E. W. LIPPINCOTT.

Packings for Pistons of Air-Brakes.

No. 153,678. Patented Aug. 4, 1874.

Fig. 3.

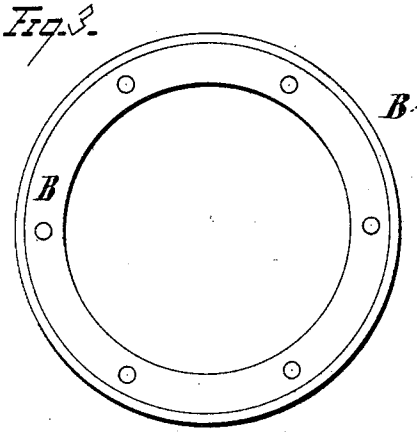


Fig. 4.

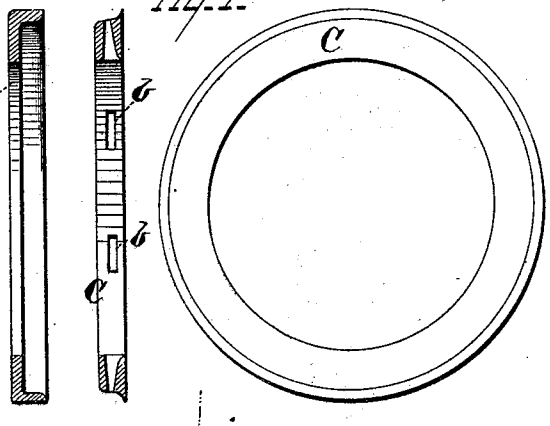


Fig. 1.

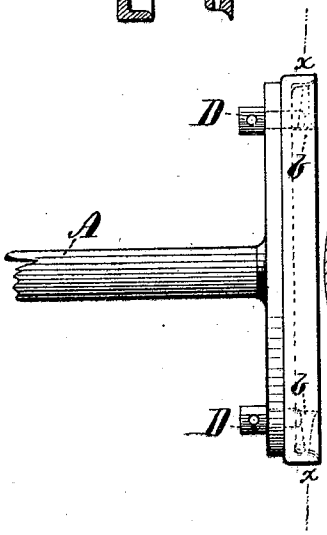


Fig. 2.

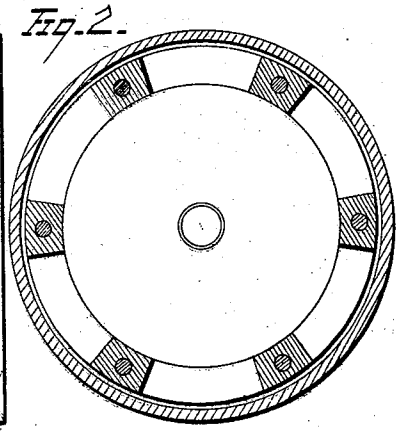
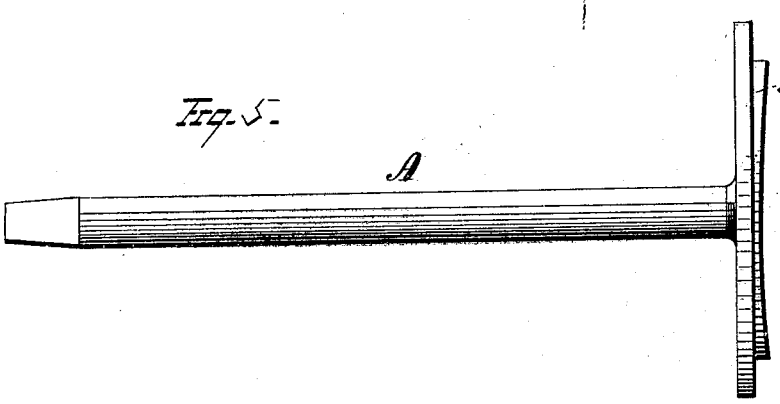


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

EBENEZER W. LIPPINCOTT, OF GRAFTON, WEST VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO CHARLES W. WHITE, OF SAME PLACE.

IMPROVEMENT IN PACKING FOR PISTONS OF AIR-BRAKES.

Specification forming part of Letters Patent No. **153,678**, dated August 4, 1874; application filed June 3, 1874.

To all whom it may concern:

Be it known that I, EBENEZER W. LIPPINCOTT, of Grafton, in the county of Taylor and State of West Virginia, have invented certain new and useful Improvements in Packing for Pistons of Air-Brakes; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in air-brakes, and more particularly to the packing of the piston employed therein.

In the drawings, Figure 1 is a view in side elevation of the piston, showing by dotted lines the application of my improvement. Fig. 2 is a sectional view on line *x x* of Fig. 1. Fig. 3 is a view in plan and section of the packing-ring. Fig. 4 is a view in plan and section of the follower. Fig. 5 is a side elevation of the piston with my improvement and its attachments removed.

The invention consists in the combination of devices and appliances, as hereinafter specified and claimed.

A is a piston, formed with a central projecting portion, A′, the latter employed simply to hold the packing-ring and follower in place, and supporting the same. B is a cup-shaped annular ring, formed of any suitable material. C is a metallic follower, of somewhat less diameter than the interior of the packing-ring B, and is annular ring shaped. It is provided, around its periphery, with openings *b*, through which the air can pass against the inner surface of the packing-ring.

The packing-ring B is slipped upon the end of the piston A over the projecting portion A′. The follower C is then put on in like manner, and the two are firmly secured to each other and to the piston-head by binding-screws D, at which time they will present the appearance indicated in the side view of Fig. 1.

It will be observed that the follower is of such shape and size that it incloses an annular space between its outer surface and the inner surface of the packing-ring, the object being to distribute uniformly over the whole packing-ring the pressure of air through the air-ports *b* of the follower.

The operation of this invention is as follows, and differs from others as set forth.

Heretofore various devices have been employed to press the packing against the surface of the cylinder when in action, as springs, steam, &c.; but they maintain a steady pressure while in use, and are only relieved when absolutely idle, if at all; but in air-brakes a complete cessation of the action is desirable as soon as the brake is removed, because if the piston is prevented in its free movement after it has been relieved from press it will drag in the cylinders, and cause the brakes to hug and grate upon the wheels.

The air, acting upon the piston-head here shown and described, transmits its pressure at once through the ports *b*, and expands the packing-ring B against the bore of the cylinder; but the instant the air is released all pressure of the ring B upon the piston is likewise relieved, and the movement of the piston is perfectly free.

What I claim is—

The air-brake piston-packing composed of packing B and follower C, the latter provided with suitable ports *b*, for distributing the pressure uniformly against the inner surface of the packing, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of June, 1874.

EBENEZER W. LIPPINCOTT.

Witnesses:
WELLS W. LEGGETT,
WM. H. MINNIX.