W. R. Brown,

Piston Packing.

No. 93,273. Patented Aug 3 1869.

Fig. 2.

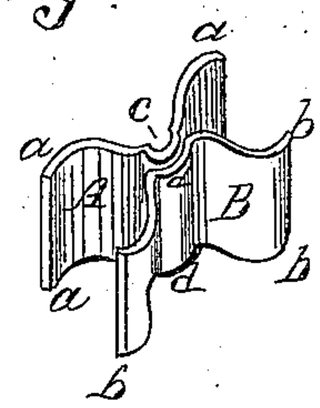


Fig. 1.

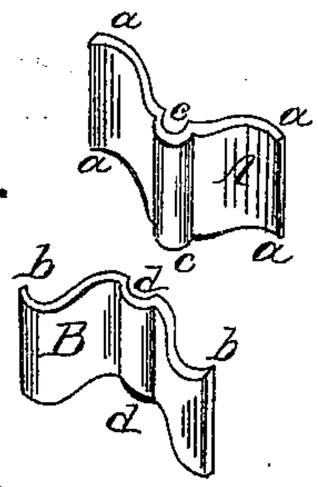
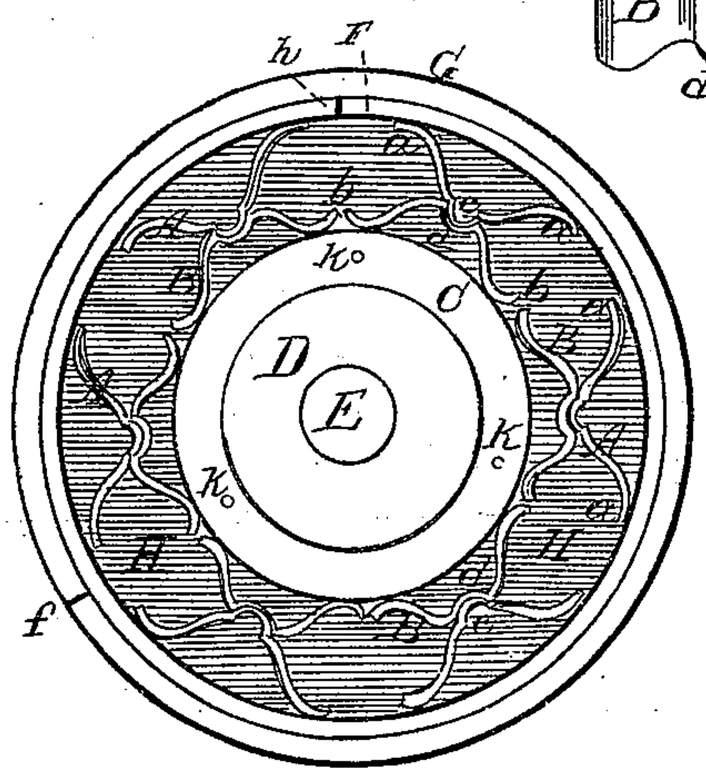


Fig. 3.



Witnesses.

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C. A. Brown

Inventor:

William R. Brown

United States Patent Office.

WILLIAM R. BROWN, OF BATH, NEW YORK.

Letters Patent No. 93,273, *dated August* 3, 1869.

IMPROVEMENT IN PISTON-SPRINGS.

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, WILLIAM R. BROWN, of Bath, in the county of Rensselaer, and State of New York, have invented a new and improved Piston-Spring; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, and to the letters of reference marked thereon, in which—

Figures 1 and 2 are perspective views of my invention.

Figure 3 is a plan of my invention, as applied to the piston of a steam-engine.

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

The principal object of my invention is to provide a series of springs, to be used with the commonly-used divided packing-rings of a steam-engine piston, said rings to be easy of construction, and efficient when in place.

This object I accomplish by constructing my improved springs of two separate pieces of flat bar or ribbon-steel, the form of which is shown in figs. 1, 2, and 3.

The depth of the spring should be a little less than that of the space they are intended to occupy when in place, for if they should fit close up to the follower, they could not work easily, and would, therefore, be inefficient.

Each spring is constructed of two pieces, separate and distinct from each other, the outer part, A, of the spring fitting against the inside of divided inner ring F, as shown in fig. 3, and the inner half, B, of the spring fitting against the hub C of the piston, as shown in the same figure.

Each half of the spring A and B has a small central semicircular curve, seen at *c* and *d* in the accompanying drawings, and the outer ends of the springs are curved, as shown at *a a* and *b b*, in figs. 1, 2, and 3.

The points *a a* of the half A of the spring are curved, in order that they may work easily against the inside of inner divided ring F, and the outer ends of the inner half B of the spring are curved, as shown in the drawings, in order to prevent them from sliding or overlapping each other, and also, that they may work easily against hub C of the piston.

Springs constructed of two pieces of steel, as above shown and described, may be easily formed by almost any ordinary workman, and tempered in an oil-bath without any difficulty whatever. They will work freely when in place. They will not fracture or break, as do those springs that are made of one piece of steel, nor are they as difficult to temper They can be given a more uniform temper, and thus their elasticity will be found to be greater than if they had been formed of one piece of steel.

Springs constructed as herein described will be much more durable and reliable than in the old style of constructing them of one piece of steel.

Another great advantage possessed by my springs is their uniform pressure upon all parts of the circumference of the piston-packing rings F and G.

The position of the several ports of a steam-engine piston are shown in fig. 3, in which E designates the piston-rod, D the hub, and C a rebate, turned down off the hub, to receive the follower, which is secured in place by nuts or bolts K K K.

The follower is made in the usual and well-known manner, and a little smaller than the outside rings G.

Having described my invention,

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

The construction of a piston-spring, consisting of two parts, A and B, made of flat bar or ribbon-steel, substantially in the manner and for the purpose as herein shown and described.

WILLIAM R. BROWN.

Witnesses:

S. S. JONES,

THOMAS HASTING.