J. SADLER.

Piston-Packing Springs.

No. 213,942. Patented April 1, 1879.

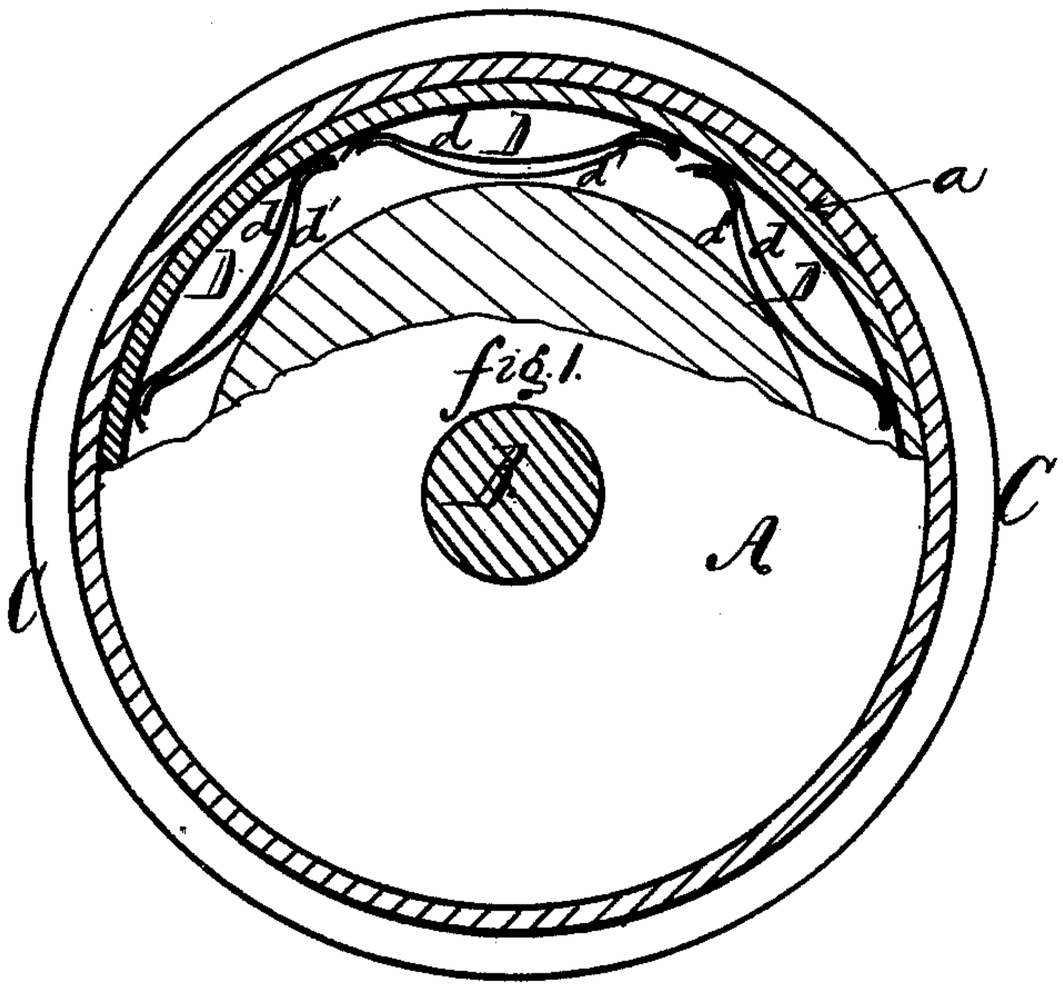
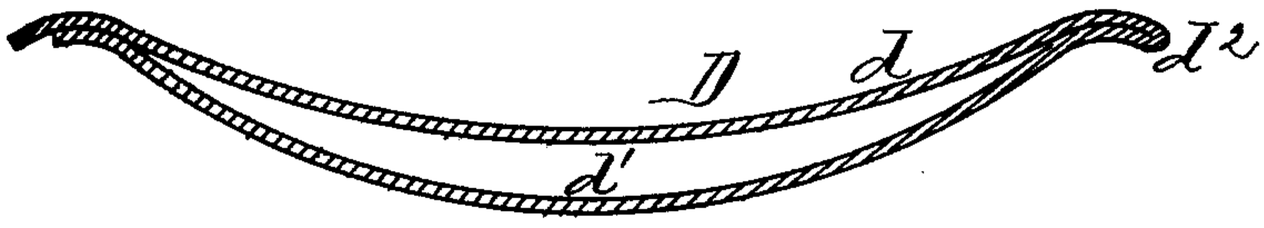
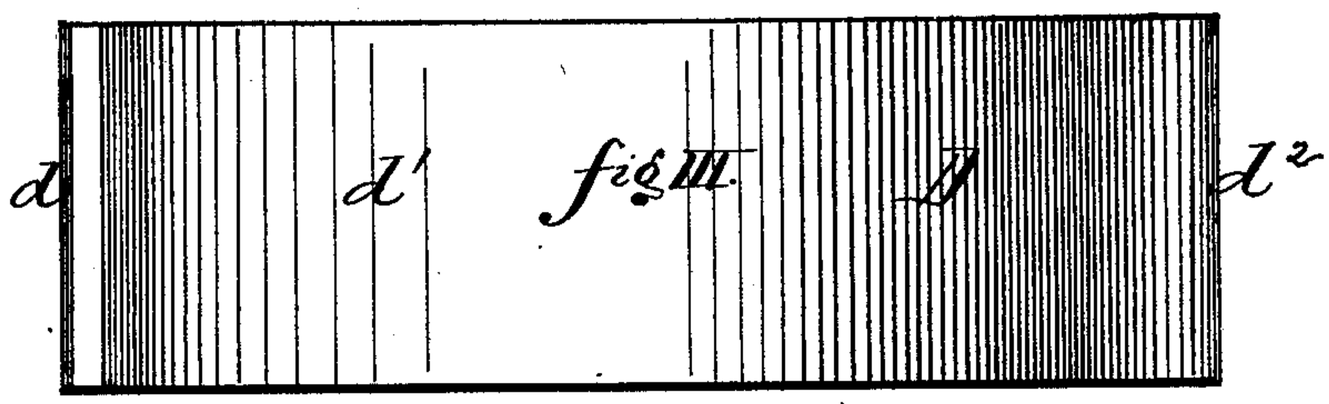



fig. II.




Witnesses:
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# UNITED STATES PATENT OFFICE.

JAMES SADLER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO CHARLES I. FANNING, OF SAME PLACE.

## IMPROVEMENT IN PISTON-PACKING SPRINGS.

Specification forming part of Letters Patent No. **213,942**, dated April 1, 1879; application filed January 20, 1879.

*To all whom it may concern:*

Be it known that I, JAMES SADLER, of the city of New York, and in the county of New York and State of New York, have invented new and useful Improvements in Springs for Packing Piston-Rings; and I do hereby declare that the following is a clear and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to provide springs for the packing-ring of a piston. These springs can be cheaply manufactured, easily applied, and are simple in construction, being formed of one piece of steel.

My invention consists in taking a piece of steel twelve inches, more or less, in length and two inches, more or less, in width, one half of which is formed into a curved shape. The other half is bent over the first half and is likewise curved; but the curved or arched portion is about one-eighth of an inch, more or less, distant from the curved or arched portion of the lower half, to allow for compression. The free end of the upper half simply rests upon the free end of the lower half.

In order to more fully describe my invention, I refer to the accompanying drawings, of which—

Figure 1 is a sectional view of a piston embodying my invention, and also of the cylinder. Fig. 2 is a detached enlarged side view of the spring. Fig. 3 is a bottom view of the spring.

A represents a piston, with piston-rod B, placed within the cylinder C. *a* is the piston-packing ring. D D are the springs for forcing the ring *a* outward against the cylinder. These springs are made of one piece of steel, consisting of upper part, *d*, and lower part, $d^1$. (See Fig. 2.) The lower part, $d^1$, is curved, as shown. At point $d^2$ the lower part, $d^1$, is bent upward and over the part *d*, and curved as shown. The curved portion of the upper half is less than the curved portion of the lower half, $d^1$. This is done in order to allow the parts *d* $d^1$ to be compressed or expanded when the spring is placed against the rings, as shown, in order to force and hold the said rings close up against the inner walls of the cylinder.

The springs can be held to the piston in any suitable manner.

Having thus described my invention, I desire to claim—

In combination with a piston-ring, the springs D, having upper part, *d*, and lower part, $d^1$, arched and arranged as shown, and formed of one piece of steel, substantially as and for the purpose set forth.

This specification signed this 26th day of December, 1878.

JAMES SADLER.

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