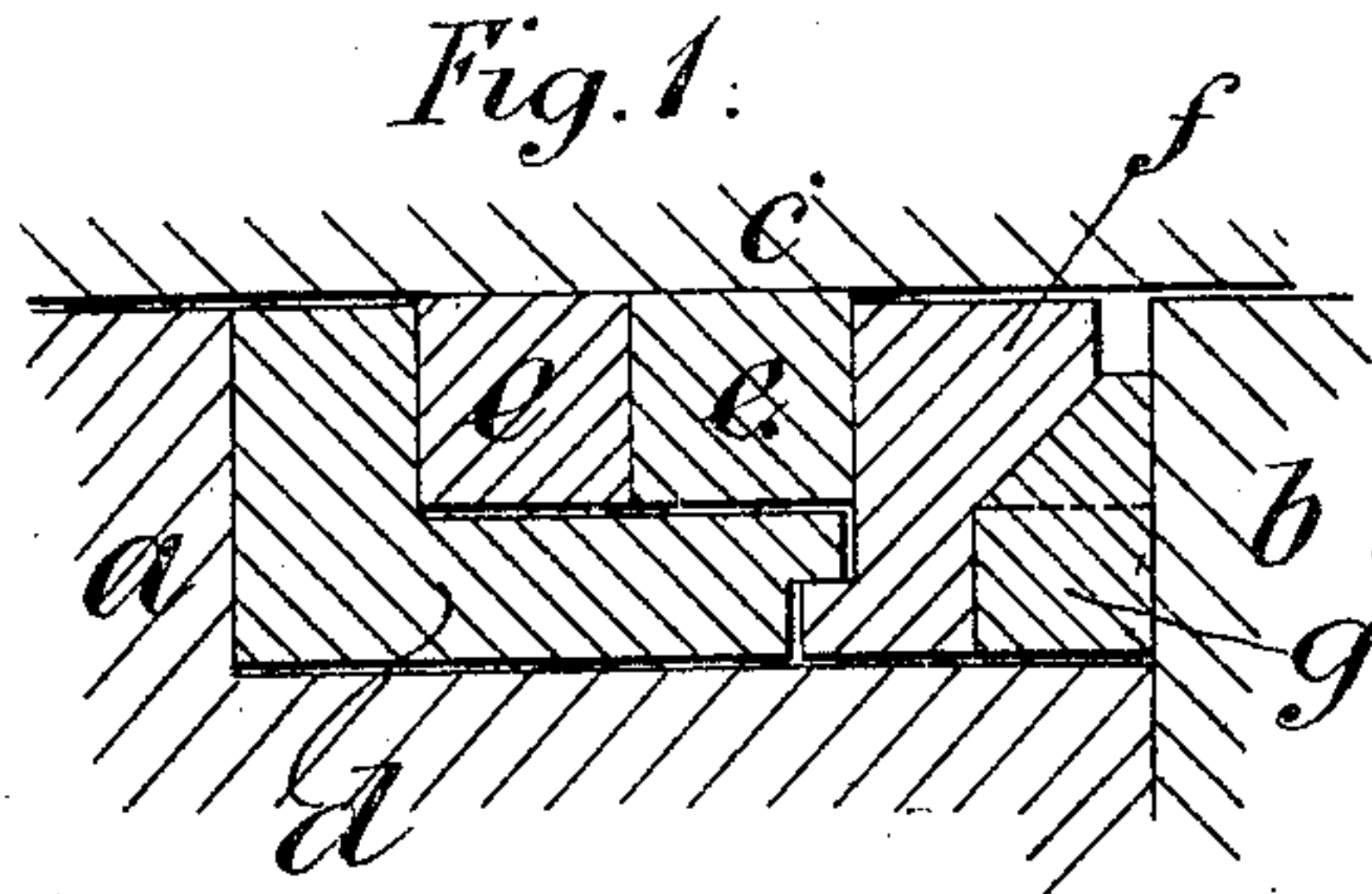


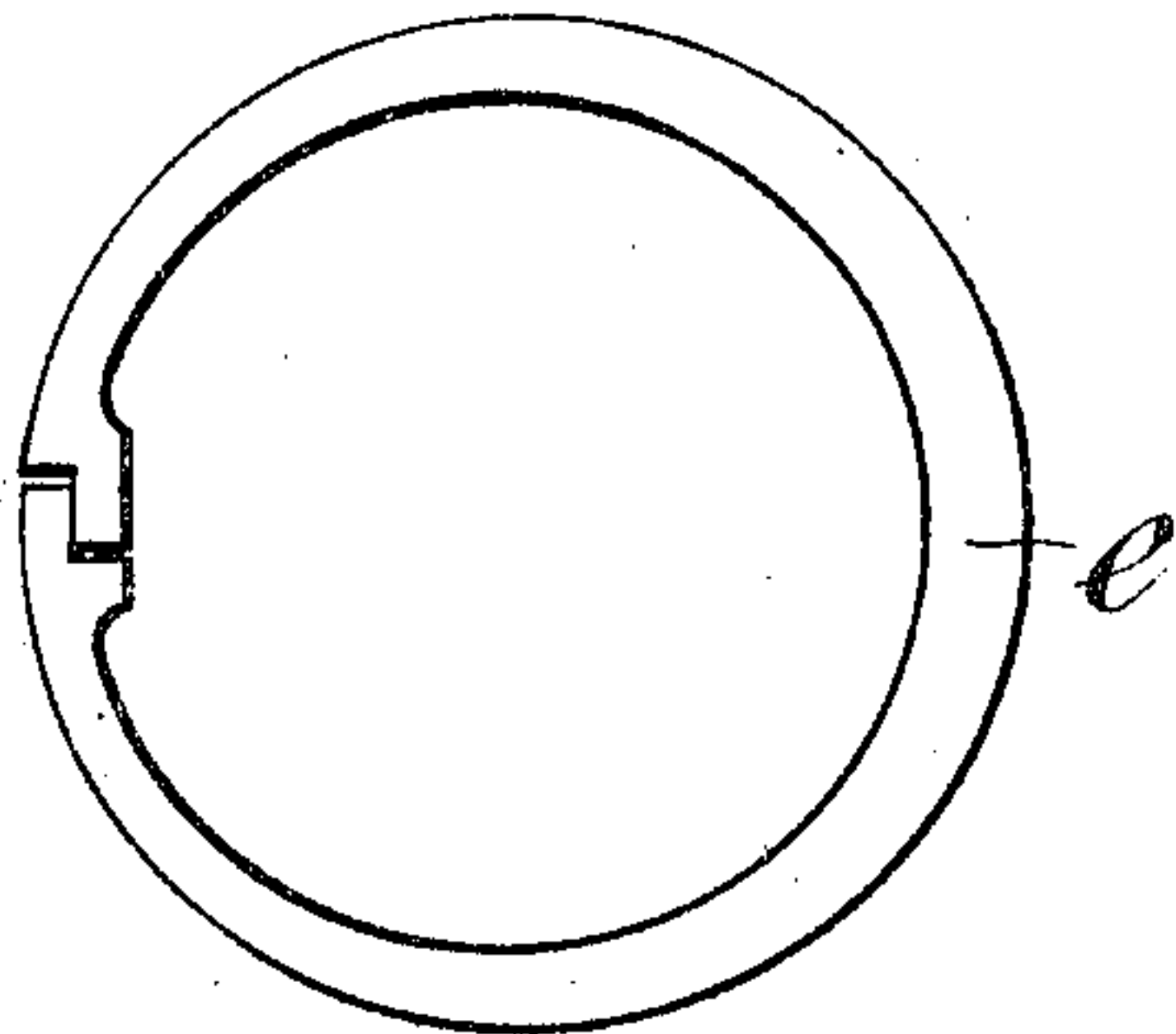
No. 798,139.

PATENTED AUG. 29, 1905.

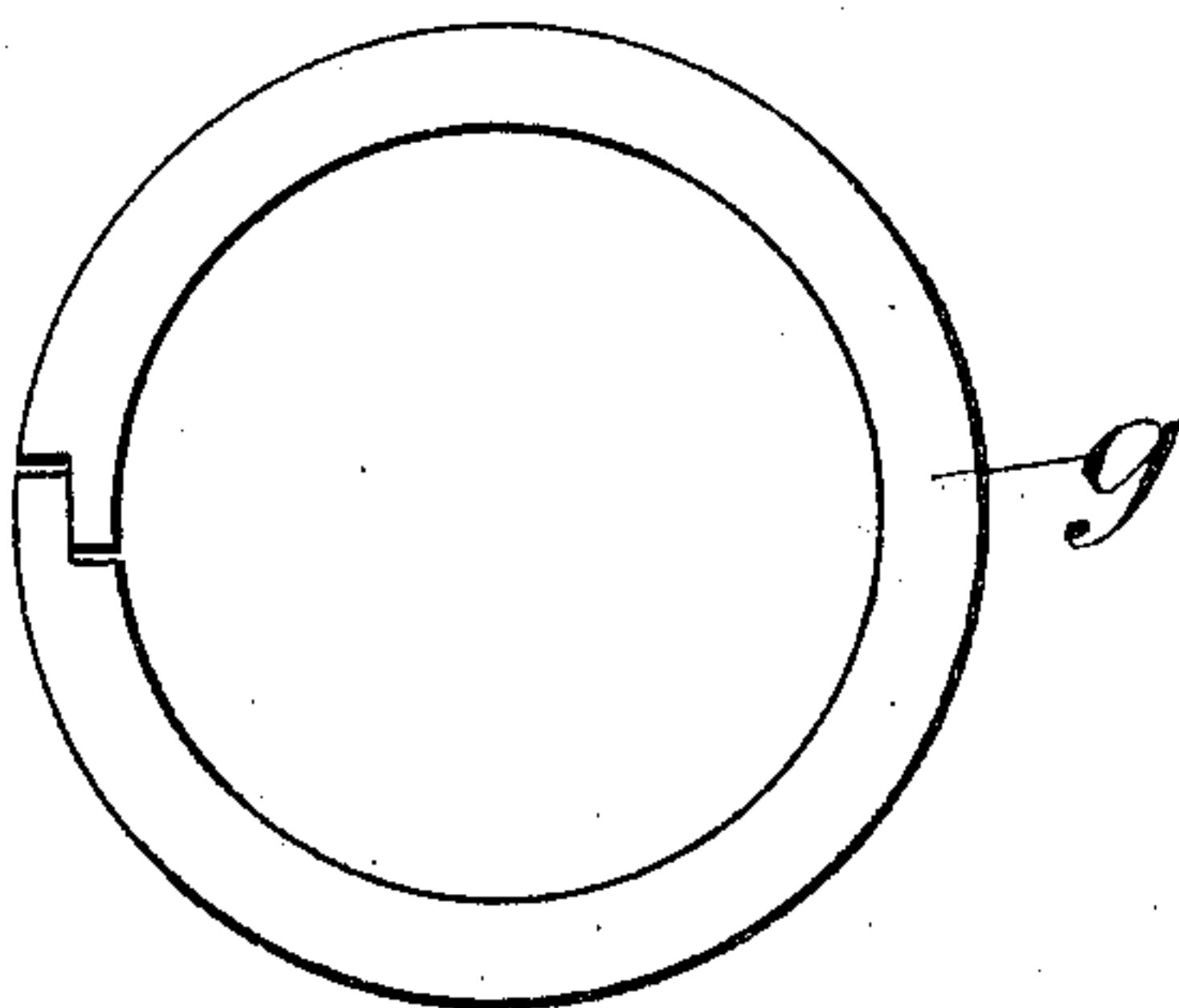
L. W. J. MARSDEN.  
PACKING FOR PISTONS.  
APPLICATION FILED APR. 17, 1905.



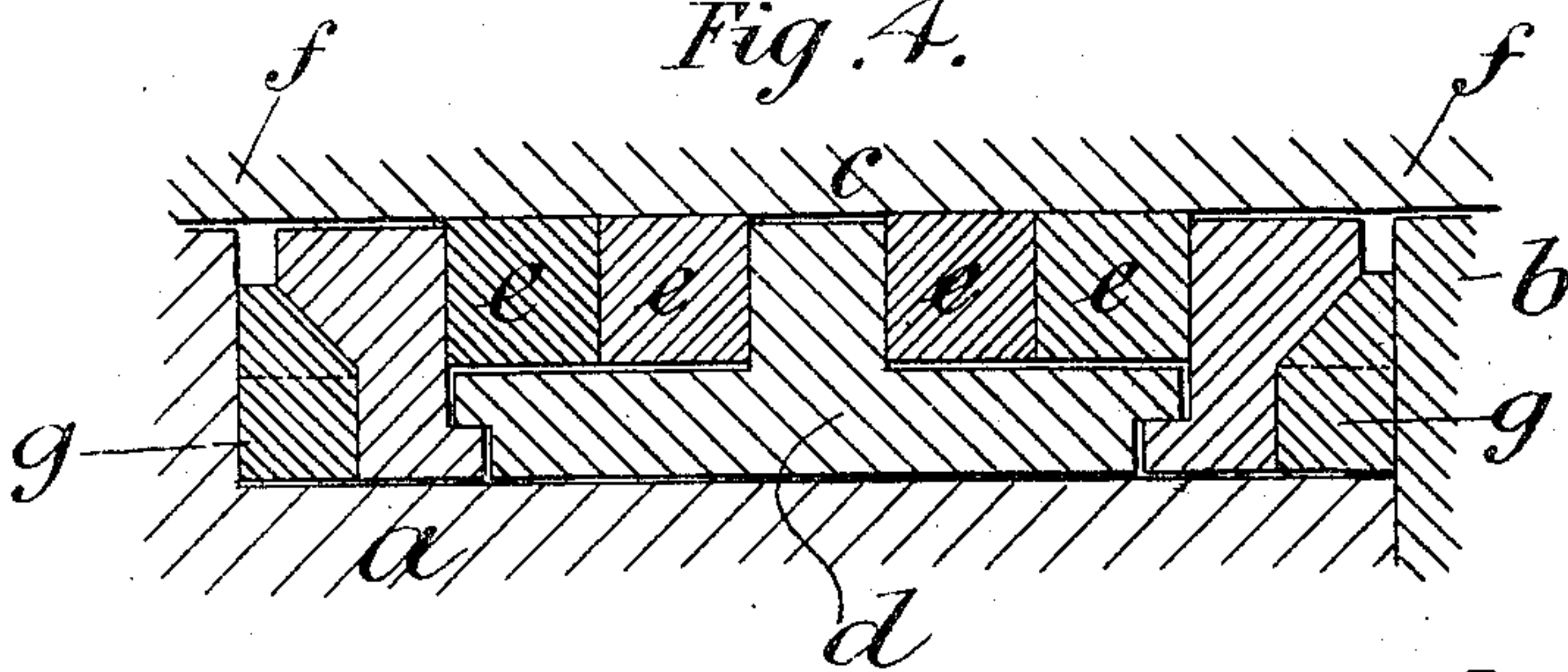
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses.

E. B. Bruner  
W. H. Emery

Inventor  
L. W. J. Marsden,  
By his Attorneys  
Baldwin Wright

# UNITED STATES PATENT OFFICE.

LIONEL WILLIAM JOSEPH MARSDEN, OF MANCHESTER, ENGLAND,  
ASSIGNOR TO UNITED STATES METALLIC PACKING COMPANY,  
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## PACKING FOR PISTONS.

No. 798,139.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed April 17, 1905. Serial No. 256,079.

*To all whom it may concern:*

Be it known that I, LIONEL WILLIAM JOSEPH MARSDEN, engineer, a subject of the King of Great Britain, residing at 11 Queen's Grove, Longsight, Manchester, England, have invented certain new and useful Improvements in Packing for Pistons, of which the following is a specification.

According to this invention a pair or more of spring-rings so constructed that an outward pressure is exerted on the cylinder-wall and having lapped joints cut parallel to their working faces are contained between a covering-ring of angle-section and a follower-ring. The covering-ring and the follower are lap-jointed. The outer face of the follower is recessed, the walls of the recess being beveled. Into this recess is sprung a lap-jointed split ring having its outer edge correspondingly beveled and so constructed that an outward pressure is exerted.

Figure 1 is part longitudinal section, and Figs. 2 and 3 are plans, to a smaller scale, of the rings *e* and *g*, respectively. Fig. 4 is a view similar to Fig. 1 of a modification.

*a* is the piston-block, *b* is the junk-ring of the piston, and *c* is the cylinder.

*d* is the covering-ring of angular section, and *e e* are spring-rings pressing outward against the cylinder.

*f* is the follower, making a lap-joint with the ring *d*, and *g* is the split spring beveled ring in the beveled recess in the follower.

As the ring *g* is forced into position owing to the outward pressure exerted by it and the

resistance offered by the beveled edge of the follower *f* an endwise pressure is maintained, keeping the whole of the rings pressed tight on their respective faces, the object being to prevent the leakage of gas, steam, &c., past these faces and behind the spring-rings *e* and the casing formed by the covering-ring *d* and follower *f*, thus obviating the necessity for what is known as "steam" or "gas" packing behind the piston-rings.

In the modification shown in Fig. 4 the arrangement is duplicated, the L-shaped covering-ring *d* being replaced by a T-shaped ring.

What I claim is—

1. In a piston-packing, the combination of a covering-ring of angular section, a follower having a beveled recess in its outer face and making a lap-joint with the covering-ring, spring-rings in the annular space inclosed by the covering-ring and the follower, and a beveled spring-ring in the recess of the follower.

2. In a piston-packing, the combination of a covering-ring of angular section, a follower having a beveled recess in its outer face and making a lap-joint with the covering-ring, lap-jointed spring-rings in the annular space inclosed by the covering-ring and the follower, and a lap-jointed beveled spring-ring in the recess of the follower.

LIONEL WILLIAM JOSEPH MARSDEN.

Witnesses:

WILLIAM M. KERMODE,  
JONAS PEARSON.