L. RICHNER.

PISTON.

No. 192,715. Patented July 3, 1877.

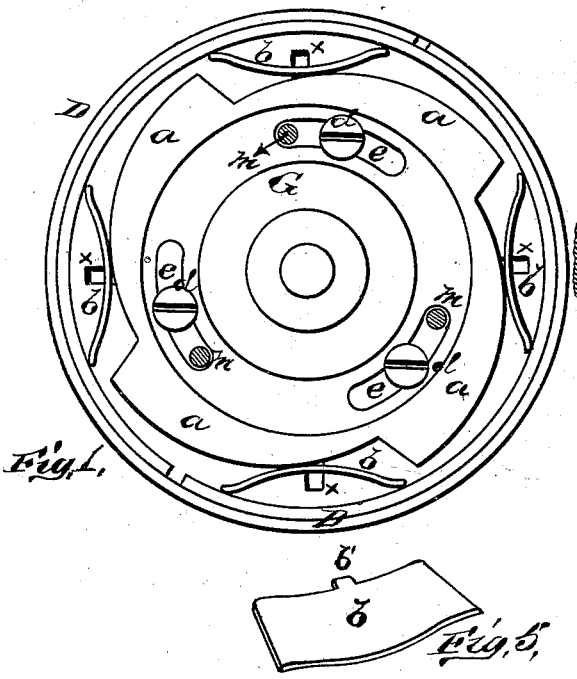

Fig. 1.

Fig. 5.

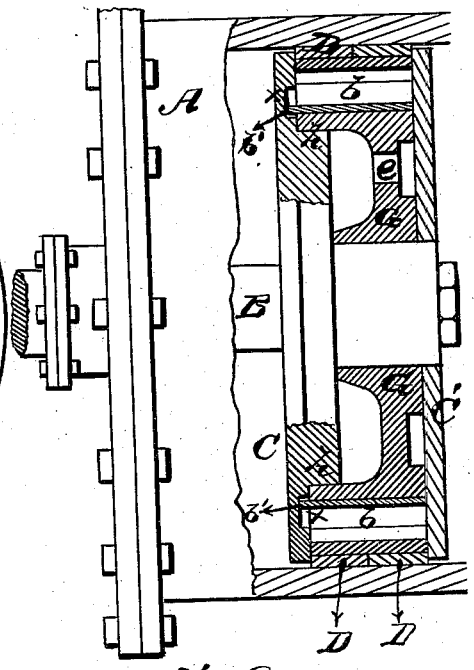

Fig. 2.

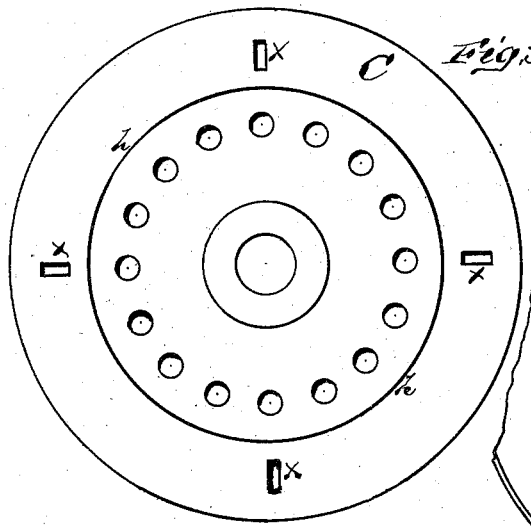

Fig. 3.

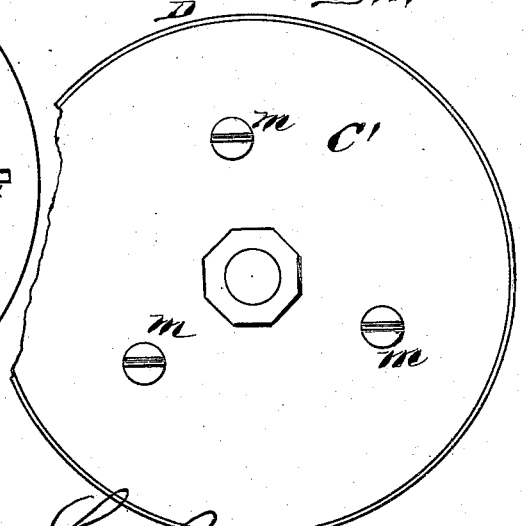

Fig. 4.

WITNESSES

E. H. Bates

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INVENTOR

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ATTORNEYS

UNITED STATES PATENT OFFICE.

LEVI RICHNER, OF MANSFIELD, ILLINOIS.

IMPROVEMENT IN PISTONS.

Specification forming part of Letters Patent No. **192,715**, dated July 3, 1877; application filed June 2, 1877.

To all whom it may concern:

Be it known that I, LEVI RICHNER, of Mansfield, in the county of Piatt and State of Illinois, have invented a new and valuable Improvement in Packing for Pistons; and I 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 a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of the cylinder with the head removed. Fig. 2 is a longitudinal vertical sectional view of the cylinder. Figs. 3 and 4 are plan views of the piston-heads; and Fig. 5 is a perspective view of the spring.

My invention relates to pistons for steam-cylinders, pumps, air-brakes, or any purpose where the packing is set out by cams; and it consists in the construction and arrangement of devices for setting out the packing, as will be hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents the cylinder in which the piston moves. B is the piston-rod, C C′ the heads, and D D the ordinary split packing-rings. G is the hub, placed on the rod B between the heads C C′, and within the packing-rings. The periphery of this hub is formed of a series of cams, *a a*, of equal size and shape, as shown.

Opposite each cam-surface *a* is placed a flat metal spring, *b*, of semi-elliptic shape, which spring has in the center of its lower edge a projecting lug, *b′*, which enters a corresponding hole or cavity, *x*, in the head C, thereby preventing the springs from moving, but causing them to remain in the same place.

The ends of the springs *b b* bear against the inside of the packing-rings, pressing the same outward.

The packing-rings D D are set out by turning the cam-hub G, which operates on all the springs *b b* simultaneously and equally—that is, they are all set out the same distance from the center at one operation. The hub is then fastened by means of screws *d d* passing through slots *e* in the hub into the head C.

The hub G is made hollow, as shown, and fits around a concentric shoulder, *h*, formed on the inside of the head C, so that it will always remain in true position.

Any desired number of springs may be used according to the size of piston, the hub having always a corresponding number of cam-surfaces, *a*.

After the cam-hub has been thus adjusted, as described, the head C′ is put on and fastened by means of screws *m*.

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

The combination of the head C, provided with recesses *x* and split packing-rings D, with the hub G having a series of cam-shaped surfaces, *a*, formed on its periphery, and a corresponding number of springs, *b*, provided with lugs *b′*, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of witnesses.

LEVI RICHNER.

Witnesses:
J. BENDER,
C. R. SMYTHE,
E. A. BARRINGER.