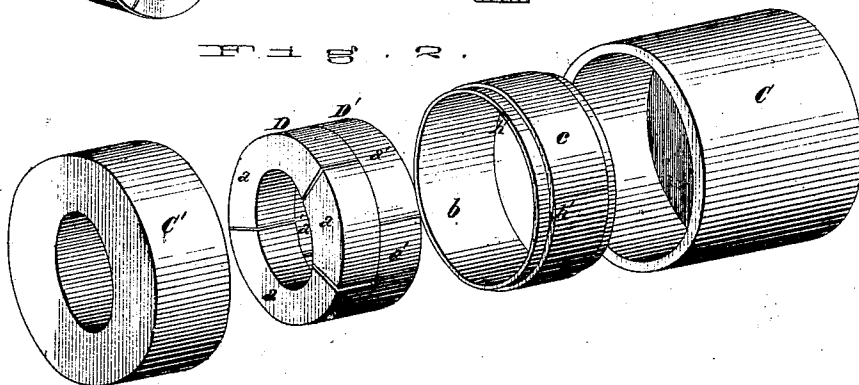
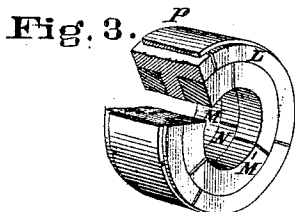
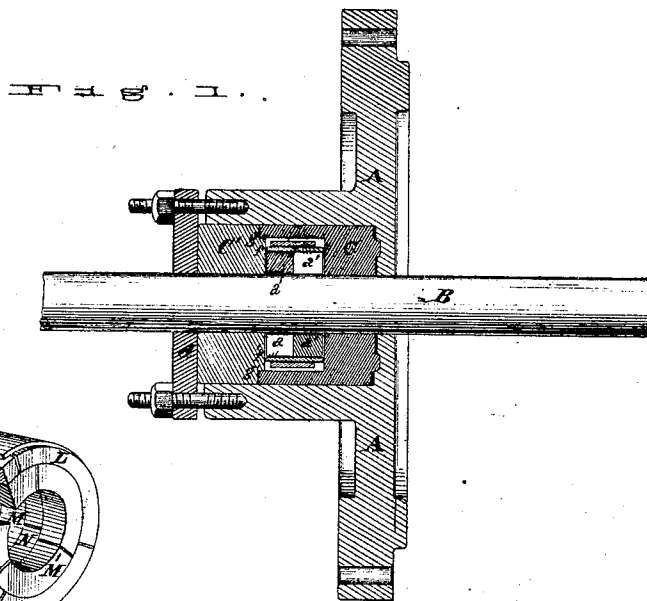


P. & J. Eckford,

Piston Packing.

No. 101,840.

Patented Apr. 12. 1870.



Attest.
James Moore
Wm. Olm

Inventor,
Peter Eckford
James Eckford

United States Patent Office.

PETER ECKFORD AND JAMES ECKFORD, OF CINCINNATI, OHIO.

Letters Patent No. 101,840, dated April 12, 1870.

IMPROVEMENT IN PISTON-ROD 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 we, PETER ECKFORD and JAMES ECKFORD, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful improved Metallic Packing; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making part of this specification, in which—

Figure 1 is an axial section of a cylinder-head packing-case and stuffing-box, showing our improved packing.

Figure 2 is a perspective view of the different parts of the packing, together with the case for holding it.

Figure 3 is a perspective view of a modification of our invention hereafter described.

- A A, fig. 1, is the cylinder-head.
- B, piston-rod.
- C C', the packing-case.
- a a a' are metallic segmental packing.
- D D' are rings, formed respectively of segments a a a' and a' a' a'.
- b, an annular brass spring;
- c, an annular steel spring; and
- d, an ordinary gland.

The segments a a a' and a' a' a' are all constructed of the same form and size, and when in place, forming two rings around the piston-rod, constructed to fit closely together, and so arranged with respect to each other as that the segments forming the respective rings will not be, in a right line, but overlapping or breaking joints, as shown in fig. 2. The object of this overlapping or breaking of the joints is the prevention of the escape of steam.

The annular brass spring band b is placed around the rings D D', and is made of a width greater than the two rings, D D', so that the edges of this band, when in place, project somewhat as shown at f f'; fig. 1, and is of a width equal to the space between the inner faces of the two parts of the packing case C C', when in position. Around this brass band is placed the annular steel spring band c, which is made of less width than the band d, and the spring of which is so set as to press the segments of the rings D D' firmly to the piston-rod, as shown in fig. 1, and as the inner surfaces of these segments are worn away by the friction of the piston-rod, this spring still keeps them firmly pressed to the piston-rod, and thus prevents the wear on the segments from opening a passage for the steam.

We construct C' with an annular recess, into which C fits, as shown at g g', fig. 1. These parts are ground so as to form a steam-tight joint.

C, fig. 1, is constructed with an annular projection, fitting into a countersink in the cylinder-head, as shown in fig. 1, and ground so as to form a steam-tight joint.

The gland d, in addition to its usual function, holds the different parts of the packing-case firmly in their places in the stuffing-box.

The modification of our invention shown in fig. 3, and which we regard as the better mode of carrying it out, is composed of a segmental ring, L, a piece of which appears to be cut away for the better exhibition of its interior, which has an interior permanent projection, N, on its center, extending around it, and two series of movable segments, M and M', at either side, respectively, of the permanent projection; the segments M, N, and M' being of course of the same depth and breaking joints as shown.

The advantage of this arrangement of the segments consists in the fact that there is less liability for the escape of steam. Over this, and for the purpose of compressing the segments to the piston-rod, but one annular spring, P, is shown, which is made of steel; the edges of the ring L answering the purpose that the edges of the ring b answer in the arrangement first described.

The segmental rings above described are made of brass, and each ring composed of three segments.

It is clear, however, that two or more segments may be used in each ring, and that other metals may be used instead of brass, but the number of segments shown and described, together with the kind of metal described, we consider preferable. And although our invention has been described with reference to the stuffing-box of a cylinder-head, yet there are other uses to which it may be applied, which will suggest themselves to any mechanic.

Having thus described our invention, we do not claim segmental packing simply, nor do we claim segmental packing where the same is kept in position around the piston-rod or other spindle by the action of steam; but

What we claim as new, and desire to secure by Letters Patent, is—

1. In combination, the segmental rings D and D', inclosing-ring of soft metal, and spring c, when said spring is used to bind the segmental rings to the spindle, without the action of the steam, substantially as shown and described.

2. The packing-case, composed of the parts C and C', fitted between the cylinder-head and gland, in the manner shown, in combination with the segmental packing and inclosing-rings, when the same is constructed as shown, to prevent the ingress of steam to the stuffing-box.

PETER ECKFORD.
JAMES ECKFORD.

Witnesses:

JAMES MOORE,
M. W. OLIVER.