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Improvement in Piston Packing.

No. 122,923.

Patented Jan. 23, 1872.

Fig. 1

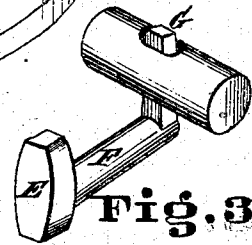
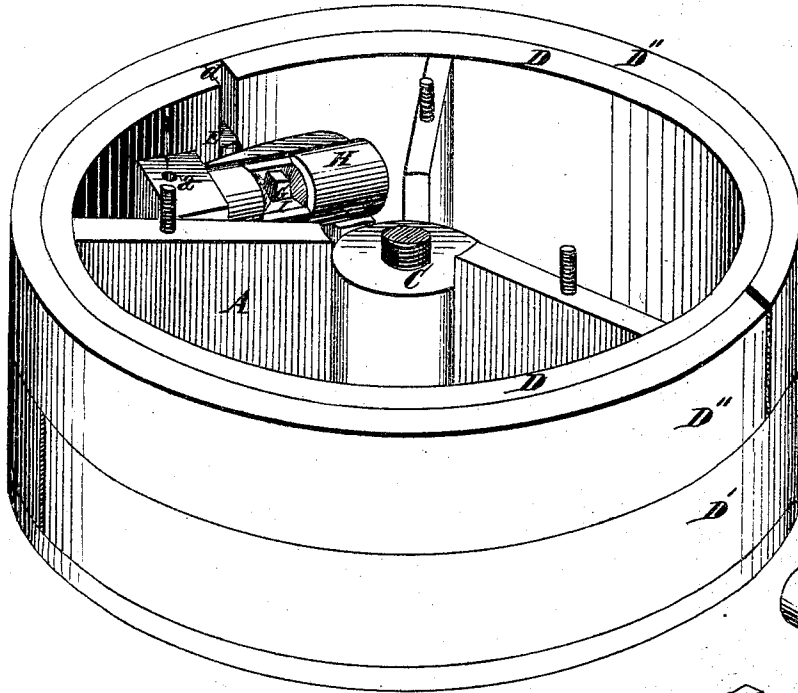
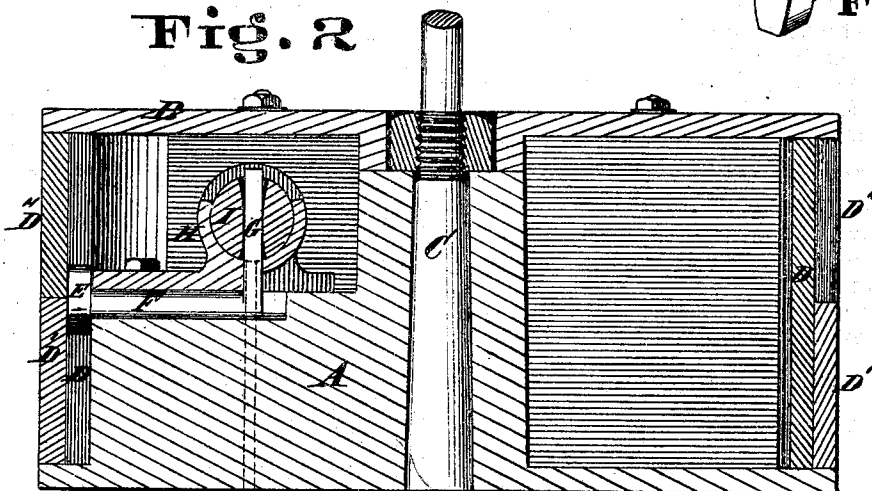


Fig. 2



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# UNITED STATES PATENT OFFICE.

JOSEPH H. STREHLI, OF CINCINNATI, OHIO.

## IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. 122,923, dated January 23, 1872.

I, JOSEPH H. STREHLI, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Steam Piston-Packing, of which the following is a specification:

### *Nature and Objects of Invention.*

My invention relates to the class of piston-packing devices in which the packing-rings are expanded by the application of the steam within the steam-cylinder; and consists, first, in the provision and peculiar attachment of a lever, shaft, and cam-toe to the joint of the inner packing-ring, by which the latter can be increased in diameter as the packing requires it, the lever being adapted to be operated by the force of a spring or otherwise; second, in connection with the device specified in the preceding clause, of a supplemental steam-cylinder, within the main piston, whose piston is directly connected to the lever aforesaid to operate the inner ring of the packing, the piston receiving its steam from the main cylinder at opposite ends.

### *Description of the Accompanying Drawing.*

Figure 1 is a perspective view of a piston embodying my invention. Fig. 2 is a cross-section of the same. Fig. 3 is a perspective view of the lever, shaft, and cam-toe for operating the inner packing-ring.

### *General Description.*

A is the piston-head, and B the follower, the latter being removed in Fig. 1 to exhibit the interior of the piston. C is the piston-rod, and D D' D'' the packing-rings of the piston. The outer rings are arranged in the ordinary way to overlap, as shown, and the inner ring is made of the full width of the space between the heads. The joint *d* of the inner ring D is left wide enough to admit the cam-toe E, which is attached to the vibratory shaft F, and operated by lever G. The shaft F is suitably

journaled, as shown, in the piston-head. (See Fig. 2.) The toe E fits in the narrow direction snugly between the ends of the ring D, and as the lever G is moved in either direction, serves to expand the ring D so as to press out the packing D' D''. This lever may be forced in one direction so as to expand the packing, by attaching it to a spring secured to the piston-head; but I prefer the following automatically-operating device. A supplemental cylinder, H, is secured to the piston-head in the manner shown, into which a double headed piston, I, is fitted, the cylinder being adapted through ports *a b* to receive and exhaust steam from alternate ends of the main piston, the ports serving both as steam and exhaust ports, each port receiving steam from the steam side of the main piston, and exhausting when that side becomes the exhaust side for the main piston. The cylinder H is cut away in the center to receive the lever G, which is fitted snugly into a double V-shaped slot in the piston I.

In the operation of this device the lever is moved in both directions by the direct action of steam, and as it is so moved the rings are expanded by the toe E in the manner before explained.

### *Claims.*

1. In the described combination with the ring D, the vibrating expander E F G, operated substantially as and for the purpose specified.

2. In the described combination with the ring D and expander E F G, the supplemental steam cylinder and piston H I, connected and operated substantially in the manner and for the purpose explained.

In testimony of which invention I hereunto set my hand.

JOSEPH H. STREHLI.

Witnesses:

HENRY MILLWARD,  
J. L. WARTMANN.