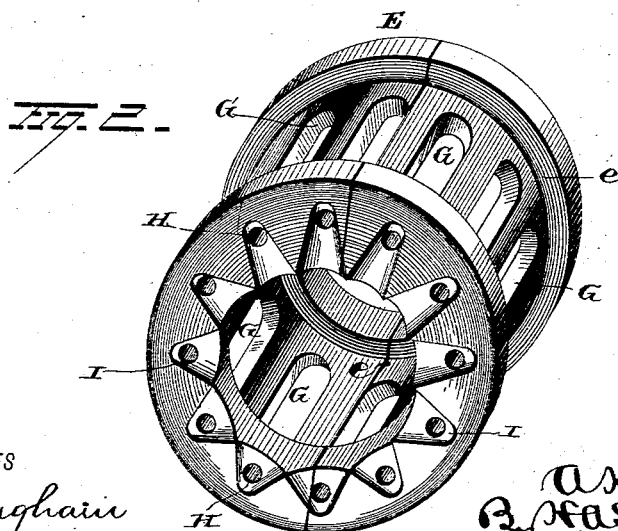
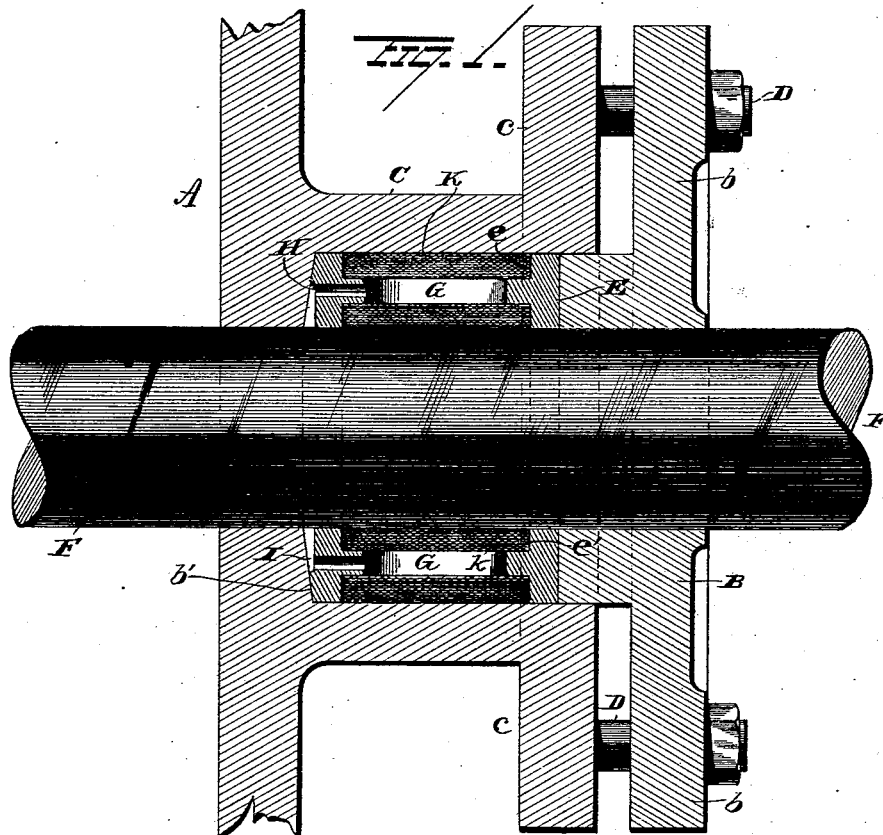


Patented June 29, 1886.



Ed Nottingham  
H. E. Jones

INVENTOR  
A. H. Clark.  
B. H. Seymour.  
Attorney

# UNITED STATES PATENT OFFICE.

ALEXANDER H. CLARK, OF FOND DU LAC, WISCONSIN.

## STUFFING-BOX.

SPECIFICATION forming part of Letters Patent No. 344,349, dated June 29, 1886.

Application filed April 23, 1886. Serial No. 199,889. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER H. CLARK, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Stuffing-Boxes; 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 appertains to make and use the same.

My invention relates to an improvement in stuffing-boxes.

On March 9, 1886, Letters Patent No. 337,663, entitled "stuffing-boxes," were granted me, in which a longitudinally-movable packing-cylinder was shown and described, having grooves leading from its end toward the cylinder to slots in its periphery for conducting steam-pressure to the outside of the packing within the packing-cylinder, for holding the packing in snug contact with the piston-rod.

The object of my present invention is to provide a packing-cylinder, in connection with a stuffing-box and gland, which will prevent the escape of steam between its periphery and the interior surface of the gland, and which will admit steam-pressure between rings of packing located, respectively, on the periphery of the packing-cylinder and around the piston-rod passing through the packing-cylinder, thereby causing the pressure of steam within the cylinder to automatically form a steam-tight joint around the piston-rod at the cylinder-head.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section through the center of the piston-rod, and Fig. 2 is a detached view of the packing-cylinder.

A represents the cylinder-head, having an outwardly-projecting stuffing-box, C; or the cylinder-head might be chambered out to answer the purpose of the box C.

B represents the gland, adapted to slide within the bore of the box C, and provided with a flange, *c*. Draw-bolts D extend through the flange *c*, and through a corresponding flange, *b*, on the end of the gland, by means

of which the gland B is forced longitudinally within the box C; or the gland B might be screw-threaded and engage a female thread within the box C.

The packing-cylinder E is preferably formed in two half-sections, and is adapted to slide longitudinally within the bore of the box C, and its end toward the cylinder is adapted to rest in snug contact with an annular seat, *b'*, within the box C. The contact of the end of the cylinder E with the seat *b'* is assured by the pressure of the end of the gland thereon, which may be increased to any desired degree.

The face of the packing-cylinder E is provided with an annular recess, *e*, which may have a greater or lesser width, but preferably extends to within a short distance of each end. The interior of the said cylinder E is also provided with an annular recess, *e'*, preferably corresponding to the interior recess, *e*.

The portion of the cylinder-shell which lies between the recesses *e* and *e'* is provided with a series of elongated slots, G, extending through the shell from recess to recess, and a series of perforations, H, extend through from the inner end of the cylinder E to the ends of the slots G.

A series of channels, I, are formed in the end of the packing cylinder, leading from the ends of the perforations H to the central bore, gradually increasing in size as they approach the bore.

Rings of packing K and *k*, either of a textile or metallic nature, are secured in the recesses *e* and *e'*, respectively.

When the end of the packing-cylinder is pressed in snug contact with its seat, the steam which escapes past the piston-rod in the cylinder-head is prevented from passing outwardly onto the periphery of the packing-cylinder to any great extent, and is conducted along the channels I, through the perforations H, into the slots G between the two rings of packing, where its pressure is exerted outwardly on the packing K and inwardly on the packing *k*, rendering the joint between the packing-cylinder and stuffing-box steam-tight, and also holding the packing in snug contact with the piston-rod.

It is evident that slight changes might be

resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but

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

1. A packing-cylinder for a stuffing-box, the said packing-cylinder having an internal and external ring of packing, and a series of channels adapted to conduct steam between the two rings of packing, substantially as set forth.

2. The combination, with a stuffing-box and gland, of a packing-cylinder adapted to rest in snug contact with an annular seat in the stuffing-box, the said packing-cylinder having an inner and outer ring of packing and a series of channels leading from the edge of the piston-rod bore to the space between the rings of packing, substantially as set forth.

3. In a stuffing-box, a packing-cylinder provided with inner and outer recesses adapted to receive packing, a series of openings connecting the two recesses, and steam-conduits

leading from the said openings to the edge of the piston-rod bore on the inner end of the packing-cylinder, substantially as set forth.

4. In a stuffing-box, a packing-cylinder provided on its inner end with a series of perforations communicating with openings in the shell of the cylinder and channels leading from the ends of the perforations to the edge of the bore, the said channels gradually increasing in size as they approach the bore, substantially as set forth.

5. The combination, with a stuffing-box, a packing-cylinder having external and internal rings of packing, and a series of channels adapted to conduct steam between the two rings of packing, of a gland and devices for forcing in the gland into contact with the packing-cylinder, substantially as set forth.

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

ALEXANDER H. CLARK.

Witnesses:

JAMES T. GREENE,  
JACOB CLARK.