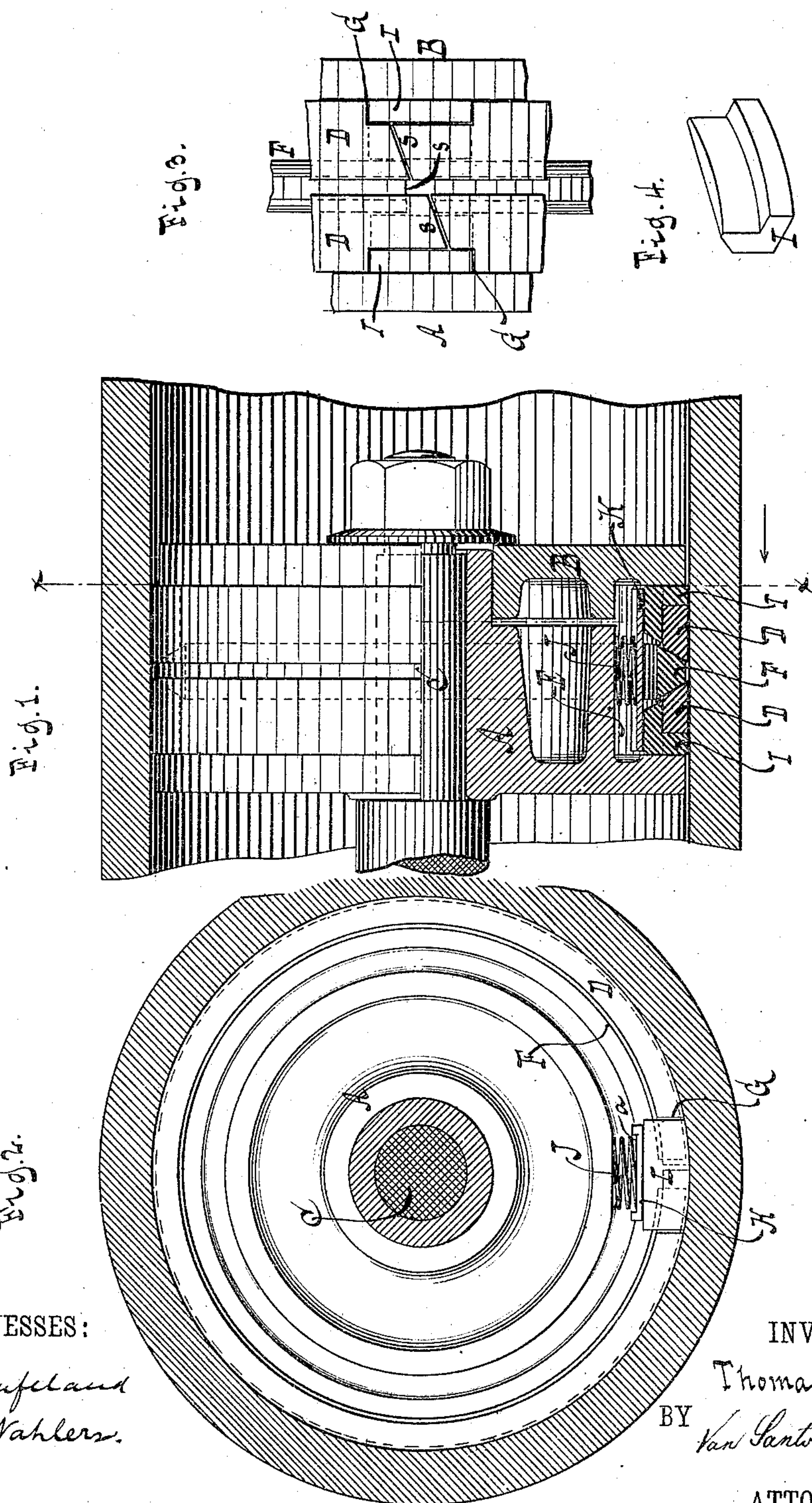


(No Model.)

T. BARBER.
PISTON.

No. 312,950.

Patented Feb. 24, 1885.



WITNESSES:
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UNITED STATES PATENT OFFICE.

THOMAS BARBER, OF FLATBUSH, NEW YORK.

PISTON.

SPECIFICATION forming part of Letters Patent No. 312,950, dated February 24, 1885.

Application filed June 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BARBER, a citizen of the United States, residing at Flatbush, in the county of Kings and State of New York, have invented new and useful Improvements in Pistons, of which the following is a specification.

This invention relates to pistons for steam-engines and other general uses; and it consists in the novel features of construction hereinafter described, whereby an article of superior utility is obtained.

In the accompanying drawings, Figure 1 is a part side view and part longitudinal section of a piston embodying my invention. Fig. 2 is a cross-section thereof in the plane of the line *x x*, Fig. 1. Figs. 3 and 4 are detail views of parts.

Similar letters indicate corresponding parts.

The letter A designates the body of the piston, and B the follower thereof, connected together by means of an axial screw-bolt, C, which is formed on the end of the piston-rod.

The letters D D indicate packing-rings arranged intermediate of the body A and follower B in a circumferential groove, E, formed partly in one and partly in the other of such parts; and F denotes an expansion-ring arranged intermediate of the packing-rings. Each of these rings D D and F is cross-cut, as at *s*, and the packing-rings are beveled on the inner or adjacent sides in an inward direction, while the expansion-ring is beveled on both sides in an outward direction to engage the beveled sides of the packing-rings. Each of the rings, moreover, is made of steel or other spring metal, and consequently, if the bolt C is adjusted to draw the body A and follower B together, the packing-rings D D are expanded by the action of the beveled sides of the rings in the ensuing approach of the packing-rings, while if the bolt is adjusted to free the head and follower the packing-rings are permitted to contract in diameter by their inherent elasticity, so that the rings can be readily adjusted to the cylinder.

At a point opposite to the cross-cut *s* each of the packing-rings D D is provided with a recess, G, into which is fitted a tongue, I, to break joints with the rings, thereby preventing the passage of steam through the cut, and

to hold these tongues in position they are constructed to overlap the inner edges of the rings, and are exposed to the action of a pressure-spring, J, through the medium of a washer, K, which rests on the inner portions of both tongues, it passing freely through the expansion-ring F, and the spring being arranged intermediate thereof and of the body A, in a groove, *a*, of the washers. Other means, however, may be used for retaining the tongues in the recesses.

It will be noticed that in the expansion or contraction of the packing-rings D D they are shifted laterally, thereby preserving a steam-tight joint with the body and follower.

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

1. The combination of the piston-body A, the follower B, the axial screw-bolt C on the piston-rod, the cross-cut packing-rings D D, having their adjacent sides beveled inwardly, the cross-cut expansion-ring F, having its opposite sides beveled outwardly, the packing-rings having recesses G opposite their cross-cuts, and the tongues I, arranged in the recesses, the said axial screw-bolt, by its adjustment, serving to move the follower on the head for expanding or contracting the packing-rings, substantially as herein shown and described.

2. The combination, substantially as hereinbefore described, with the body and follower connected together by an axial screw-bolt, of the cross-cut packing-rings D D, having the inner sides beveled in an inward direction, and the outer sides provided with recesses, the break-joint tongues fitted into the recesses of the packing-rings, and constructed to overlap the inner edges of such rings, the washer K, resting on the inner portions of the tongues, the spring acting on the tongues through the medium of the washer, and the expansion-ring F, having both sides beveled in an outward direction.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

THOMAS BARBER. [L. s.]

Witnesses:

W. HAUFF,

CHAS. WAHLERS.