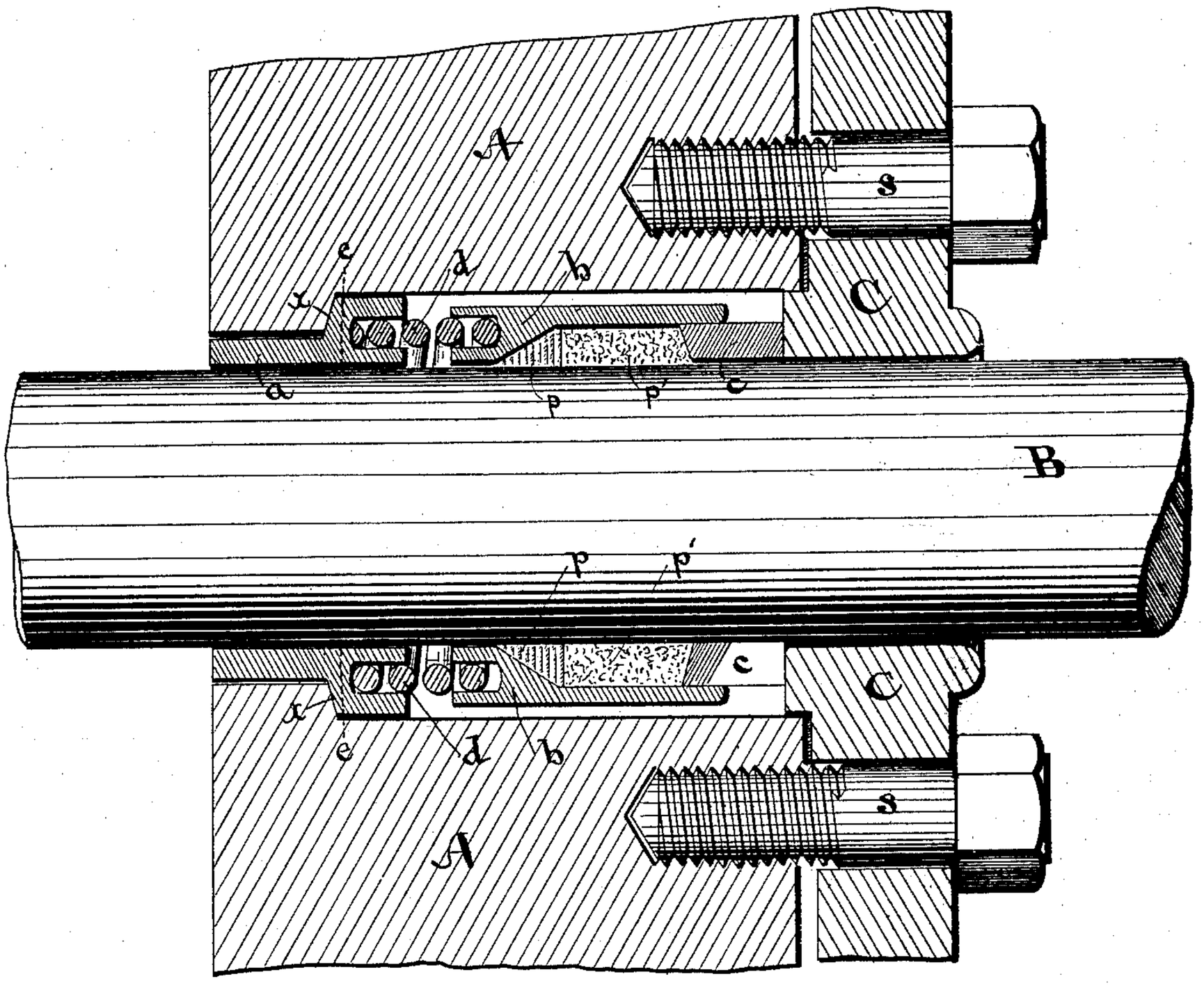
(No Model.)

F. J. ROTH.

STUFFING BOX PACKING.

No. 327,456. Patented Sept. 29, 1885.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK J. ROTH, OF CINCINNATI, OHIO, ASSIGNOR TO THE LANE & BODLEY COMPANY, OF SAME PLACE.

STUFFING-BOX PACKING.

SPECIFICATION forming part of Letters Patent No. 327,456, dated September 29, 1885.

Application filed March 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. ROTH, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Stuffing-Box Packing for Valve-Rods, &c., of which the following is a specification.

My invention relates to stuffing-box packing for pistons, valve-rods, &c., being more particularly adapted to the oscillating or rotary valve-rods of Corliss engines and similar structures, and to pistons and valve-rods of pumps for water, gas, &c.

It consists in a combination of parts of peculiar structure and function, hereinafter fully described and illustrated, producing an inexpensive, durable, and efficient packing of such rods or pistons against leakage of steam, water, gas, &c., under pressure.

Mechanism embodying my invention is illustrated in the accompanying drawing, exhibiting a longitudinal section of all the parts taken axially through the stuffing-box; and such illustration will materially assist the understanding of the following description of my invention, in which all the parts referred to are indicated on the drawing by the letters of reference.

Referring, then, to said drawing, A designates the stuffing-box, and B the piston or valve-rod passing through the same; C, the gland or cap, held in the usual manner by bolts *s s*.

The parts constituting the packing proper consist of a ring, *a*, of brass or other soft metal, fitting the rod B easily but closely, and enlarged at one end to abut against the rear surface, *x*, of the stuffing-box, a cup-shaped ring or collar, *b*, sufficiently enlarged interiorly to receive the packing *p p'*, and a third ring, *c*, also closely fitting the rod B and abutting and forming a sliding joint against the gland C, at the same time projecting slightly within the cup *b*, with a snug fit, permitting a free intermovement. The contiguous faces of the ring *a* and cup *b* are provided with corresponding annular recesses, in which is fitted a spiral spring, *d*, by which a constant pressure is exerted against the cup *b* forward. The interior of the cup *b* is bored to a conical trend at its bottom, and the rear face of the ring *c* is given a slight bevel in the opposite direction. Within the cup *b*, and between the conical surfaces just described, is held the packing, which, when used for valve (steam) packing, is formed of elastic material—such as felting—for the main portion *p'*, with an edging, *p*, of asbestus in the conical seat of the cup *b*.

As thus constructed, the packing-rings and packing revolve or oscillate with the rod B, the ring *c* soon forming a "ground joint" against the gland C. Should the friction of the ring *a* against the stuffing-box be sufficient to prevent its rotation and impair the operation of the packing, it may be cut in two parts in the plane *e e*, leaving the forward portion free to rotate against the rear portion; but ordinarily the elasticity of the spring will be sufficient to accommodate the oscillation of the valve-rod.

When used for water, gas, &c., where a high heat is not encountered, the asbestus packing may be omitted, and is not absolutely essential at any time, though preferable.

It will be observed that a considerable space is left around the packing within the stuffing-box, which in action is filled with steam or water, as the case may be, or may be utilized as an oil-reservoir for lubrication, and by suitable provision the collected dirt, grease, &c., may be blown out by a current of steam.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In combination with the stuffing-box A and gland C, the rings *a c*, cup *b*, spring *d*, and the contained elastic packing, substantially as set forth.

2. In stuffing-box packing, in combination with the ring *c* and spring-impelled cup *b*, the compound packing consisting of a body portion, *p'*, of felt or other elastic material, and an edging, *p*, of asbestus or other heat-resisting material, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses, March 11, 1885.

FRANK J. ROTH.

Witnesses:
L. M. HOSEA,
G. M. CASSATT.