

P. W. RICHARDS.

Stuffing Boxes.

117,927.

Patented August 8, 1871.

FIG. 1.

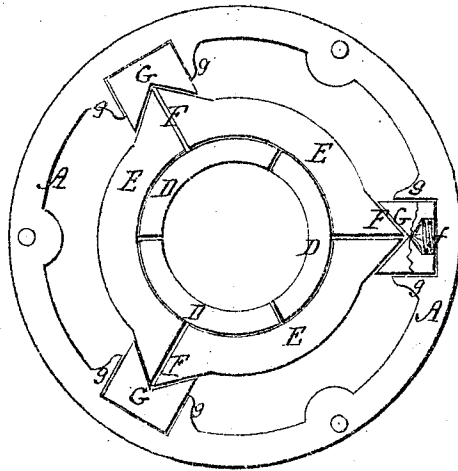
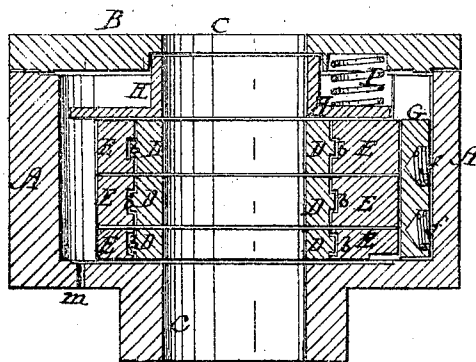


FIG. 2.



WITNESSES.

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PHILLIP W. RICHARDS, OF BOSTON HIGHLANDS, MASSACHUSETTS.

IMPROVEMENT IN STUFFING-BOXES.

Specification forming part of Letters Patent No. 117,927, dated August 8, 1871.

To all whom it may concern:

Be it known that I, PHILLIP W. RICHARDS, of Boston Highlands, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Stuffing-Boxes; and that the following is a full and exact description of the same, reference being had to the accompanying drawing.

This invention relates to stuffing-boxes for the piston-rod of steam-engines, and more particularly to stuffing-boxes constructed according to the invention for which I have already made application for Letters Patent of the United States. My invention relates to certain improvements in stuffing-boxes, too fully hereinafter described to need preliminary statement.

In the accompanying drawing my improvements are illustrated, Figure 1 being a plan view of the interior of the stuffing-box with one of its head-plates removed, and Fig. 2 a transverse section of a stuffing-box constructed according thereto.

A in the drawing represents the stuffing-box, made, in the present instance, of a cylindrical shape, but it may be of other forms, and provided with a removable head, B, adapted by screws to be attached to the box A. This box A, exteriorly, may be constructed in any suitable manner for being secured in position for use, and through the center of both head-plates it is provided with a circular opening, C, for the rod to which it is to be applied. D and E are the sectional rings, composed of two series, arranged within the box A between its head-plates. The two series D and E are concentric, and each series is composed of three distinct rings, with each ring made of three sections, the rings D being the inner and of an internal diameter equal or thereabout to the external diameter of the piston-rod, about which the stuffing-box is to be used, and the rings E the outer. The series of rings D and E are constructed by a rib-and-groove joint, (see Fig. 2 at *b*), to interlock the one ring of the one series with the similar ring of the other series, and so on. The several sections of the series D and E are constructed and arranged the one with the other, and also the separate rings of the inner series, so as to break joints, and thus to obstruct and prevent the passage of steam through them. The several sections of the outer series E are constructed with angular projections F, in the present instance three in number, with the line of split through them. By these angu-

lar projections the ring series E fit within corresponding shaped seats of blocks G, arranged within the box A, and each adapted by springs *f*, two in number, and in different planes, to bear with an elastic and yielding pressure on the ring series E. *g* are ribs on internal periphery of box A for guides to blocks G. To prevent the passage of steam from the piston-cylinder to the outside of stuffing-box it is best that the one ring of the two series the nearer to the end of stuffing-box, by which the stuffing-box is applied to the piston-cylinder, should be made much thinner than the succeeding rings, as it then better arrests, owing to the breaking of joints near the passage of the steam through them to the outer end or face of box A. H, a plate or disk located on one end of sectional ring series D and E, between which and the movable head-plate B are arranged spiral springs I, the purpose of which is to hold the rings in place and to counteract the tendency of the steam to dislocate them between the ends of the box. *m*, a hole in case A, communicating with its interior, the purpose of which is to allow what steam may possibly pass through the sectional rings into case A to escape, as also the water from condensed steam. It also prevents any increase, by the presence of steam, of pressure on the stuffing-box rings to the piston-rod. By arranging two springs to act upon each of the bearing-blocks G the ring series are adapted to adjust themselves to rods tapering in length or otherwise uneven, as they are allowed lateral motion.

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

1. The series of sectional rings E E E and D D D, each constructed with a rib and groove, as described, in combination with the bearing-blocks G G and their springs *f f*, all constructed substantially as and for the purpose set forth.

2. The disk H and bearing-spring I, in combination with the series of sectional rings D D D and E E E, and the blocks G G G, with their springs *f f*, all arranged and operating substantially as set forth.

The above specification of my invention signed by me this 28th day of June, 1871.

PHILLIP W. RICHARDS.

Witnesses:

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