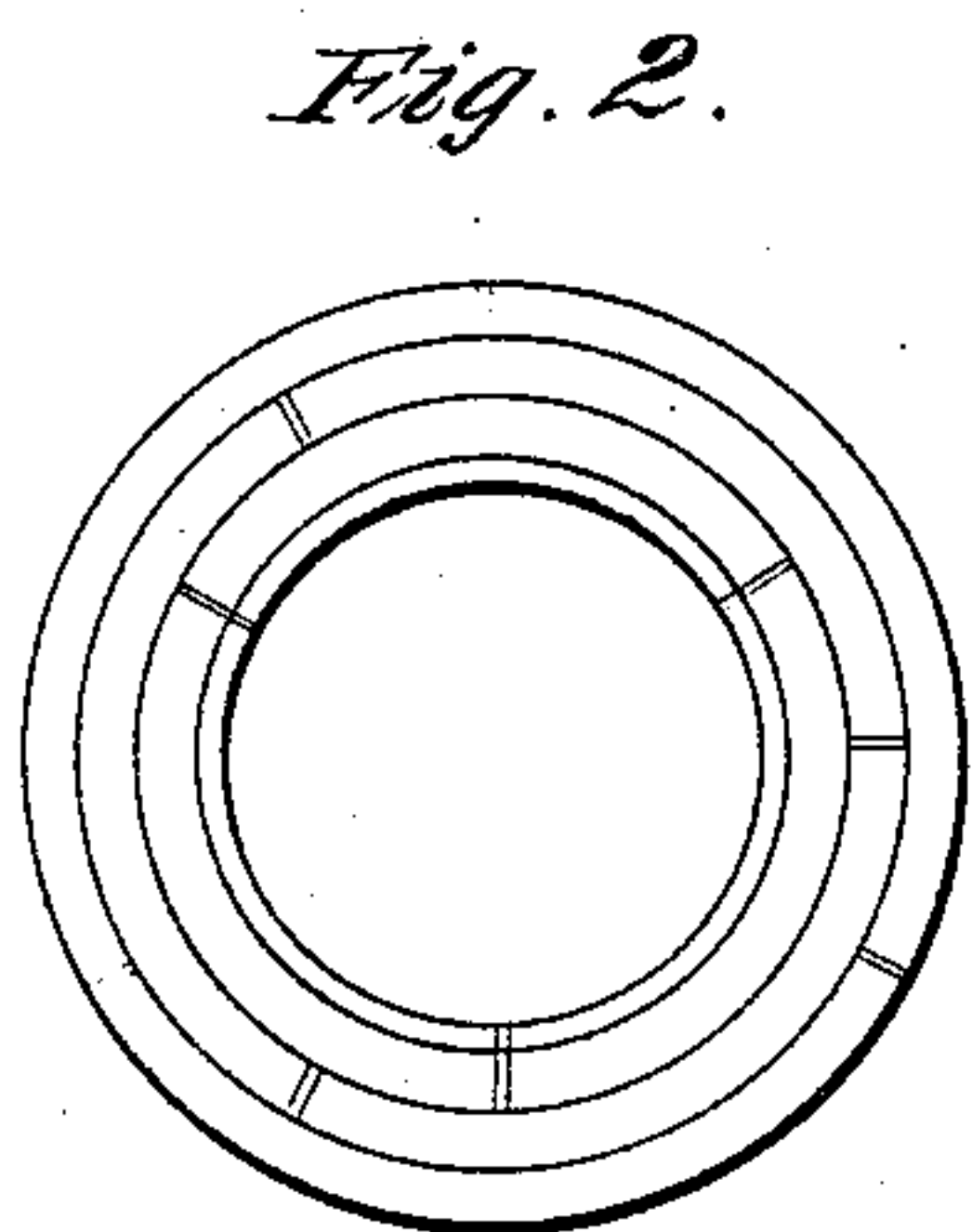
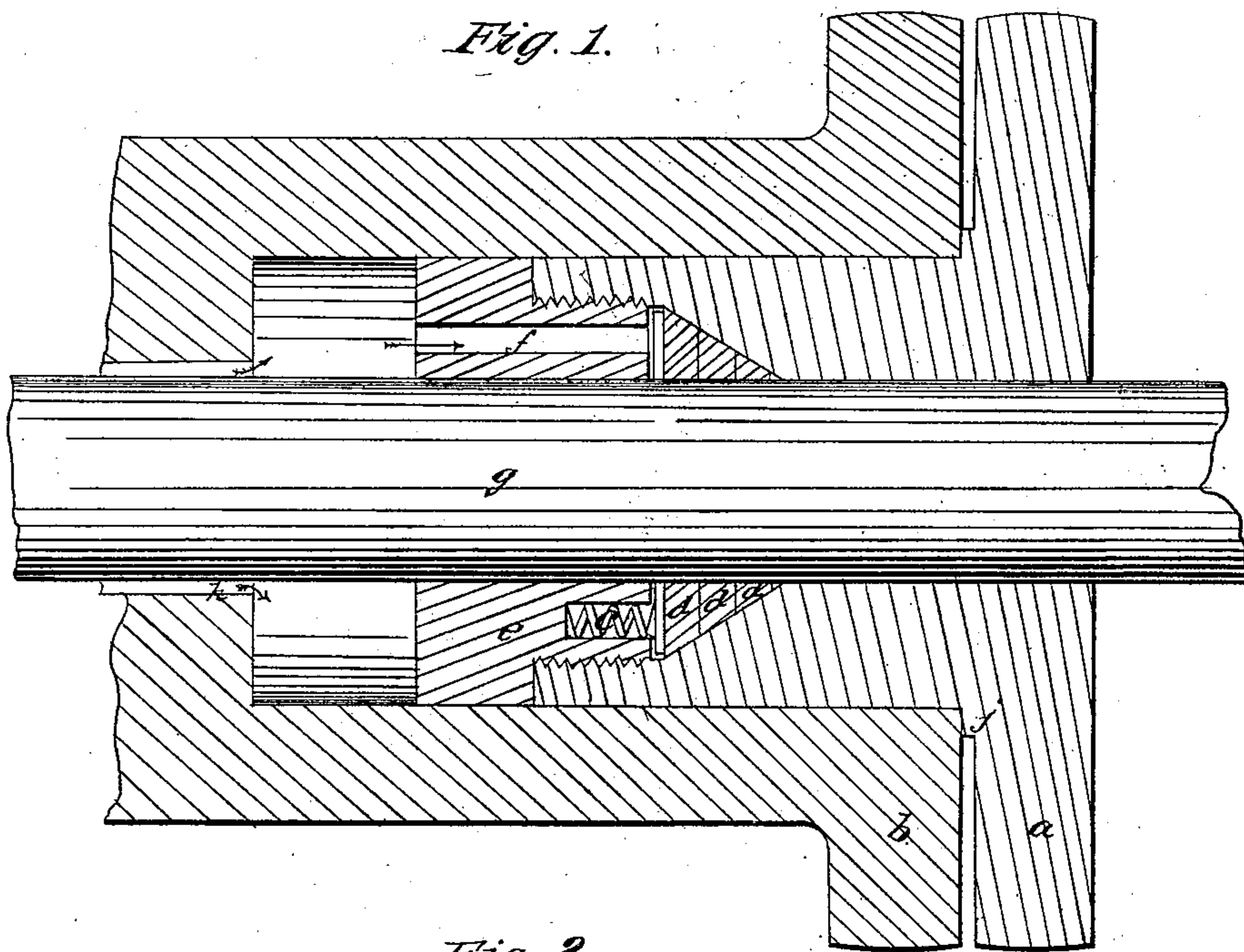


E. T. Prindle,
Piston-Rod Packing.
No 53,542. Patented Mar. 27, 1866.



Witnesses:
R. T. Campbell,
Edw. Schreyer

Inventor:
Edward T. Prindle
by his Atty
Masw. Leurek Lawrence

UNITED STATES PATENT OFFICE.

EDWARD T. PRINDLE, OF AURORA, ILLINOIS, ASSIGNOR TO HIMSELF AND
JAMES WALKER, OF SAME PLACE.

IMPROVEMENT IN PISTON-ROD PACKING.

Specification forming part of Letters Patent No. 53,542, dated March 27, 1866.

To all whom it may concern:

Be it known that I, EDWARD T. PRINDLE, of Aurora, in the county of Kane and State of Illinois, have invented a new and Improved Mode of Packing Piston-Rods; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a diametrical section through the stuffing-box of a steam-cylinder having my improved packing applied to it. Fig. 2 is a top view of the sectional packing-rings detached from the stuffing-box.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to a novel mode of packing the piston-rods of engines, the rods of pump-plungers, the stems of valves, throttles, &c., used either in steam, hydraulic, and pneumatic engines.

The object of this invention is to construct a stuffing-box with conical packing-rings fitted within a conical seat in such manner that the steam or other pressure shall cause the said packing-rings to contract about the rod, and at the same time prevent the escape of steam through the stuffing-box, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, *b* represents the stuffing-box of a common steam-cylinder, and *a* is the gland thereof, which is fitted within this box and sealed at *j* by means of a ground joint.

The inner end of the cylindrical portion of the gland is recessed to receive a cap, *e*, and also to receive a series of conical rings, *d d d*, as shown in Fig. 1.

The cap *e* is perforated to receive springs *c*, one of which is shown in Fig. 1, and between these spring-receptacles holes *f* are made entirely through the cap for the purpose of admitting steam from the steam-cylinder to act upon the packing-rings *d*, as indicated by the arrows in Fig. 1.

The perforated cap *e* may be screwed or otherwise fastened into the cylindrical end of the gland, and a space should be left between the packing-rings and the inner end of the cap *e* for receiving a circular plate or flat ring, *i*, against which the springs *c* act to keep said

rings in place when they are not acted upon by the steam. A slight space may also be left between the ring *i* and the inner end of the perforated cap *e*, for allowing steam to act fully upon the rings *i* and *d d d*. These rings *d d d*, which surround the piston-rod *g*, may be made of Babbitt metal, or of any other suitable substance which will answer the purpose. They are made of sections or segments and arranged within their conical chamber in the gland-stem, so as to break joints, as shown in Fig. 2. They therefore form a perfectly-tight joint; but before these rings are cut, and while they are upon the mandrel or arbor they should be ground into the conical seat with flour of emery, so that they will fit snugly into this seat.

When steam or other pressure is caused to act upon the conical packing through the openings *h h* and *f*, this packing will be forced hard against its conical seat, which will contract the segments and compress them firmly about the rod *g*, and thus pack this rod uniformly tight. As the cylindrical surface of the packing wears away it is forced farther into its conical seat by the springs *c*, and there held to be acted upon by the steam or other pressure.

I am aware that conical segmental rings applied to a conical seat and acted upon by the gland-bolts of a stuffing-box is not new; neither do I claim, broadly, the sectional conical packing for piston or other rods.

My invention is to employ the pressure of steam, air, or water instead of the gland-bolts for compressing the conical packing about the rod, and for this purpose it is necessary to so apply the conical packing that this pressure can act upon it.

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

1. The combination of the perforated cap *e*, for the admission of steam or other elastic agent, with the conical packing *d*, substantially as and for the purpose set forth.

2. The combination of the perforated cap *e*, springs *c*, bearing-ring *i*, and the sectional conical packing *a*, substantially as described.

EDWARD T. PRINDLE.

Witnesses:

JAMES WALKER,
WM. M. HOWELL.