(No Model.)

C. C. JEROME.

PISTON ROD PACKING.

No. 266,293. Patented Oct. 24, 1882.

Fig. 1.

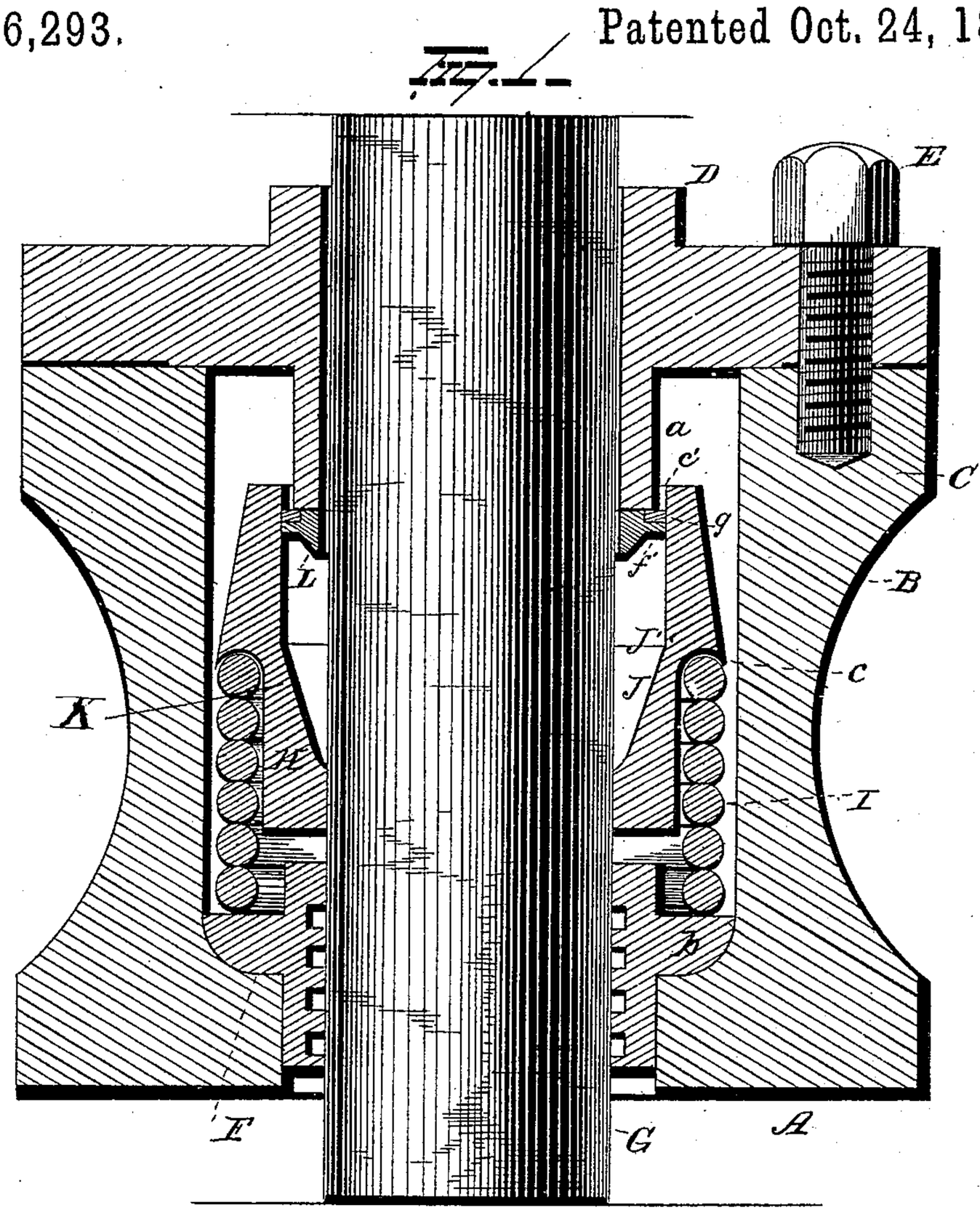
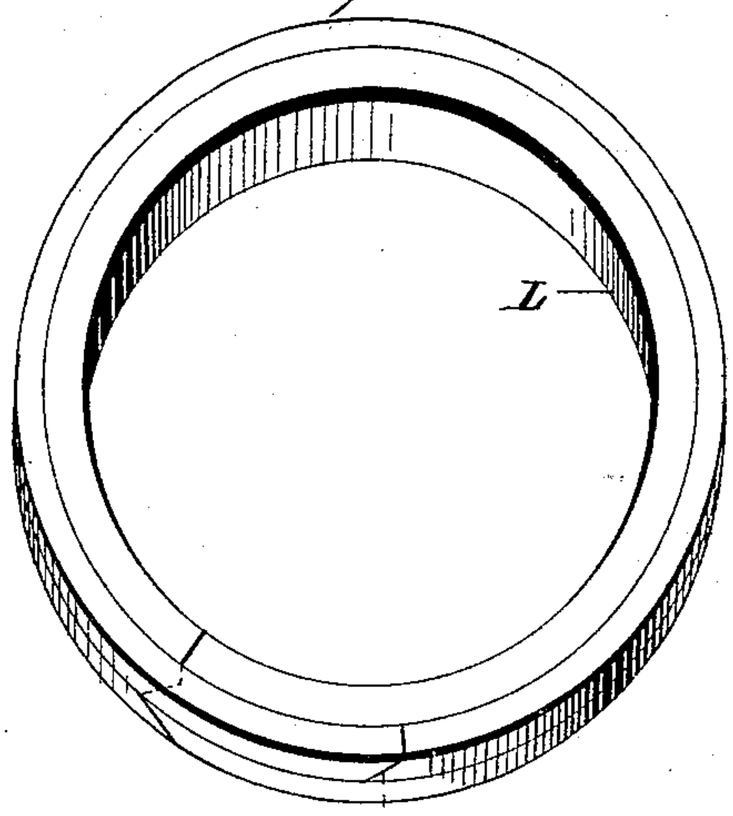


Fig. 2.



WITNESSES

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CHARLES C. JEROME, OF CHICAGO, ILLINOIS.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 266,293, dated October 24, 1882.

Application filed July 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. JEROME, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Piston-Rod Packings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in piston-rod packings.

Heretofore the use of metallic packings has necessitated the construction of a cylinder-head, stuffing-box, and gland particularly adapted to the form of packing intended to be employed; but this is objectionable for the reason that it is expensive, besides requiring considerable unnecessary time for the adjustment of the several parts.

The object of my present invention is to provide a metallic packing adapted to be introduced into the old stuffing-box behind the old style of gland and effectually prevent the escape of any steam, while at the same time the parts are so constructed and adapted to compensate for any wear; and with these ends in view my invention consists in the parts and combinations of parts as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of my improvement, and Fig. 2 is a detached perspective view of the follower.

A represents one head of a steam-cylinder, and B the stuffing-box, having an outwardly-projecting flange, C, formed thereon, upon the outer face of which is seated the gland D, the latter being retained in place by means of the stud-bolts E. The gland D is provided around the piston-rod opening with the inwardly-projecting portion *a*. These parts above described are ordinary in form, and my improved parts, which are to be hereinafter described, are adapted to be combined with the old stuffing-box and perform their function in a satisfactory manner.

Within the opening in the head A of the cylinder is placed the bushing F, adapted to closely embrace the piston-rod G, and is provided with the laterally-extending flange *b*, which latter forms the seat or rest for the said bushing.

H is a packing-cone, provided externally about midway its length with an annular shoulder, *c*, against which the outer end of the spiral spring I bears, while the lower or inner end of the said spring rests on the flange *b* of the bushing F. A conical or converging space, J, is formed within the said packing-cone for the reception of the packing-ring K, and a straight cylindrical portion, J′, for follower L, while the inner end of the said cone is formed to snugly fit the piston-rod G. The follower, in the present instance, occupies the large cylindrical portion J′ of the cone, and the inner face thereof is made to correspond in form to the outer face of a packing-ring and form a seat therefor, while the opposite or outer face thereof is flat, and is adapted to bear in a steam-tight manner up against the end of the inwardly-projecting portion, *a*, of the gland. The follower L is greater in diameter than the said part *a*, and as the follower rests in the cylindrical space of the packing-cone and up against the end of the inwardly-projecting portion *a*, an annular space, *c*′, is formed between the outer or open end of the packing-cone and sides of the portion *a* for the lateral movement of the packing-cone, which lateral movement is necessary owing to the uneven wear the packing-rings K are subjected to. The metallic packing-rings K are formed like those described and claimed in Patent No. 230,133, granted me July 20, 1880, perform their functions in a similar manner, and consequently will not be described in detail here.

The follower L can be made of brass, cast-iron, or any suitable metal, and is provided with a single lap-joint, *e*, the adjacent ends thereof at the joint being gradually inclined or tapering, as shown, to enable the follower to close around the piston-rod, if necessary, and preserve its circular form. This follower is provided on its inner or rear surface with a beveled seat, which corresponds to the front surface of one of the packing-rings, and is provided on its outer surface, or that portion which abuts against the inwardly-projecting portion of the gland, with an annular depression or seat, *f*′, in which the split collar *g* rests. The outer surface of the split collar *g*, when the latter is in position, rests flush with the outer surface of the follower, and, besides strengthening it,

is also adapted to close the joint *e* and prevent the escape of steam between the portion of the gland *a* and piston-rod. The packing-cone is held up in position by the spiral spring I, which latter is of such size to maintain a uniform pressure on the cone, causing it to force the follower L close up to the portion *a* and form a steam-tight joint, while the follower in turn holds the rings in the converging space and forces them inward to the narrowed end thereof as they wear away, the packing-rings being adapted by their peculiar construction to constantly and under all conditions closely embrace the piston-rod and prevent the escape of steam.

The construction shown in the patent previously referred to required a particular kind of gland and a particular kind of packing-cone specially adapted to the gland. This cone is held in place between the upper surface of the stuffing-box and the lower face of the gland, and as a consequence the lateral movement thereof is more or less limited. In the improved form the cone opens outwardly instead of inwardly, and its entire support is the metallic spring I, which holds it up in position and enables it to move laterally and longitudinally as the rings wear away. The inwardly-projecting portion *a* of the gland forms a limit of outward movement of the follower and packing-rings, and also a limit of outward movement of the cone; but as the rings wear away they consequently decrease in circumference, but always retain the same relative position, while the packing-cone is forced outward or toward the gland.

It is evident that slight changes in the construction and relative arrangement of the parts might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not limit myself to the exact construction shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. A packing-cone provided with an outwardly-expanding cavity, in combination with a follower adapted to fit in a steam-tight manner against the inner projection of the gland.

2. The combination, with the gland having an inwardly-projecting portion or flange, of a packing-cone having an internal conical or converging space, a spring for holding the cone in position, a follower adapted to bear against the inwardly-projecting flange of the gland, and suitable packing-rings situated behind the follower.

3. The combination, with the gland provided with an inwardly-projecting portion or flange, of a packing-cone having a conical or converging space, and the follower, the latter being larger in circumference than the inwardly-projecting flange on the gland, so as to form a space between the said flange and cone, for the purpose set forth.

4. The combination, with the gland provided with an inwardly-projecting portion or flange, and a follower larger in circumference than the flange and adapted to bear against the end of the flange, of a packing-cone having an internal space in which the said follower rests, and a spring for holding the said cone in position, all of the above parts combined and adapted to operate as described.

5. The combination, with the gland having an internal projecting portion or flange thereon, of the metallic follower provided with the lap-joint, as described, and the split collar snugly placed in a peripheral recess on the upper surface of the said follower, and means for holding the said follower in position against the flange.

6. The combination, with the gland provided with an internal projecting portion or flange around the piston-rod opening, of the packing-cone, constructed as described, the follower provided with a lap-joint, the split collar secured thereon, packing-rings interposed within the packing-cone behind the follower, and the spring holding the cone in position.

7. The combination, with the cylinder-head provided with the bushing, the stuffing-box, and gland provided with an internal projecting portion or flange, of the follower, packing-cone, packing-rings, and spiral spring, all of the above parts combined and adapted to operate as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES C. JEROME.

Witnesses:
GEO. A. HAWLEY,
WM. WHELAN.