

J. Wheelock,
Piston Packing,
No 42,245, Patented Apr. 5, 1864.

Fig. 1.

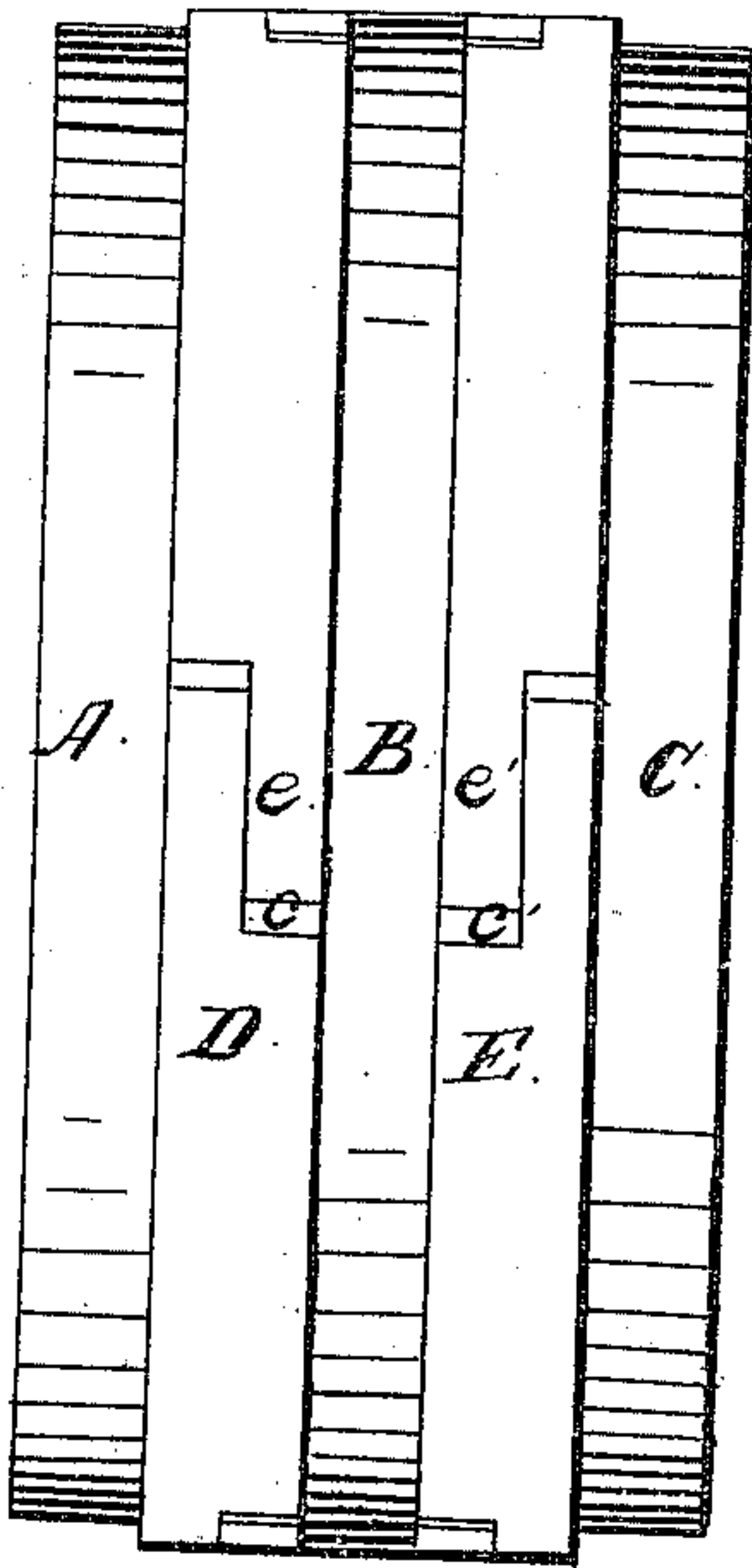
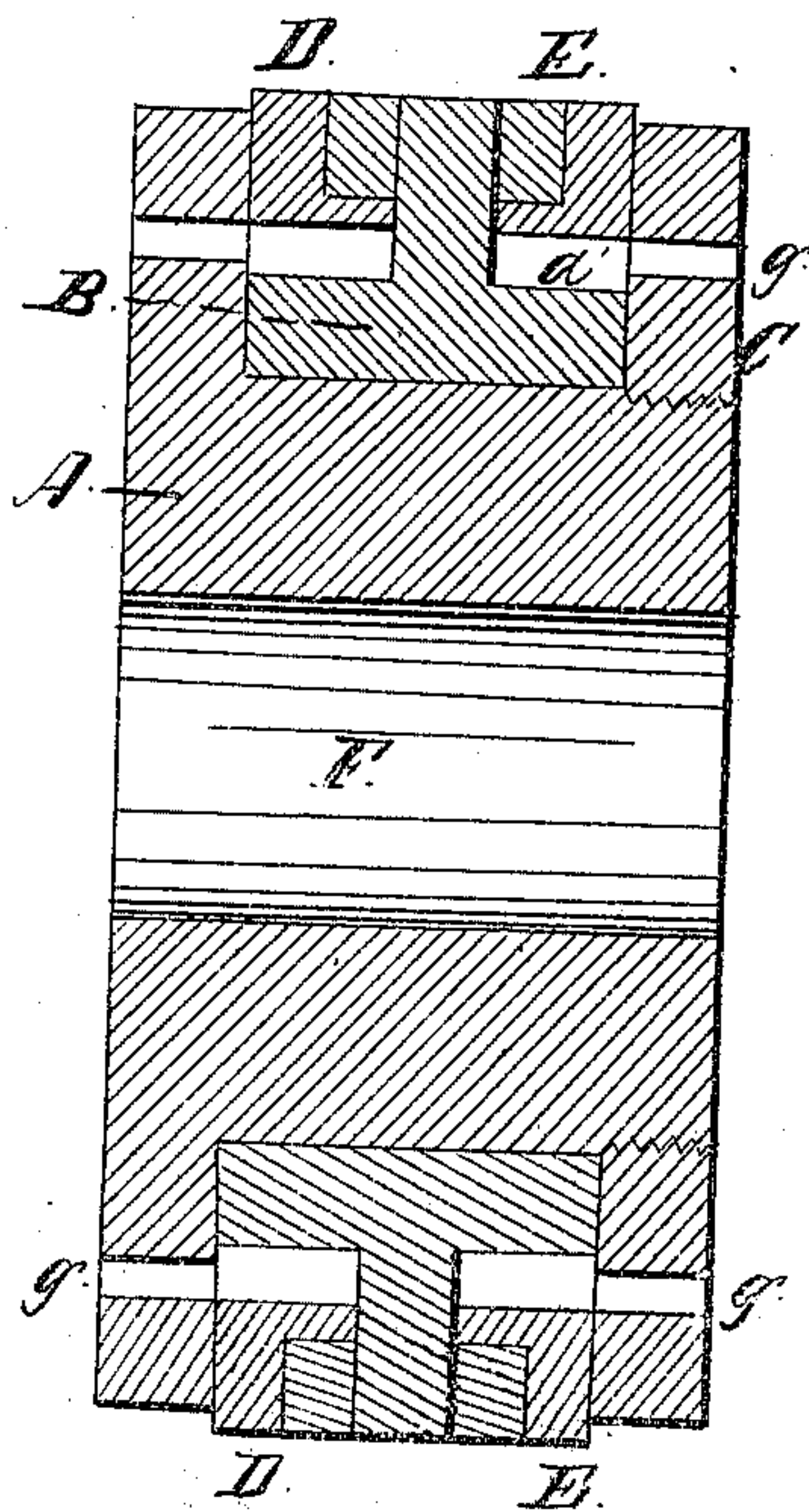


Fig. 3



Witnesses:
H. H. Fenner
Adam

Inventor.
Jerome Wheelock

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Fig. 2.

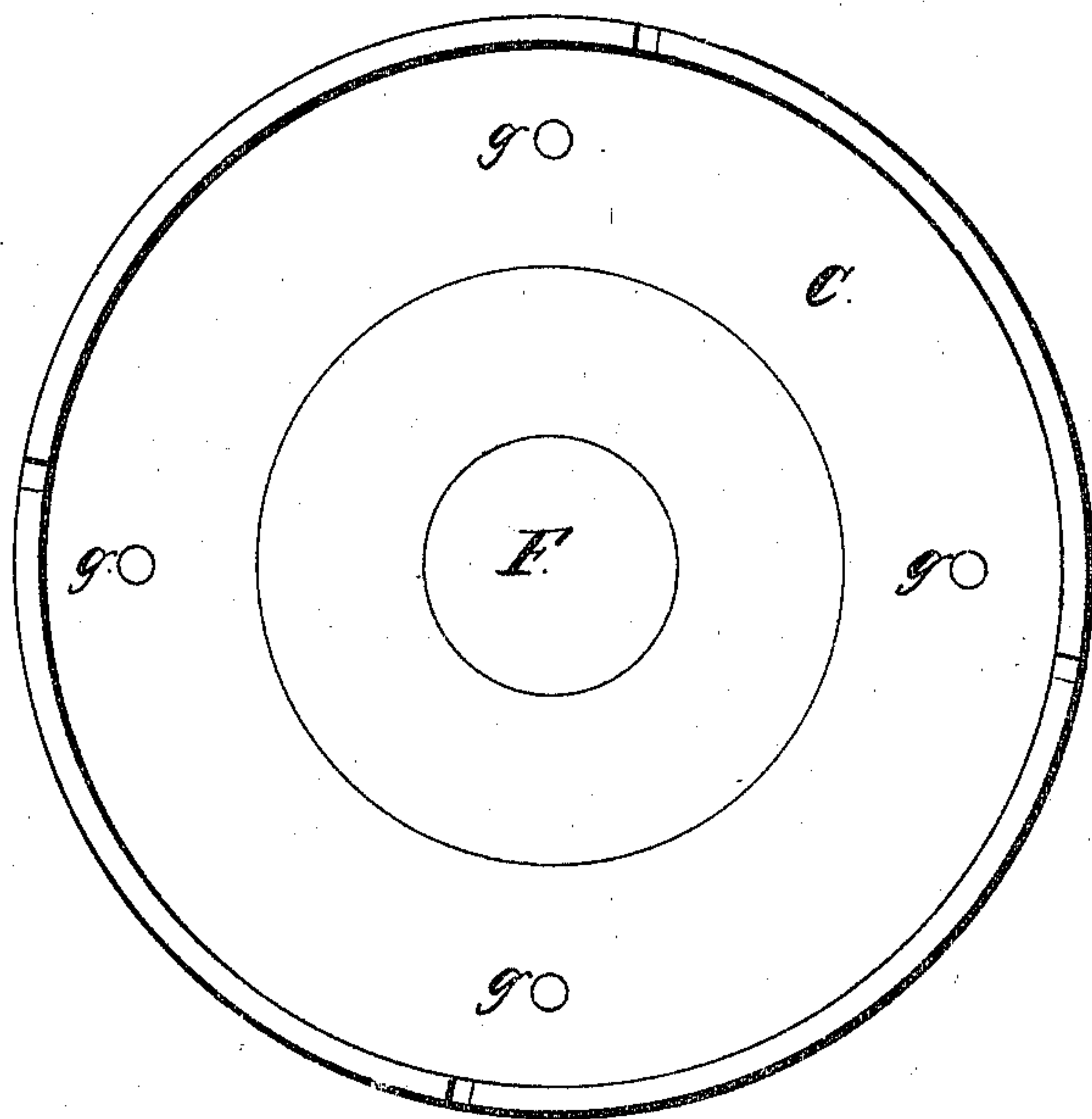
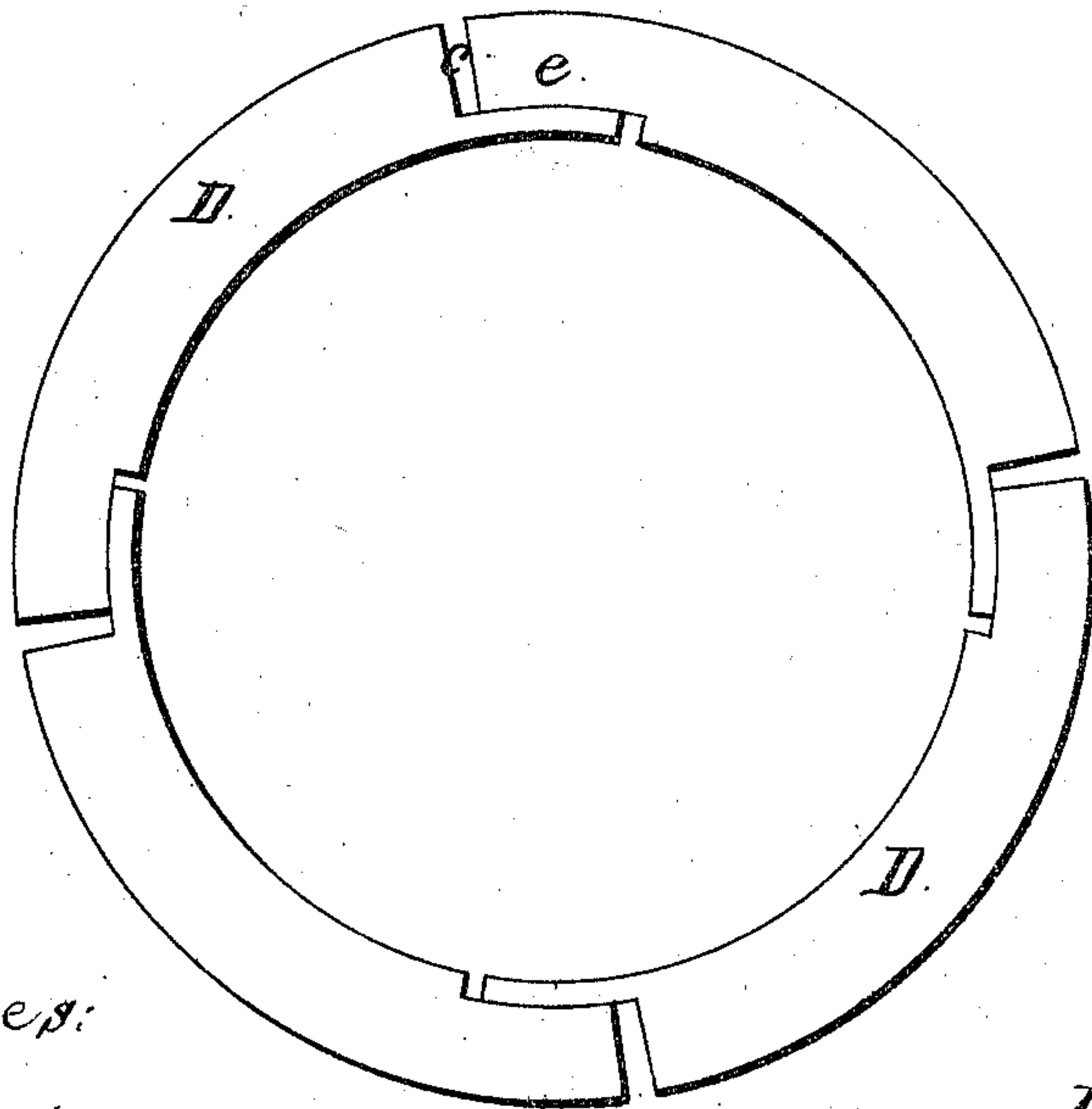


Fig. 4.



Witnesses:
H. H. Chann
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UNITED STATES PATENT OFFICE.

JEROME WHEELOCK, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. 42,245, dated April 5, 1864.

To all whom it may concern :

Be it known that I, JEROME WHEELOCK, of Worcester, in the county of Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Steam-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 accompanying drawings, which make a part of this specification, in which—

Figure 1 is a longitudinal elevation showing the edge of the packing-rings. Fig. 2 is an end view showing a part of one ring. Fig. 3 is a central axial section of the same. Fig. 4 is an elevation of one ring separately, showing the inner surface of said ring.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in making a segmental packing ring of cast-iron, brass, or other metal, the segments being cast or made separately, the ends so arranged and fitted as to break joints, for the purpose hereinafter more fully explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its use and operation.

A represents a common piston-head. B is a solid T-shaped ring fitting on the head A. C is a follower screwed onto A, which, together with the ring B and flange on piston-head A, form two separate annular grooves, *a a'*. D E are segmental metallic packing-rings fitting loosely in the annular grooves *a a'*. Each of these segments are formed separately with an L-shaped cavity, *e e'*, at one end, and corresponding tongue *e e'* at the opposite end, which fit into each other for the purpose hereinafter more fully explained. *g g'* are apertures through which the steam passes into the grooves *a a'* to the under side of the packing-rings D E, causing them to expand, and by their expansion to make a steam-tight joint. Between the inner surface of the engine cylinder and the piston F is a hole through which

the piston rod passes, and is attached to the piston-head in the usual manner.

The operation is as follows: The piston being made as described, the ring B and segmental rings D E are turned to fit the engine-cylinder. When steam is admitted against the follower C, it also passes through the apertures *g*, causing the ring E to expand, and, making a steam-tight joint, prevents the steam from escaping to the opposite side of the piston. The piston having completed its stroke, steam is admitted against the piston-head A, and passing through the apertures *g'*, causing the ring D to expand, and alternately each ring is expanded and relieved according as steam is admitted and discharged. The flange on the piston-head A and follower C are turned smaller than the rings, to allow steam to press against a portion of the outer surface of said rings, (see Fig. 2,) causing their inner surface to fit closely against the sides of the ring B, thereby preventing the escape of steam from the under side of said rings. As the segmental rings wear, the inner circle is constantly becoming larger, thereby causing the segments to separate by causing the tongues *e e'* to slide in the cavities *e e'*, (see Fig. 4,) and thus breaking joints and effectually preventing all escape of steam.

The principal advantages of the ring herein described over those now in use are, first, a much stronger ring is obtained than when two rings are used for the same purpose; second, the ring being cast in segments, much labor and material are saved, it being necessary to finish only the inner surface and outer edge.

Having thus described my invention, what I claim as new and of my invention herein, and desire to secure by Letters Patent, is—

The segmental packing-rings D E, constructed in the manner and for the purpose set forth and described.

Witnesses: JEROME WHEELOCK.

H. W. FENNER,
WM. ADAMS.