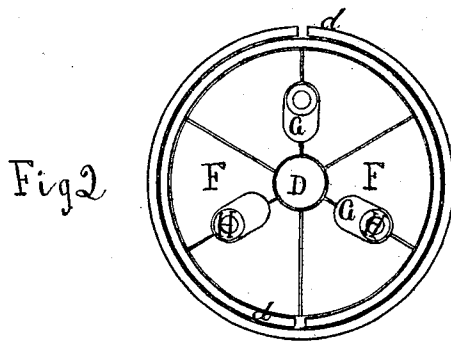
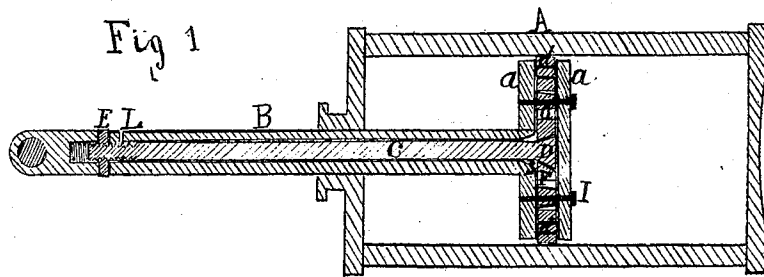


F. M. Cornell,

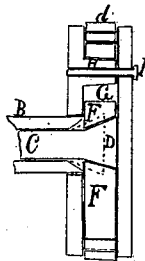
Piston Packing.

No. 107,274.

Patented Sept. 13. 1870.



Witnesses:
John M. Durman
Henry Michael



Inventor
Franklin M. Cornell

Enlarged view of Piston Head in Figure 1

United States Patent Office.

FRANKLIN McCONNELL, OF DOWAGIAC, MICHIGAN.

Letters Patent No. 107,274, dated September 13, 1870.

IMPROVEMENT IN PISTON-PACKING.

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

I, FRANKLIN McCONNELL, of Dowagiac, in the county of Cass and State of Michigan, have invented certain Improvements in Piston-Packing, of which the following is a specification.

The first part of my invention relates to the manner of constructing and adjusting piston-packings, and is designed to be used principally in steam-engine pistons, but may be used in other pistons, the object being to enable the attendant or engineer to tighten or adjust the packing-rings or other packings with great accuracy, avoiding the necessity of opening the piston-head or the cylinder in which it works.

The second part of my invention relates to the combination, with my device for an adjustable piston-packing, of a device for answering the two-fold purpose of indicating the leak of the piston-head, and of affording means by which the piston-head and interior of the cylinder may be lubricated.

In the accompanying drawing—

Figure 1 is a vertical longitudinal section through the diameter of a machine embodying my invention.

Figure 2 is an enlarged end view of the piston-head, with the outer plate of the head removed, showing the arrangement of the packing and adjusting devices.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is a cylinder, which may be constructed in the usual form.

B is the piston-rod. This rod is made hollow and firmly attached to the inner plate of the piston-head.

G is a rod fitting loosely in the hollow piston-rod, and extending its entire length, having the cone-shaped head at one end, as seen at D, and is provided at the other end with the screw-nut E. This nut works in a slot in the cross-head at the end of the hollow piston-rod. The manner of attaching the piston-rod to the cross-head is not fully shown, as any good machinist will readily see how it may be done.

The cone D on the rod G projects into the space between the plates *a a*. These plates form the body of the piston-head, and are made very much in the usual form, and provided with two or more open wings, *d d*. These wings are fitted one within the other, with their open sides opposite, and are nicely fitted between the plates *a a* in the usual manner.

F F are segmental braces, any number of which may be used that are required for the various sizes of pistons. These braces are fitted at their toes to the cone D, and at their outer extremities to the inner side of the inner packing-ring, and have elongated openings through or between them, as seen at G, to receive the studs H, by which the plates *a a* are attached to each other through the agency of the bolts I.

A countersink is made in the end of the hollow piston-rod, which allows the cone D to be drawn partially into the hollow piston. Now it will be seen that the line between the toes of the segmental braces and cone D, forms an inclined plain to the axis of the piston, and, as the nut E is turned onto the rod C, the cone D will be drawn inward, forcing the braces F up said inclined plane, and out against the rings *d d*, thus enlarging the rings equally in all directions from the center of the cone D, and affording an accurate and easy method of adjusting the piston-packing, when necessary.

It will also be seen that if the packing-rings become loose, steam will pass between them to the hollow piston-rod, and out through the opening at L, thus indicating to the attendant that the packing requires to be tightened.

At the opening at L, oil may be introduced through the hollow piston to the interior of the piston-head, and by backing up the nut E, the rings *d d* will become loose and allow oil to pass to the inner surface of the cylinder A.

Claims.

I claim as my invention—

1. The hollow piston-rod B, having the rod C, with cone-shaped head D, and nut E, in combination with the braces F, plates *a a*, studs H, bolts I and rings *d d*, as and for the purposes set forth.

2. The combination of the first-claimed parts with the opening L, substantially as and for the purposes hereinbefore set forth.

FRANKLIN McCONNELL.

Witnesses:

L. N. TURNER,
HENRY MICHAEL.