

WILLIAM H. HOLLAND.

Improvement in Metallic Stuffing Boxes.

No. 124,439.

Patented March 12, 1872.

Fig. 1

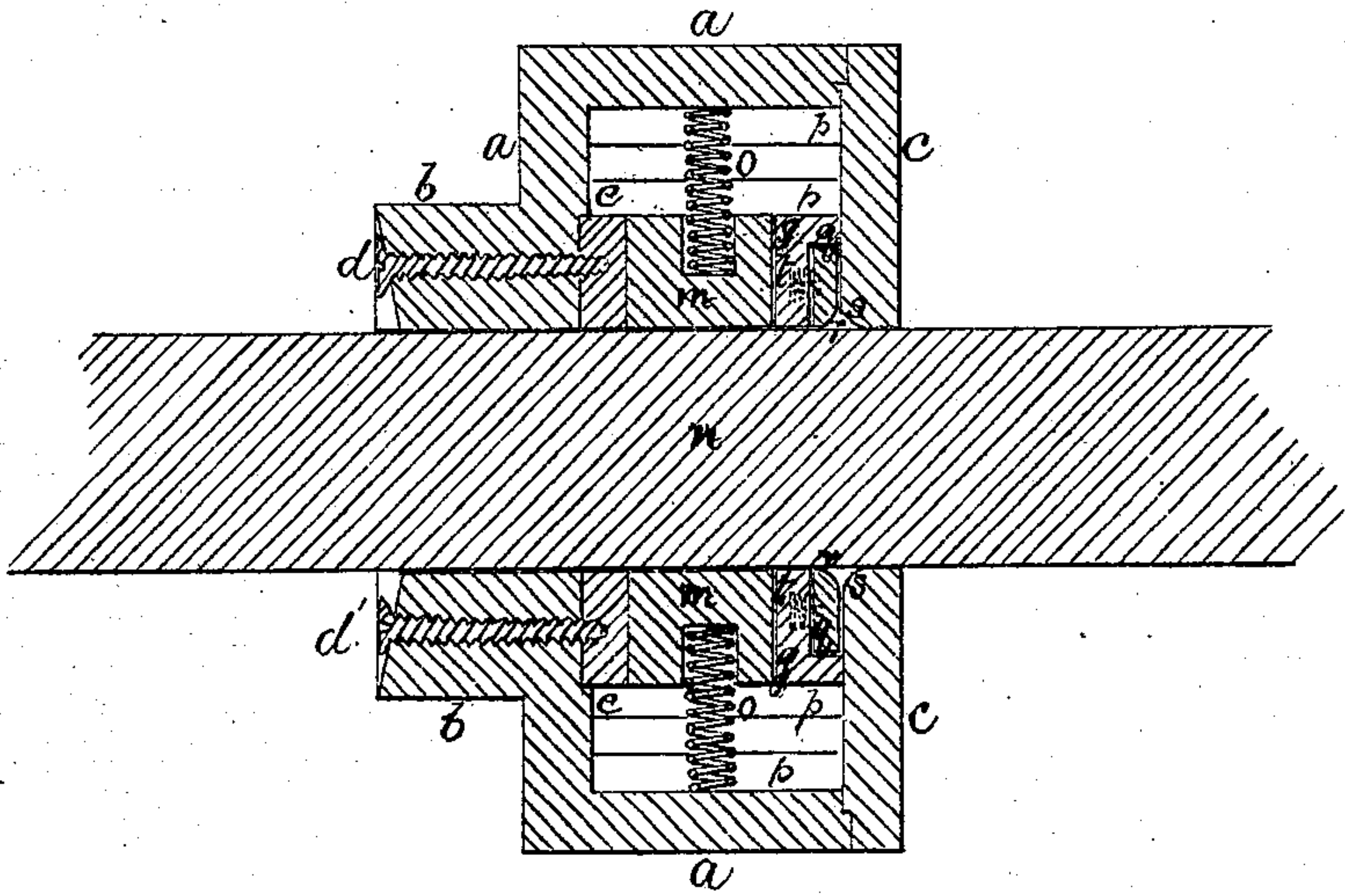


Fig. 2

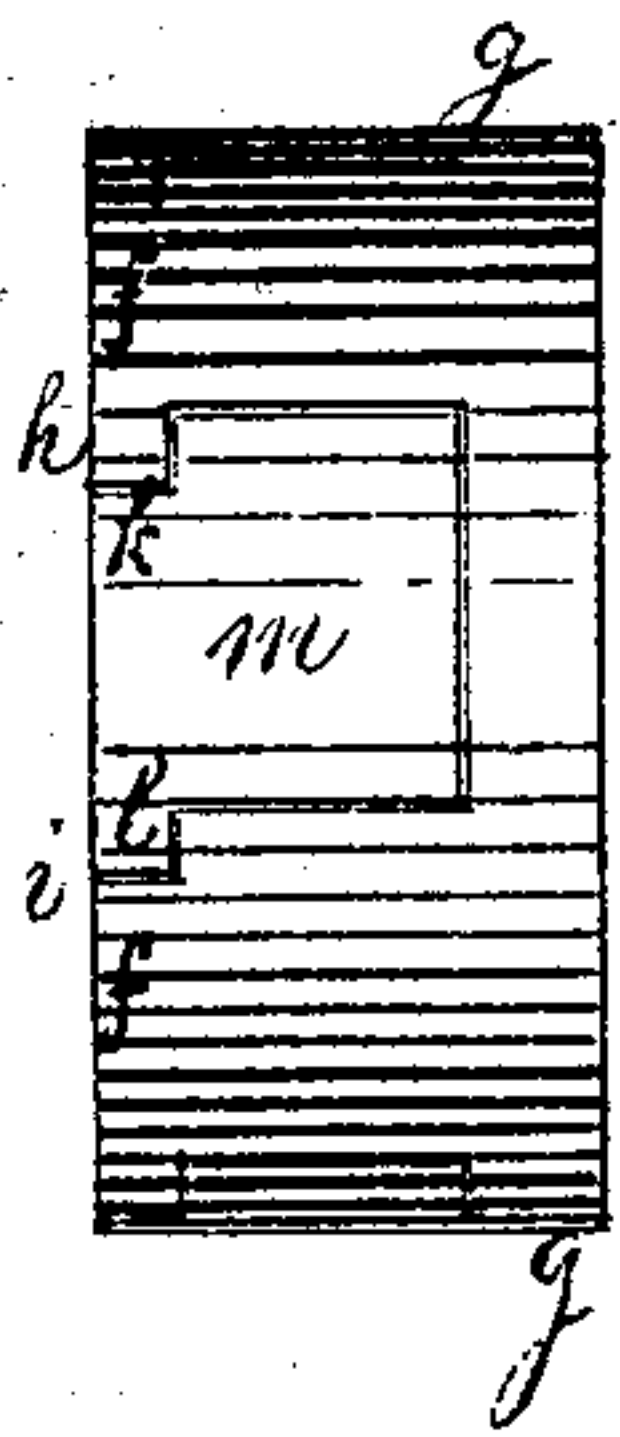


Fig. 3

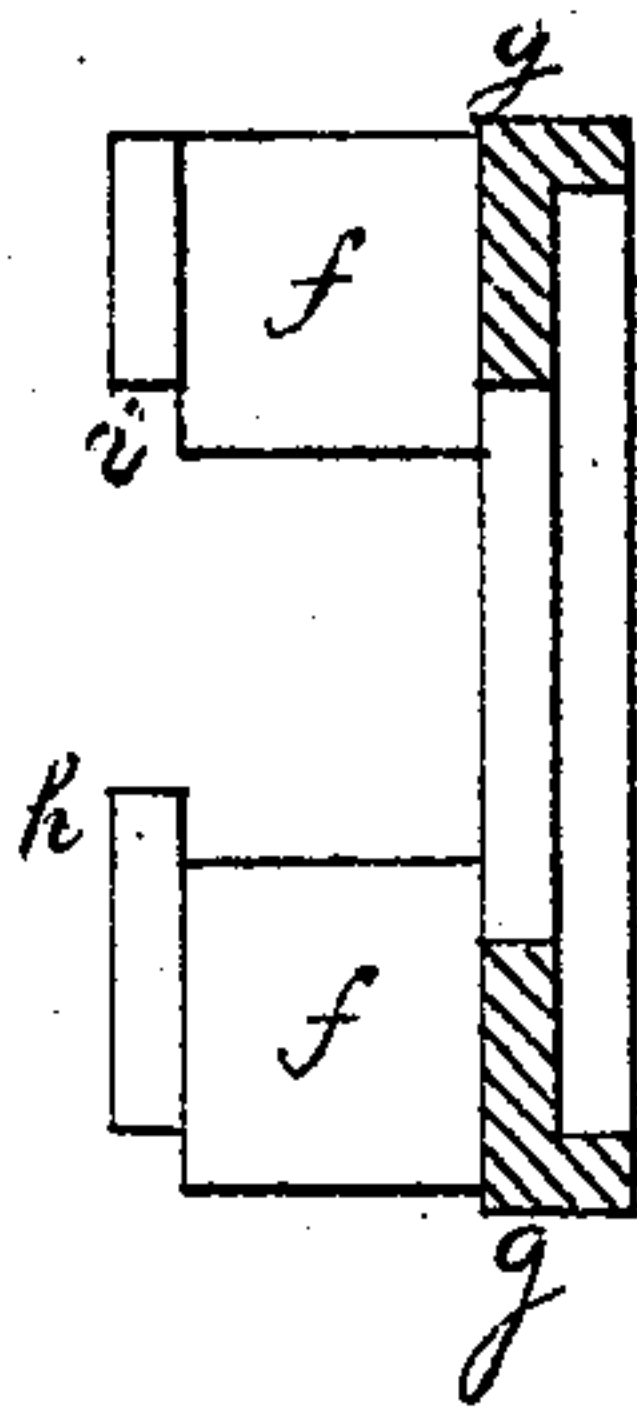
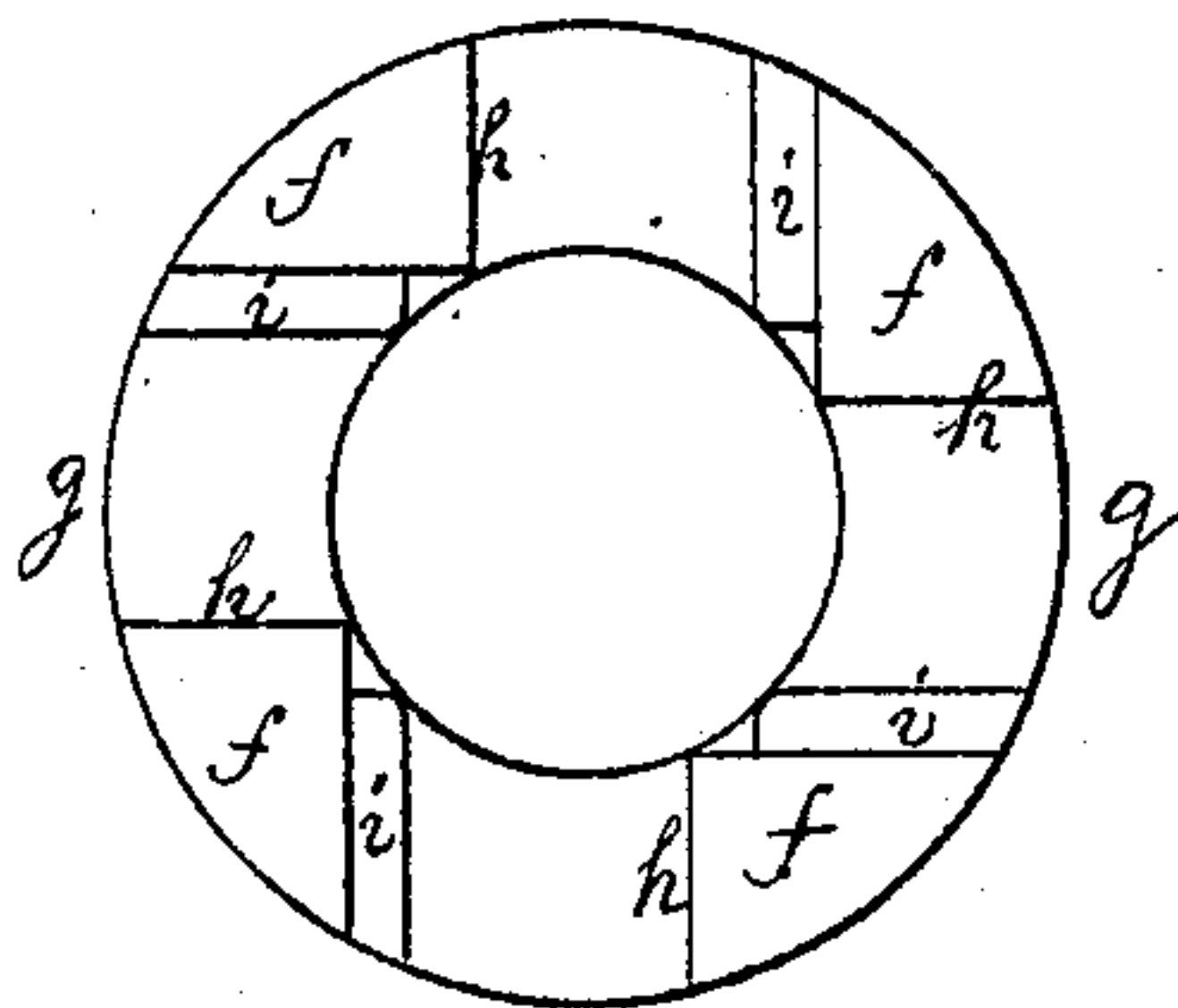


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. HOLLAND, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN METALLIC STUFFING-BOXES.

Specification forming part of Letters Patent No. 124,439, dated March 12, 1872.

SPECIFICATION.

I, WILLIAM H. HOLLAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Metallic Stuffing-Boxes, of which the following is a specification:

Figure 1 of the drawing is a central vertical longitudinal section of my improved metallic stuffing-box. Fig. 2 is an exterior view of one portion of the same, and Fig. 3 is a central vertical longitudinal section through the above portion, with the blocks removed. Fig. 4 is a front view of the portion represented by Fig. 3.

My present invention relates to certain new and useful improvements in metallic stuffing-boxes, and has for its main object the simplification and perfecting of a previous invention of the same nature made by me. My improvements consist in so arranging the devices connected with a stuffing-box, to be more fully described in due course, as to require the use of but one ring, formed with segmental pieces, instead of two as in my previous invention, and in so operating the devices that any wear on the rod or other portions of the stuffing-box is immediately taken up, and any leakage between or over the joints of the several devices is at all times prevented.

a a a in the drawing represent the outer case of a stuffing-box, formed with a gland, *b b*, and provided at the back with a cover, *c c*, whose aperture is formed with an inner beveled edge, *s s*. Attached by screws *d d'*, or otherwise, to the inside of the front of the case *a a a* is a stationary friction-ring, *e e*, that screws into or is otherwise affixed to wedge or V-shaped projections *f f f f* formed on a ring, *g g*. Each of these wedge-shaped projections *f f f f* is formed on its front with a flange, *h*, on one side and a rabbet, *i*, on the other side. The flange, *h* fits over a rabbet, *k*, and the rabbet *i* receives a flange, *l*, formed on the front of movable blocks *m m m m*, which are arranged to slide between the wedge-shaped projections *f f f f* and break joints with them, and being operated so as to hug tightly against the rod *n* at all times, and to take up any wear or unevenness on it by means of springs *o o* fitting into the back of the adjustable blocks *m m m m* and bearing in recesses *p p p p*, formed on the inner periphery of the case *a a*

a. The back of the ring *g g* is countersunk, so as to receive an outer adjustable packing-ring, *q q*, the aperture of which is formed with a beveled edge, *r r*, between which and the beveled edge *s s* of the aperture of the cover *c c* any kind of packing is inserted and constantly pressed against the rod *n* so as to take up any wear upon it by the action of springs *t t*, arranged in the back of the ring *g g* and operating against the face of the packing-ring *q q*.

The operation of my improvements is as follows: By permanently attaching the friction-ring *e e* to the inside of the case *a a* and to the wedge-shaped projections *f f f f* the pushing of the ring *e e* away from the case *a a a*, by the pressure of the steam, &c., which would, consequently, cause a leakage between or over them, is prevented. Moreover, by making the friction-ring *e e* stationary and affixing it to the projections *f f f f* the blocks *m m m m* are steadily held and allowed to travel in and out between it and the ring *g g*, and the friction on the blocks *m m m m* is greatly lessened. By arranging the blocks *m m m m* with the flanges *l* and rabbet *k* fitting upon and under the flange *h* and rabbet *i* so as to slide in and out on the wedge or V-shaped projections *f f f f* affixed to the ring *g g*, it will readily be seen that the joints are so completely covered by the ring *e e* and the lapping of the flanges *h* and *l* and rabbets *k* and *i* that the escape of the steam, &c., is entirely prevented, and the blocks *m m m m*, being adjustable and operated upon by the pressure of the springs *o o* at their backs, are at all times hugged tightly to the rod *n*, so that any wear or unevenness of the rod *n* is at once taken up and the escape of the steam, &c., around the rod *n* is obviated. The beveled edges *r r* and *s s* of the apertures of the adjustable packing-ring *q q* and the cover *c c* are for the purpose of receiving a hemp, cloth, or other packing, or metallic packing-rings, for packing the rod *n* between the ring *q q* and the cover *c c* to prevent the possibility of the escape of steam, &c., through the joints, thus rendering the packing more secure and allowing for its wear, and also to allow the reception of metallic rings until they are fitted to the rod *n*. Furthermore, by the use of the springs *t t* between the adjustable packing-ring *q q* and the ring *g g*, the unevenness of old rods, caused by the wear upon them, is taken up by the

packing tightly impinging at all times between the beveled edges *r r* and *s s* of the ring *q q* and cover *c c* and the escape of any steam, &c., that may by possibility occur through any of the joints of other portions of the stuffing-box, is prevented. By arranging the packing-ring *q q* in the back of the ring *g g*, between it and the cover *c c*, on the opposite end of the stuffing-box from where the steam is admitted, it is not subjected directly to the injurious effect of the steam, &c., upon it, and, consequently, is less liable to be worn by the action of the steam, &c., and it also serves to prevent any over escape of the steam, &c., between the joints.

Having thus fully described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. The adjustable block *m*, formed with a flange, *l*, and rabbet *k*, combined with the ring *g*, formed with projections *f* having rabbets *i* and flanges *h*, and with spring *o*, all as specified.

2. The ring *g*, formed with the beveled aperture *r*, combined with the cover *c* having the beveled aperture *s*, and with the springs *t*, all as described.

3. The ring *g*, formed with the projections *f*, formed with flanges *h* and rabbets *i*, as set forth.

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

WM. H. HOLLAND.

Witnesses:

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CARROLL D. WRIGHT.