

GEORGE H. REYNOLDS.

Improvement in Pistons and Piston-Packings.

No. 114,969.

Patented May 16, 1871.

Fig. 1.

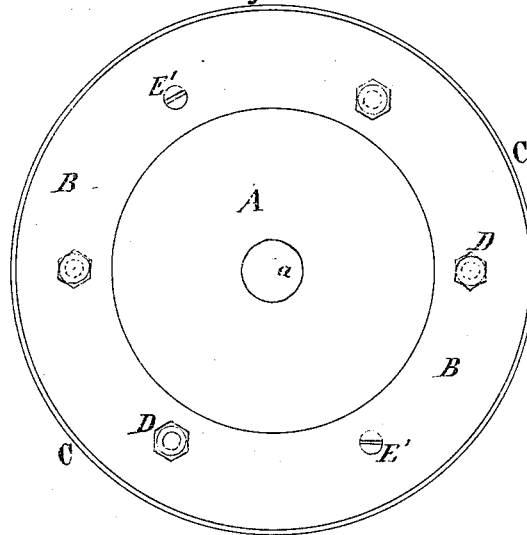


Fig. 4.

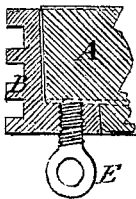


Fig. 2.



Fig. 5.

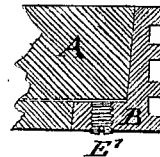
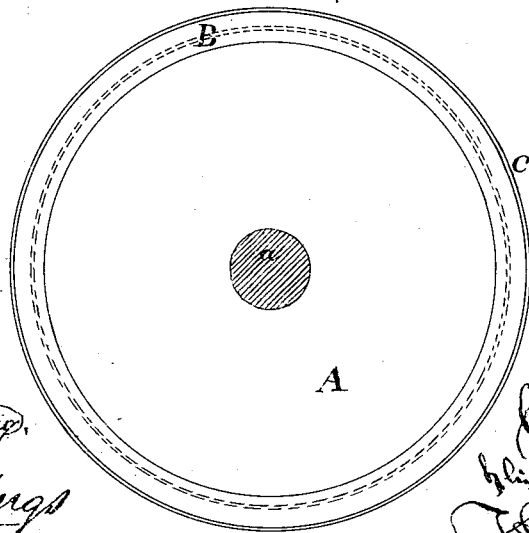


Fig. 3.



Witnesses:

C. H. Patten,
C. C. Livings

Inventor:

Geo. H. Reynolds
by his attorney
J. H. Weston.

United States Patent Office.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, CORNELIUS H. DELAMATER, AND ALEXANDER K. RIDER, OF SAME PLACE.

Letters Patent No. 114,969, dated May 16, 1871.

IMPROVEMENT IN PISTONS AND PISTON-PACKINGS.

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, GEORGE H. REYNOLDS, of New York city, in the State of New York, have invented certain new and useful Improvements in Pistons.

My invention provides a removable jacket or peripheral ring with capacity for being conveniently fitted and removed, and, when it becomes necessary to inspect or clean the periphery of the piston, this jacket is loosened and removed, leaving the main body of the piston and piston-rod firmly connected to the other strong parts of the engine.

The removable jacket carrying the packing is then attended to with all the care which is necessary, and, after having the packing properly cleaned or renewed, is easily restored and again made steam-tight.

My invention is not necessarily confined to a combination with the Ramsbottom packing. It may be used with any ordinary or suitable packing, or in case, as has been tried for some purposes, where a piston is used without packing, depending for tightness on a close fit of the piston and cylinder, aided, perhaps, by a series of grooves or recesses in one or both the surfaces.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawing forms a part of this specification.

Figure 1 is a view of one face of the piston;

Figure 2 is an elevation, partly in section, the section being taken in the plane of the piston-rod; and

Figure 3 is a view of the other face of the piston.

Similar letters of reference indicate like parts in all the figures.

A is the main body of the piston, and

a is the piston-rod.

B is my removable jacket, formed of a depth corresponding to the depth or thickness of the piston, and having a broad flange, which fits in a corresponding recess on the piston-face.

The adjacent surfaces of the piston-body and of the jacket are formed a little conical, and may be ground together with emery, so as to be cheaply and easily formed with a perfectly steam-tight fit.

C C, &c., are Ramsbottom packing-rings.

The jacket B is held to the body A of the piston by bolts D. I have represented four, but the construction allows room for as many more as may be ever required.

It will be readily seen that as the area of my jacket presented to the steam is very slight relatively to the whole area of the piston, and as the surface for the

bolts is ample for a very great number, there can be no want of security in the fastening.

For drawing the parts tightly together the bolts D are amply sufficient; for readily separating them I provide two or more holes in the flange of the jacket, which are tapped through the flange, and which have no corresponding holes in the body of the piston.

The purpose is to allow the introduction of stout eye-bolts, E, which, on being powerfully screwed in, in the effort to pass beyond the flange, press against the solid body of the piston, and gradually and powerfully lift the ring and break its connection with the piston.

After the adhesion has thus been overcome the eye-bolts E may serve as handles or eyes by which to seize the ring either by hand or by any suitable chain or fastening.

When the piston is in use the holes are filled by screw-plugs or dummies, E', as will be readily understood.

Figure 4 represents one of the eye-bolts, and

Figure 5 one of the dummy-plugs.

My entire removable jacket need not weigh more than one hundred pounds for a large steamer. The improved piston need weigh but little if any more than the ordinary piston, and the cost of construction is not sufficiently increased to be of any importance.

To remove and clean the surface or renew the packing of the ordinary piston with Ramsbottom or any analogous packing requires either a disconnection of the piston from the piston-rod or a breaking of the connection between the piston-rod or cross-head.

The making and unmaking of either of these powerful connections involves much labor, and frequent meddling with them involves the chance of their insecurity in service. Furthermore and obviously the removal of the entire piston, with or without the piston-rod attached, involves an amount of heavy work which is entirely avoided by this invention.

I claim as my invention—

The piston-body A and removable jacket B, adapted to each other as represented, so as to allow of the convenient introduction and removal of the entire periphery of the piston with the packing thereon, as herein specified.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

GEO. H. REYNOLDS.

Witnesses:

THOMAS D. STETSON,
C. C. LIVING.