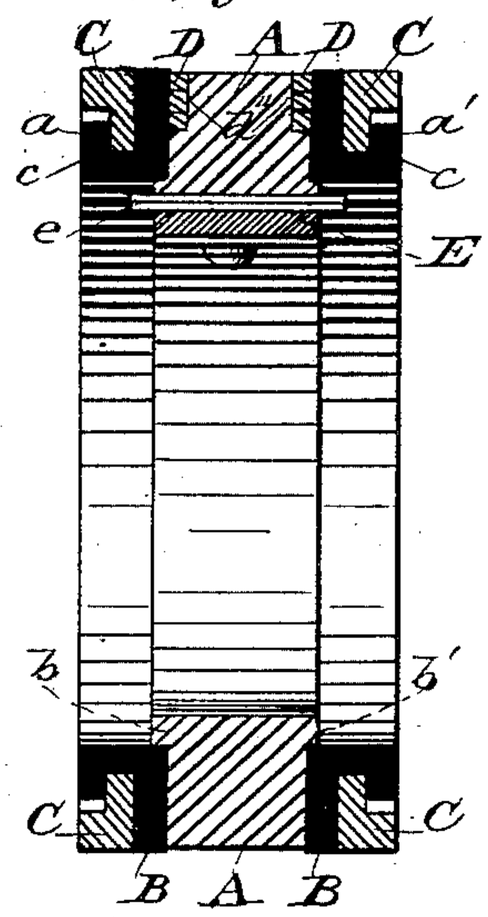


Fig. 4.

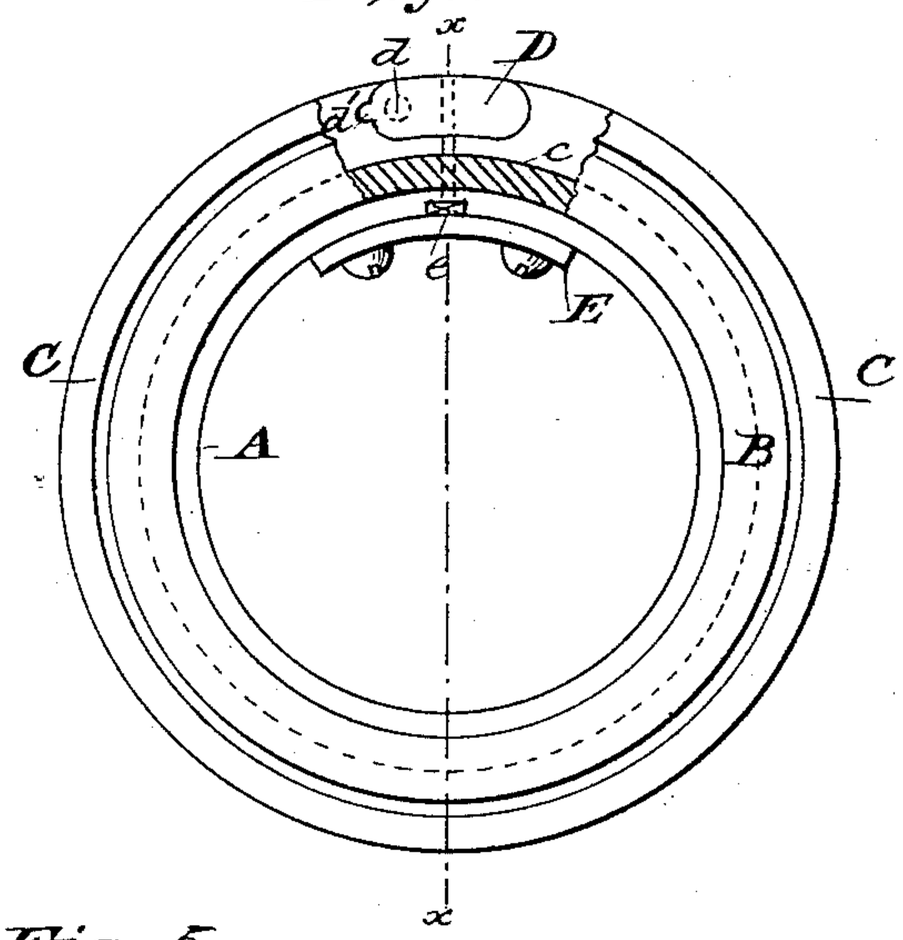
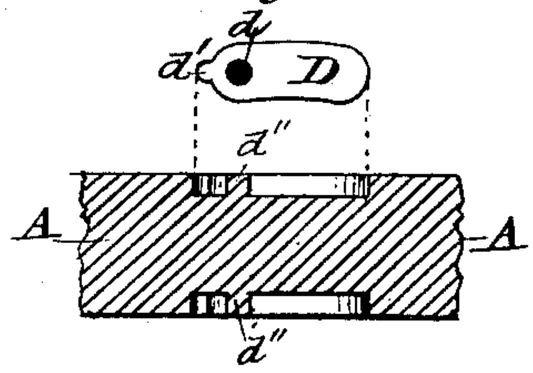


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM W. ST. JOHN, OF NEW YORK, N. Y.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 325,022, dated August 25, 1885.

Application filed October 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. ST. JOHN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Piston-Packing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in pistons for steam-engines, also applicable for other purposes; and the object is to produce a piston that will form a perfect packing against the cylinder, and at the same time will prevent the binding or sticking often occurring in engines caused by expanding the packing-rings or setting them out too hard against the inner surface of the cylinder; also, to set out the packing automatically; further, to prevent any leakage of steam, to facilitate the manufacture by its simplicity, to increase its durability, and to reduce the cost.

The invention consists in the construction of parts and arrangement of parts, as will be more fully described hereinafter, and more specifically pointed out in the claims, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters refer to similar parts in the different figures of the drawings, in which Figure 1 represents a perspective view of my improved piston-packing. Fig. 2 is an edge view of the same. Fig. 3 is a cross-section on line *x x* of Fig. 4. Fig. 4 is a side view of the same, with a part of the packing-rings broken away. Fig. 5 is a detail view of the filling-piece.

In the accompanying drawings, A represents the piston head or center, which is turned down on each side, so as to form the projections *b b'*, which serve to support the *L*-shaped packing-rings B. These rings are made solid, and are provided with flanges *a a'*, which form recesses *c c*, serving to support and retain the packing-rings C in their proper position.

The head A is cut at one side, and the joint is closed on the opposite faces of said head by a filling-piece, D, having a hole, *d*, which fits over a suitable teat, *d''*, on the sides of the head A, to secure the filling-piece in place. It fits into a recess in the side of the head and extends half of its length on each side of the joint.

On the inner side of the head A is secured a segmental piece, E, by screws or in other suitable manner, which serves to hold a key or wedge, *e*, having its seat in a suitable recess in the head, by which key said head can be adjusted to the bore of the cylinder as desired. A lug, *d'*, prevents lateral movement of the filling-piece.

The packing-rings C are also cut at one side, and have sufficient elasticity to be applied over the flanges *a a'* to the rings B, upon which they have their seats.

A filling-piece, F, having teats *f*, similar to the filling-piece D and arranged in the same manner, is placed over the joint of the packing-rings C, and thus prevents any escape of steam at that joint. The followers (shown in dotted lines in Fig. 2) are then applied on each side of the packing-rings, and are secured by the piston-rod or by separate bolts provided for that purpose. The projections *b b'* may be dispensed with, if desired.

It will be readily seen by those skilled in the art that this forms a self-adjusting and steam-tight packing for cylinders, as the steam acts under the edges of the rings C and forces them outward as well as sidewise against the rings B in whatever direction the piston is traveling.

The piston-head can be adjusted to the bore of the cylinder as desired. The recesses are milled into the head or rings by a proper milling-tool.

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

1. In piston-packing, the split head made expansible by means of a wedge arranged as shown, and provided with a filling-piece, D, over its joint, substantially as and for the purpose set forth.

2. In piston-packing, the split head A, having filling-pieces D and means for expanding it, with the solid rings B, forming seats for the split rings C, provided with filling-pieces F, all substantially as and for the purpose specified.

3. The piston-packing herein described, consisting of a split head, A, having filling-piece

D, and made expansible by means of a wedge, in combination with solid rings B, having flanges *a a'*, and recesses *c c*, forming seats for the split rings C, provided with filling-pieces F, all constructed and arranged substantially as shown and specified.

4. A split packing-ring provided with a recess having a teat to receive the filling-piece, in the manner shown, and for the purpose specified.

5. A split head for pistons, having recesses in its sides, provided with suitable teats to receive the filling-pieces for closing the joint, substantially as shown, and for the purpose set forth.

6. A filling-piece for piston-packing, provided with a lug, *d'*, and a hole, *d*, to fit into a recess in the ring, having a teat, *d''*, to receive said filling-piece, substantially as shown and specified.

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

WILLIAM W. ST. JOHN.

Witnesses:

G. L. DE MOTTE,

F. O. MCCLEARY.