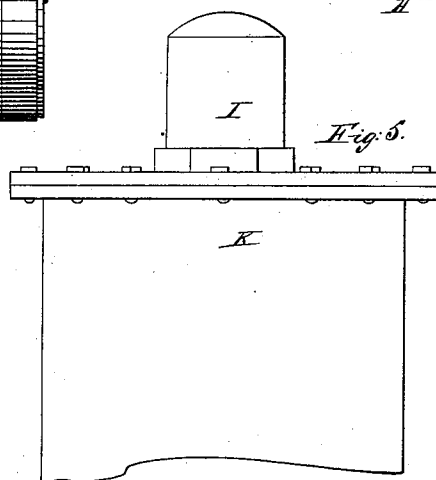
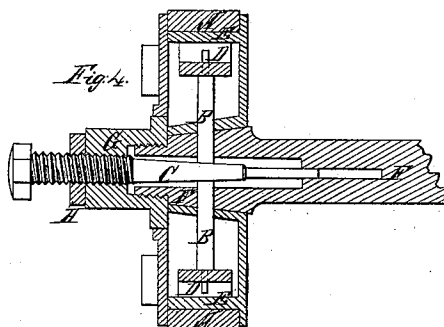
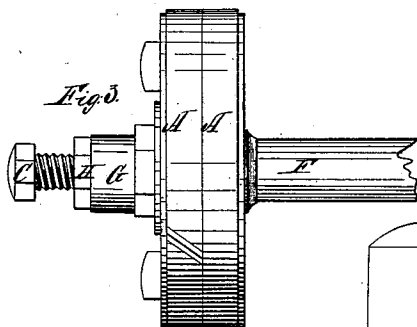
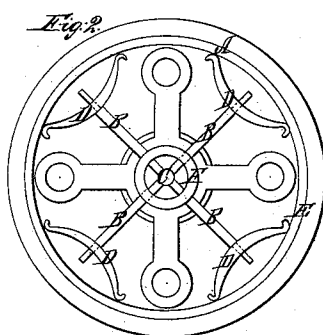
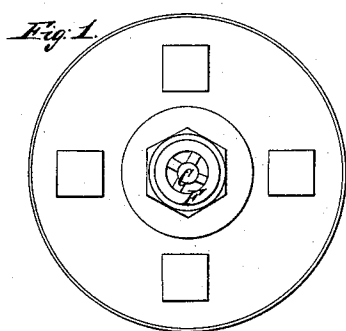


G. H. Hoagland;
Steam-Engine Piston.

N^o 17,788.

Patented July 14, 1857.



UNITED STATES PATENT OFFICE.

GEORGE H. HOAGLAND, OF PORT JERVIS, NEW YORK.

IMPROVEMENT IN SETTING OUT THE PACKING OF PISTONS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 17,788, dated July 14, 1857.

To all whom it may concern:

Be it known that I, GEORGE H. HOAGLAND, of Port Jervis, Orange county, and State of New York, have invented certain Improvements for Setting Out the Packing of Pistons for Steam-Engines; and I hereby declare that the following is a full and exact description thereof.

To enable others to make and use my invention, I proceed to describe its construction and operation, reference being had to the annexed drawings, hereunto annexed and making part of this specification.

Figure 1 is a plan of the piston; Fig. 2, a section showing the spider form of the construction, &c.; Fig. 3, a side elevation of the piston; Fig. 4, a section in the direction of the piston-rod; Fig. 5, an elevation of the end of the cylinder, showing the cap.

The piston is in its external appearance like those in ordinary use. Around the spider-frame is a steel ring, which is parted on one side so that it may expand. On the outside of this are two brass packing-rings, parted at an angle so that they can be expanded. In the spider-frame is a taper hole, in which is set the piston-rod F, having a screw cut on the end and a hole drilled in it in the direction of the length, large at the top and smaller at the bottom. (See Fig. 4, F.) Upon the screw which protrudes through the spider is set a cylindrical nut G, and this holds the piston-rod in the piston-head. Down through the cylindrical nut is inserted a cone C, adjusted by a screw cut upon it and working in a female screw in the top of the nut G. There is a binding-nut H to hold the cone C firm. On four sides of the tapered part of the piston-rod (where it fits into the spider) are holes

made to allow the radial arms B to reach through to the cone C within the piston-rod. The radial arms B act against four springs D, (to set out the packing,) and this is done by screwing down the cone C.

The more peculiar features of construction in this piston are as follows: The cylindrical nut G for securing on the piston-head is a simple mode of arrangement. Through this and into the hollow piston-rod is screwed the cone C, the lower end of which runs into a hole of a size to fit it and prevent vibration. The radial arms B rest against this cone, and in order to expand the packing-rings it is only necessary to screw down the cone C, when the rings will be expanded with perfect equality.

Upon the end of the cylinder K is a cap I. This cap covers an opening in the end of the cylinder, through which the cylindrical nut G and the head of the cone C project. To tighten the packing any time it is only necessary to unscrew the cap I and screw down the cone, and this operation will set out the packing-rings. The cap being then replaced, the engine is again ready to work. This saves the time and trouble of taking off the cylinder-head, as is usually done.

What I claim as my invention, and desire to secure by Letters Patent, is—

The setting out the packing by means of a tapering mandrel C, placed in the center of the piston-rod, constructed and arranged substantially as above described.

GEO. H. HOAGLAND.

Witnesses:

OWEN G. WARREN,
J. D. STURTEVANT.