

Anthony & Furves, Piston Packing.

No. 23,578.

Patented Aug. 10. 1869.

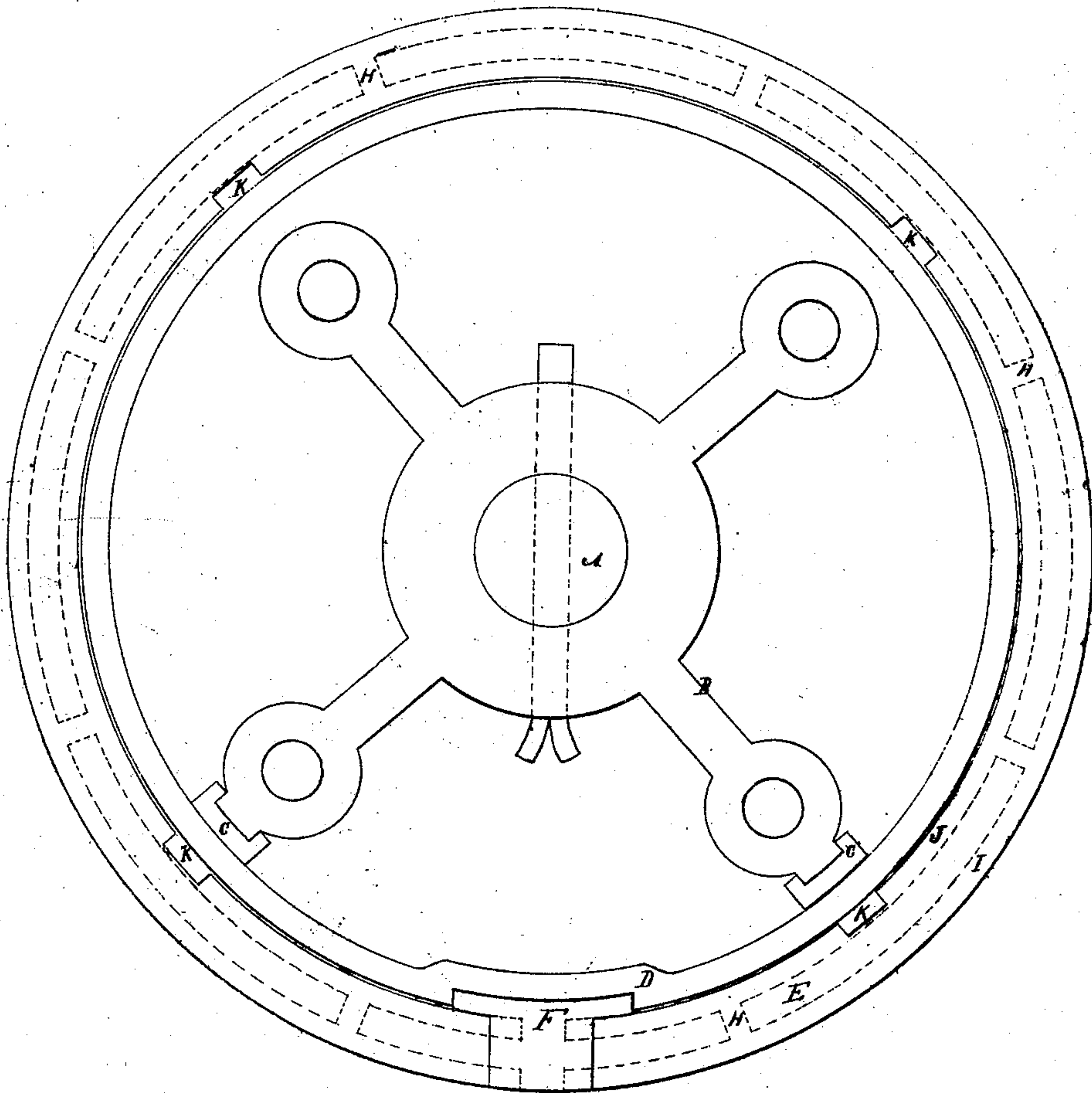


Figure 1.

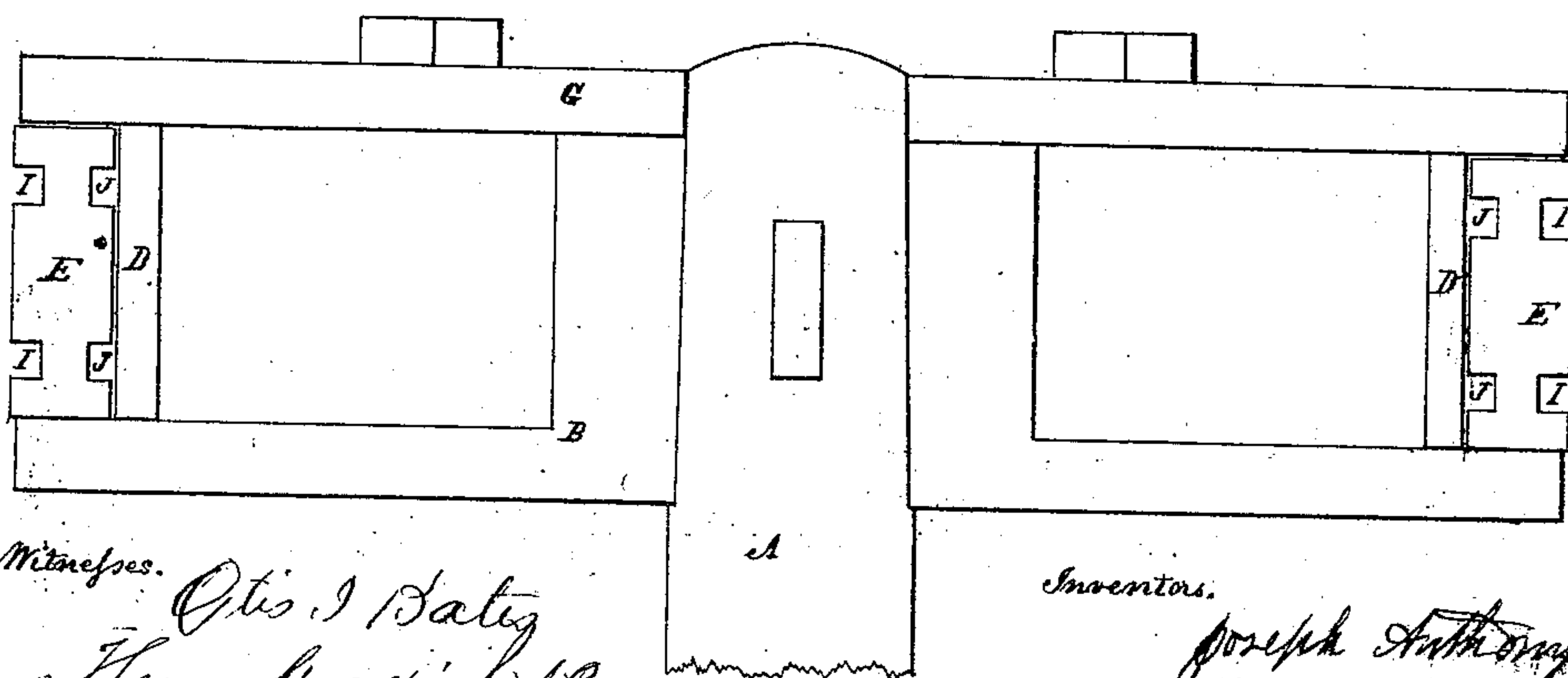


Figure 2.

Witnesses.
Otis I. Bates
Henry Goodrich, Jr.

Inventors.
Joseph Anthony
Thomas B. Furves

United States Patent Office.

JOSEPH ANTHONY AND THOMAS B. PURVES, OF GREENBUSH,
NEW YORK.

Letters Patent No. 93,578, dated August 10, 1869.

IMPROVEMENT IN PISTON-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, JOSEPH ANTHONY and THOMAS B. PURVES, both of Greenbush, in the county of Rensselaer, and State of New York, have invented a new and useful Improvement in Construction of Piston-Packing for steam-engines; and we hereby declare that the following is a clear and exact description of its construction and operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Construction.

The pistons to which our improved packing is applied, may be constructed in many ways, though the one which we prefer as most completely accomplishing the object, is by the use of the ordinary piston-rod A, piston-spider B, the liners C, an inside ring D, an outside ring E, the opening or cut in which is covered by the break-joint F, and lastly, the follower G.

The piston-rod, the spider, and the follower, are connected together in the ordinary way, as shown in the drawings. The inside ring is uncut, and is finished of such a width that the follower shall bind it tightly in its place. It is also so formed as to make room for the break-joint, as shown in fig. 1. The outside ring is made slightly narrower than the inside ring, so that when the piston is being propelled along the cylinder, the steam acting therein may have ready access over its edge (on the steam-side) and into the space provided between it and the inside ring.

Near each edge of the outside ring we make a series of holes, H, shown by the dotted lines in fig. 1, to let steam out next to the inner surface of the cylinder.

To more completely accomplish this purpose, we connect these holes with each other externally, by means of grooves, I, passing completely around the ring, with the exception of a short space each side of the cut or opening in the same, as shown by the dotted lines in fig. 1, and in cross-section in fig. 2.

To make sure that steam shall have free access to the holes and outer groove just described, we connect the said holes with each other internally by grooves, J, similar to those on the outside of the said ring, and form openings K, fig. 1, across them, extending from edge to edge of the ring thereof.

The liners are used in the manner shown in fig. 1, to adjust the piston in the centre of the cylinder, as occasion requires.

Operation.

The operation of our improved packing is as follows:

On the admission of steam against the piston, the outside ring thereof is carried tightly against the spider or the follower, as the case may be. This movement of the ring allows steam to pass inward over its slack or open edge, to the openings or space inside of it.

This steam forces the ring out against the inside of the cylinder, making it steam-tight. A portion of the steam at the same time passes through the holes to the grooves on the outside of the ring, where it comes in contact with the inner surface of the cylinder. By this means the minute cells or pores in the rubbing-surfaces are filled with steam, so that the piston is continually moving over a thin stratum or film of nearly or quite the same density outside of the ring as it is inside. This arrangement permits of a single full-width ring, with no friction excepting the weight of parts, and at the same time running perfectly steam-tight.

Heretofore, self-acting packing, so called, has had to be composed of one or more narrow rings, to avoid great internal pressure. The consequence has been that they have been expensive to make, have had insufficient bearing-surface, and have required too much power to overcome the friction inseparably connected with them.

Claim.

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

The construction and arrangement of the self-setting packing-ring E, having holes H, and grooves I and J, with the uncut or steam-tight inside ring D, substantially as and for the purpose described.

JOSEPH ANTHONY.

THOMAS B. PURVES.

Witnesses:

OTIS I. BATES,

HENRY GOODRICH.