

C. F. Jauriet,
Stuffing-Box Packing.

N^o 52,575.

Patented Feb. 13, 1866.

Fig: 3.

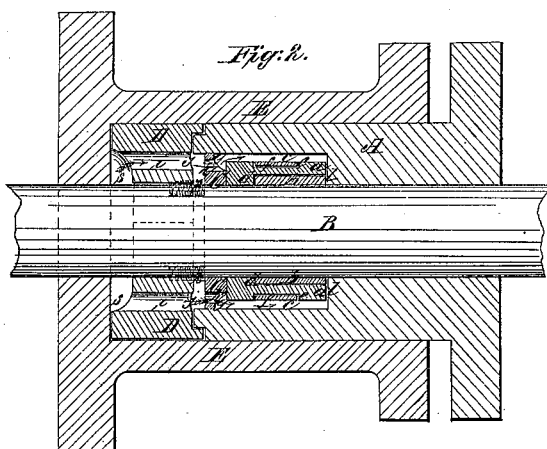
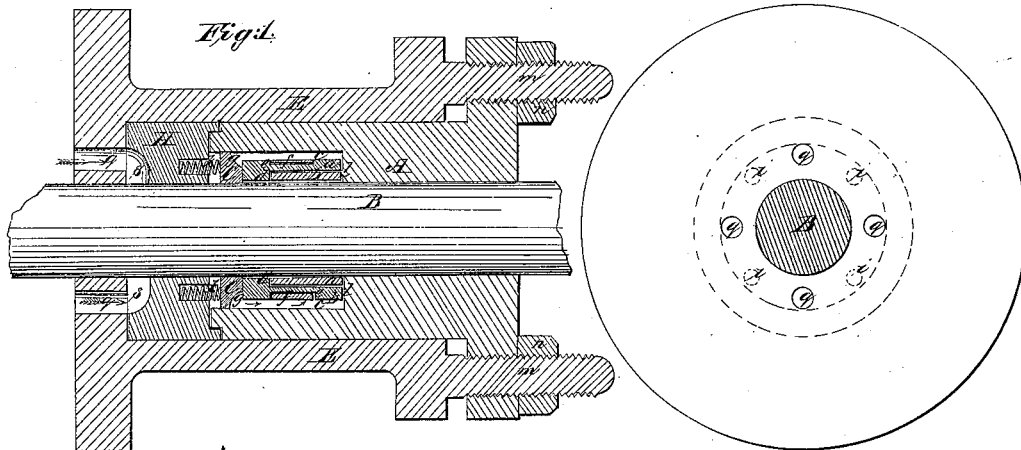


Fig: 4

Fig: 5.

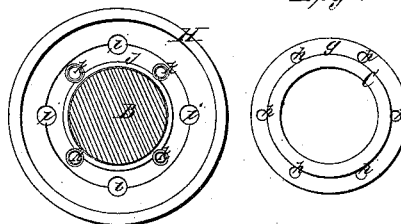
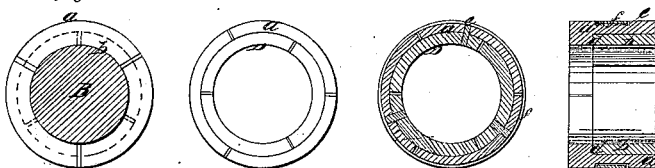


Fig: 6.

Fig: 7.

Fig: 8.

Fig: 9.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE

C. F. JAURIET, OF AURORA, ILLINOIS.

IMPROVED METALLIC PACKING FOR STUFFING-BOXES.

Specification forming part of Letters Patent No. 52,575, dated February 13, 1866.

To all whom it may concern:

Be it known that I, CHARLES F. JAURIET, of Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in the Construction of Stuffing-Boxes for Piston-Rods of Steam and other Cylinders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of an improved stuffing-box as constructed for application to the piston-rod of a steam-cylinder. Fig. 2 is a similar section, but in a plane which is different from that in which Fig. 1 is drawn. Fig. 3 is an end view of the stuffing-box, the piston-rod being shown as sectioned transversely. Figs. 4, 5, 6, 7, 8, and 9 show details of the improved stuffing-box both in section and in elevation.

Similar letters of reference in the several figures indicate corresponding parts.

My invention relates to a stuffing-box which employs metal packing and has such packing compressed upon the piston-rod by means of steam, pneumatic, or hydraulic pressure, and as an improvement in such stuffing-boxes my invention consists, first, in a follower which is free to turn on the piston-rod, and is constructed with a concave cove or chamber in its rear end, said cove being in communication with the steam-passages of the piston-cylinder, and also with the passages which conduct the steam into the chamber outside of the packing; second, in a perforated ring which has a concave cove or chamber in its front face, said cove being in communication with all the steam-passages of the stuffing-box, and with the perforations in itself; third, in the arrangement of cylinder-springs applied between the follower and the packing or between the follower and the ring which is interposed between the packing and the follower; fourth, in a combination of the packing, springs, and loosely-fitted follower, or a combination of these parts and the ring-plate with a stuffing-box for a piston or other rod.

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

A is the gland, bored to fit the rod B in the

usual manner, and counterbored cylindrically at its inner end large enough for the reception of the packing-rings *a b* and to form a narrow chamber, *c*, around the exterior of the rings for the entrance and circulation of steam or other fluid. The rings *a b* are made in segments, and the segments of one, *a*, are arranged to overlap the joints of the segments of the other, *b*, and to enable the two rings to hold together longitudinally. The ring *a* is constructed with a continuous shoulder, *d*, as shown in the drawings.

The outer packing-ring is grooved at *e*, and a flat split ring, *f*, is set down in said groove for the purpose of holding the segments together and around the rod B in such manner as to prevent them from being displaced when there is no pressure of steam or other fluid in the chamber *c*, but not so as to prevent them being compressed still closer around said rod.

Other practical and known modes of constructing the packing may be adopted without altering the character of my invention.

The packing-rings are applied to the rod, as shown. C is a ring-plate, with its front corner cut away, as shown at *g*, and with steam-passages *h* bored through it, as at *h*. This ring-plate is slipped on the rod B, so that that face of it which has its corner cut away shall come against the rear end of the packing, as shown.

By this construction of ring an enlarged space for steam to circulate in its passage into the chamber *c* is formed, and the steam is thereby more certainly conducted into said chamber. The ring-plate is of the same diameter as the bore of the gland A, and its diameter, where it bears on the packing, is nearly as great as that of the outer packing-ring. This being so the steam is in a great measure kept from getting into any other place than the chamber *c*. This is very important, as practical engineers are well aware, because, if the steam has a chance to get between the segments of the two rings, there will be a very imperfect compression of the split rings upon the piston-rod.

D is the part usually termed a "follower." It is of cylinder form, and bored through from end to end, so as to slip on the piston-rod B. Its rear end is constructed with a concave cove or chamber, *s*, and through it from end

to end between its central bore and its circumference a series of steam-passages, *i i*, are formed, as shown. These passages lead from the cove or chamber, *s*. There may be a similar cove, *j*, in the front end of the follower. In the front end of the follower, between the steam-passages, sockets are bored, and into these sockets spiral springs *K K* are fitted, so as to project out beyond the front end of the follower, as shown. The follower, just outside of the margin of the steam-passages *i i* and on its front end, is constructed with an angular shoulder, which corresponds with a shoulder formed on the rear end of the gland. This follower, when on the piston-rod and forced home, makes a joint with the gland, and its springs *K K* press against the ring-plate, and said plate, in turn, presses against the packing and causes it to fit snugly against the shoulder or base of the chamber in said gland, as illustrated in Figs. 1 and 2 at *l*.

The stuffing-box *E* is constructed so as to partly inclose the gland, and to wholly inclose the follower and packing, as represented. Two screw-bolts, *m m*, and two nuts, *n n*, answer for confining all the parts together, as shown. Through the face-plate of the stuffing-box which adjoins the steam-cylinder steam-passages *q q*, corresponding to passages in the cylinder-head, are formed. These passages are made to lead into the cover or chamber *s*, as represented. It is very important to provide the cove or chamber when the follower is left free to turn, for if it is not provided there is liability of the passages getting out of register and the steam not being freely admitted to the packing of the stuffing-box. To have the follower, ring, and packing all free to turn is important, as much of the liability of these parts wearing in ridges or into an elliptical form is overcome, because these parts, by being freed, will in the course of time and from different causes turn and gradually present new wearing-surfaces at those points where the greatest weight or strain comes.

The steam may be admitted from the cylinder through a passage around the piston-rod.

It is obvious that my improved construction of stuffing-box is of very extended use, and may as well be applied to valve-stems, throt-

tle-stems, and pump-plungers as for steam-engine piston-rods. In fact, in all cases where there is steam, pneumatic, or hydraulic pressure it may to advantage be adopted.

To prevent leakage of steam from the stuffing-box such parts as may be deemed necessary should be constructed so as to unite with a ground-joint.

Operation: The steam, entering the stuffing-box, as indicated by the red arrows, takes its course on nearly a straight line into the chamber *c*, where its pressure acts on the outer periphery of the ring-packing and causes it to hug the rod tightly and prevent any escape of steam between them, while the pressure of the springs as well as the steam so confines the packing and the ring-plate, which closes the joints of the packing together, that very little steam can pass between the rings or the rings and the plate *C*, nor between the rings and the base *l* of the counterbore of the gland.

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

1. The construction and arrangement of the follower *D*, substantially in the manner and for the purpose described.

2. The construction and arrangement of the ring-plate *C*, substantially in the manner and for the purpose herein described.

3. The arrangement of the cylindric springs *k* with the turning follower *D*, compressible packing, and steam-admission passages of the stuffing-box *E* and *A*, substantially as described.

4. The combination of the packing, ring-plate, springs, and follower with a stuffing-box, substantially as and for the purpose described.

5. The combination of the compressible packing, springs *k k*, and steam-passages, as described, for the purpose set forth.

Witness my hand in the matter of my application for a patent on a mode of constructing packing for stuffing-boxes and other similar purposes this 5th day of December, 1865.

C. F. JAURIET.

Witnesses:

M. FETSENHELD,
A. BAUER.