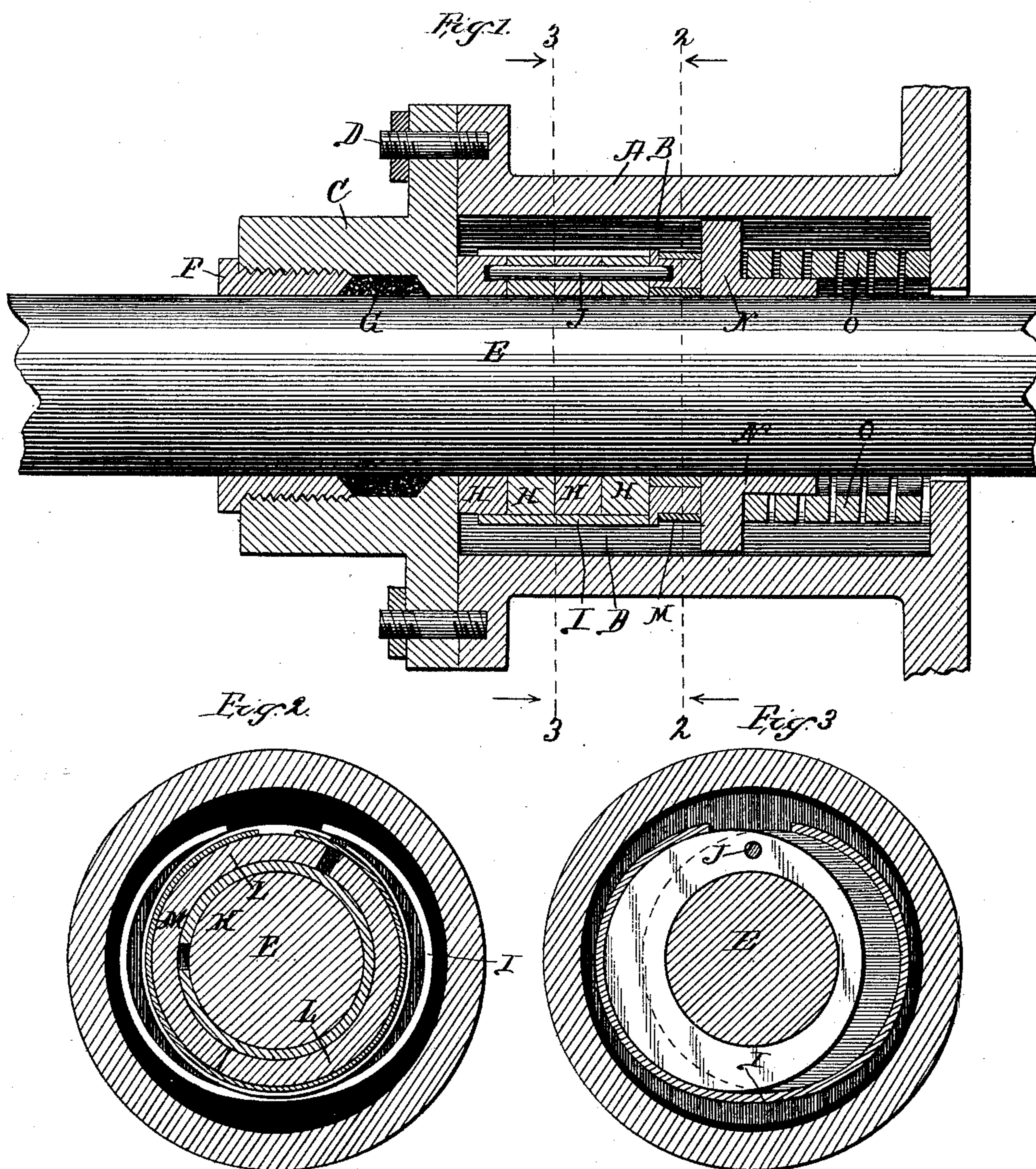


(No Model.)

D. HANNEY.
METALLIC STEAM PACKING.

No. 435,141.

Patented Aug. 26. 1890.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID HANNEY, OF TURNER, ILLINOIS.

METALLIC STEAM-PACKING.

SPECIFICATION forming part of Letters Patent No. 435,141, dated August 26, 1890.

Application filed December 24, 1889. Serial No. 334,889. (No model.)

To all whom it may concern:

Be it known that I, DAVID HANNEY, a citizen of the United States, and a resident of Turner, county of Du Page, and State of Illinois, have invented certain new and useful Improvements in Metallic Steam-Packing, of which the following is a specification.

This invention relates to improvements in metallic steam-packing for piston-rods, valve-stems, and the like, and has for its prime object to dispense with the employment of springs interposed between the packing-rings and the casing, and to have the packing-rings held in close contact with the rod by a spring force independent of the walls of the stuffing box or casing.

A further object is to combine with the packing-rings a metallic packing of such a character as to close the passage between the packing-ring and rod on the side opposite to that to which pressure is applied, and which so renders the joint between the rings steam-tight.

These objects are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a central vertical section through a stuffing-box, showing a metallic steam-packing therein embodying my invention; Fig. 2, a transverse vertical section on the line 2 2 of Fig. 1; and Fig. 3, a similar view on the line 3 3 of Fig. 1, looking in the direction indicated by the arrows.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the drawings, A indicates the stuffing-box of a steam chest or cylinder provided with the usual annular chamber B, surrounding the piston-rod for reception of the packing, the outer end of which chamber is closed by a gland C, secured by bolt D or otherwise to the flange of the stuffing-box. In this case the gland is also recessed around the piston E, except toward the inner end thereof, and screw-threaded for reception of a plug F, fitting snugly upon the piston-rod, between which and the end of the recess is confined a packing G of waste or any other suitable material, such as is commonly used for this purpose.

Within the chamber of the stuffing-box, oc-

cupying about one-half the length thereof, is a series of packing-rings H, eccentric in form and sleeved upon the piston-rod. These rings are encompassed, preferably, by a single flat band-spring I, which, by reason of the peculiar form of the rings, bears only upon the eccentric portion of each ring, but has no contact with the walls of the stuffing-box, depending solely upon the contractile force thereof for binding the rings against the piston-rod, which force will be equally distributed between all the rings upon which it bears. Obviously two or more springs might be employed, according to the number of rings, which may also vary as desired; but preferably only four are employed, as illustrated in the drawings, the eccentric portion of two of which extends to one side of the piston, while the eccentric portion of the other two extends to the diametrically-opposite side of the piston-rod. These rings are maintained in fixed relation to each other, so that they will have no tendency to rotate upon the piston-rod, and thus destroy their effectiveness under the influence of the band-spring, by means of a dowel-pin J, extending through or partially through all of the rings, acting in conjunction with the piston-rod, upon which the rings are sleeved, or a pin-and-socket connection between each pair of rings may be substituted for this dowel-pin. As a result of this construction, each ring will be caused to press or bear tightly against the half of the piston-rod on the side on which the eccentric portion thereof is located under the influence of the spring, which will also cause the wear of the rings to be automatically taken up, and leave the rings in effect suspended freely within the stuffing-box out of contact with the walls thereof and free to move laterally with the piston-rod in its play.

Opposing the end of the innermost ring and fitting snugly upon the piston-rod is a split metallic ring K, the split portion of which lies upon the same side of the piston-rod as the eccentric portion of the ring H, over which fits a sectional ring O, into one section of which projects the end of the dowel-pin, and the whole is bound together tightly upon the piston-rod by a second and smaller band-spring M similar to the spring I. Sleeved upon the piston-rod next these packing de-

• vices is a flanged collar N, between which and the inner end wall of the stuffing-box is confined a powerful coiled spring O under considerable compression when the gland is secured in position. This spring effectually serves to render the joints between the packing-rings steam-tight, while the split and sectional rings serve to seal the small and tortuous passage between the packing-rings and piston-rod on the side opposite to the eccentric portions of the rings.

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

15 In a metallic steam-packing for piston and valve rods, the combination, with the rod and the stuffing-box provided with an annular chamber surrounding said rod, of two or more

eccentric packing-rings sleeved upon said rod at one end of the chamber, a band-spring encircling and bearing upon the eccentric portions of said rings, a split ring sleeved upon the rod opposing the inner eccentric ring, a sectional ring fitting thereon, and a band-spring binding said split and sectional rings together and against the piston-rod, a collar also sleeved upon the piston-rod, opposing the split and sectional rings, and a coiled spring sleeved upon the rod and confined between said collar and the inner end wall of the stuffing-box, substantially as described.

DAVID HANNEY.

Witnesses:

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