

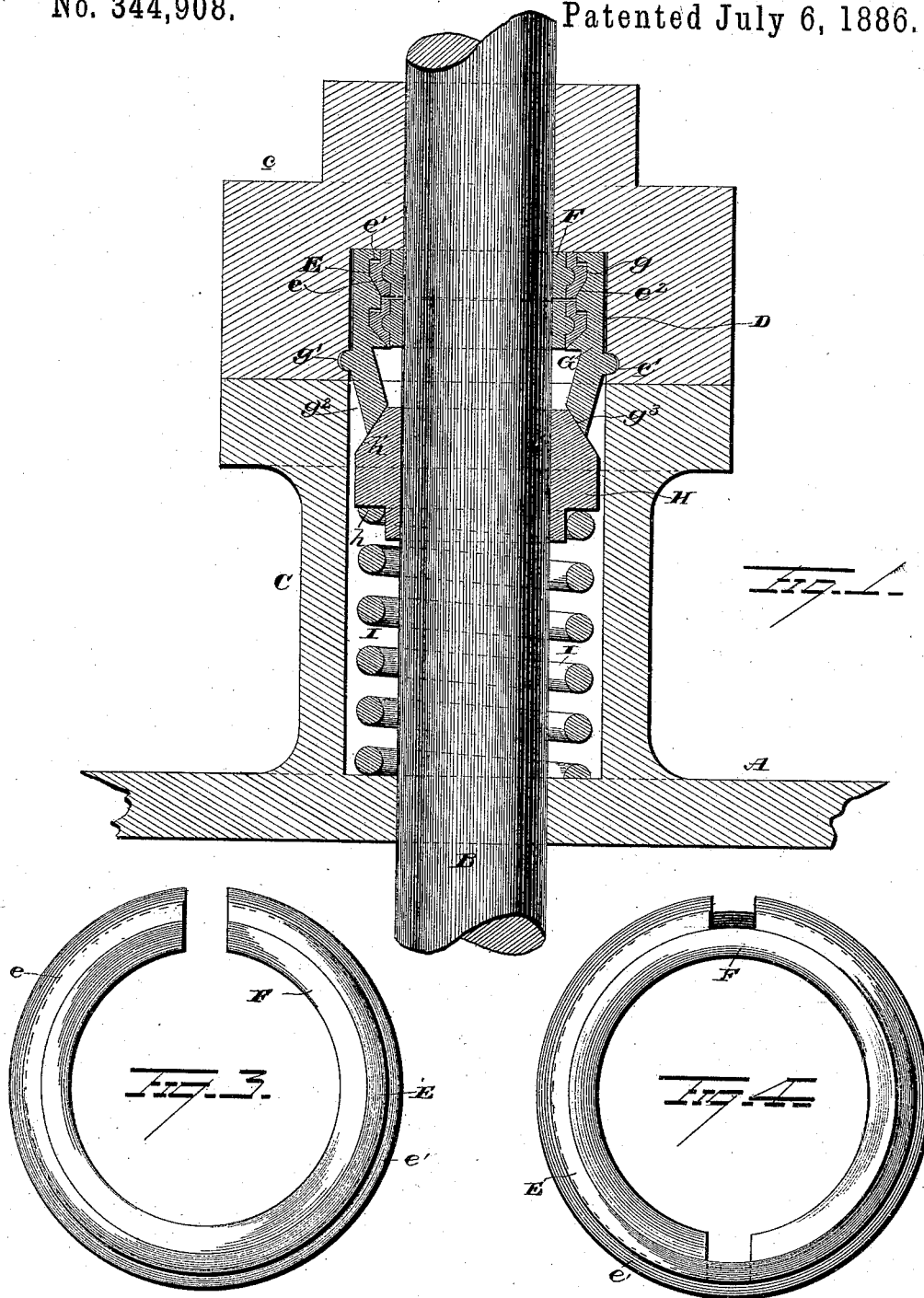
(No Model.)

2 Sheets—Sheet 1.

C. C. JEROME.
ROD AND PISTON PACKING.

No. 344,908.

Patented July 6, 1886.



WITNESSES
E. A. Nottingham
N. E. Jones

INVENTOR
C. C. Jerome
By *H. A. Seymour* Attorney

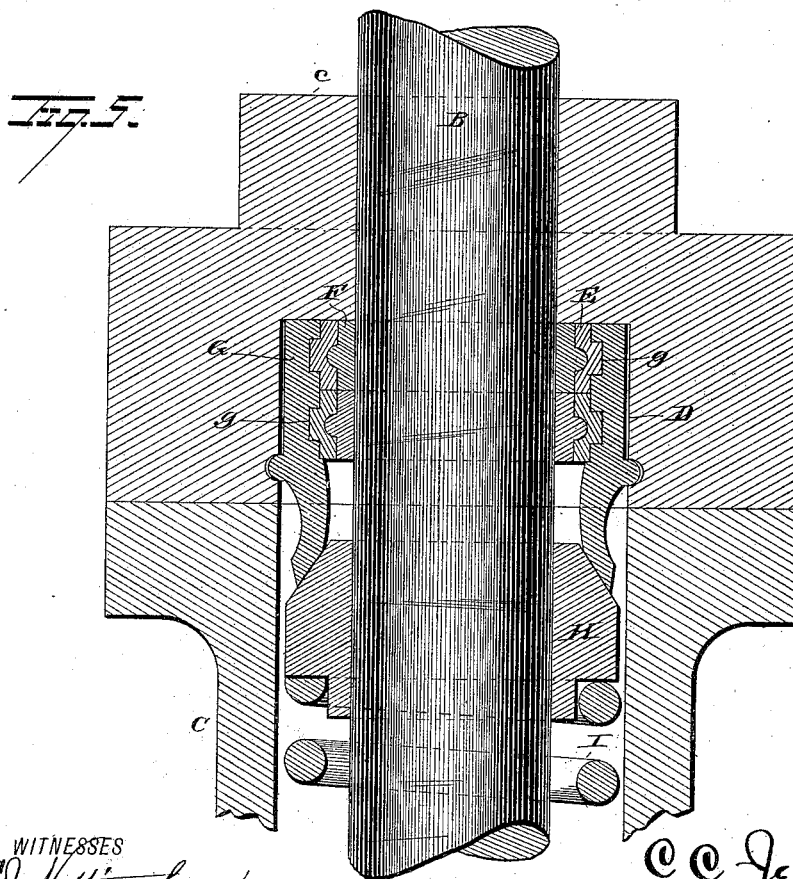
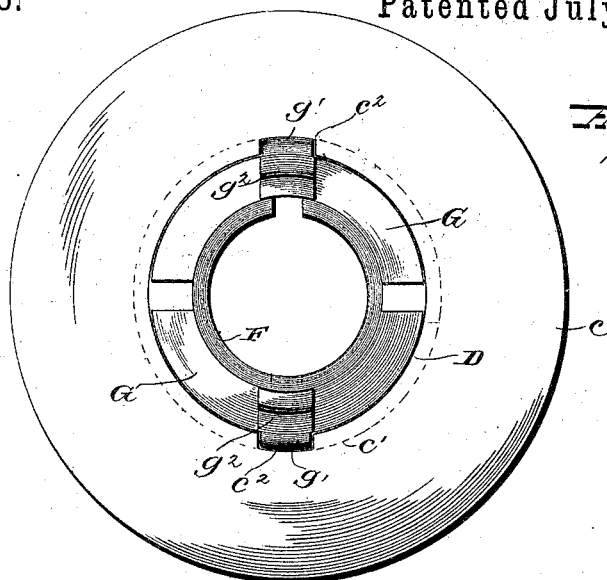
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UNITED STATES PATENT OFFICE.

CHARLES C. JEROME, OF CHICAGO, ILLINOIS.

ROD AND PISTON PACKING.

SPECIFICATION forming part of Letters Patent No. 344,908, dated July 6, 1886.

Application filed May 14, 1886. Serial No. 202,172. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. JEROME, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rod and Piston Packings; 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 rod or piston packing.

Hitherto when a reciprocating rod has become worn hollowing or out of "true" it has been found almost or quite impossible to keep it effectually packed, and particularly so by means of metallic packing. It has further been found more or less difficult to secure a packing-ring of the form hitherto employed which will admit of taking up the desired amount of wear and at the same time present an extended and steam-tight bearing completely around the piston and against the face of the socket in the gland.

The object of my present invention is to provide a packing-ring consisting of an inner and outer section adapted to break joints with each other and to be compressed.

A further object is to provide a set of spring-actuated compressors which shall automatically compress the packing-rings into close contact with the rod or piston and into contact with the face of the gland-socket.

A further object is to provide means for packing joints about a reciprocating rod against the passage of steam, air, or gas which shall be effective, inexpensive, and convenient.

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 end of a steam-chest or valve-chamber, showing the application of the packing to a valve-stem. Fig. 2 is a detached view of the face-plate or gland and compressor-sections adapted to fit therein, and Figs. 3 and 4 are detached views of the packing-ring. Fig. 5 represents a modified construction of ring and compressor-section.

A represents the head of a steam-chest or valve-chamber, through which the valve-stem B extends. C is the stuffing-box, secured firmly to the head A around the valve-stem B, and *c* is the gland which secures the packing within the stuffing-box. The gland *c* is fitted steam-tight to the end of the box C, and is adapted to be secured thereto by draw-bolts or other suitable means. It is also provided with a socket or cylindrical recess, D, which corresponds in diameter to the recess in the box C, and forms, when in position, a continuation of the same.

The packing-ring consists of an outer metallic section, E, of brass, for example, and an inner metallic section, F, of Babbitt or other soft metal. The outer section, E, is provided on its inner face with an annular groove, *e*, and on its outer face it is rabbeted out on the edge toward the gland *c*, as shown at *e'*, and is beveled on its opposite edge, as shown at *e''*. The inner section, F, of soft metal, is molded within the section E, the metal filling the groove *e*, and having a thickness which will admit of the ring being cut out and faced to fit any sized rod of the class for which it is intended. The ring thus constructed is cut through both sections, as shown in Fig. 3, a short piece being taken out to admit of the ring being closed to take up wear as it occurs. The inner section is then slipped around into the position shown in Fig. 4, which breaks the joints and yet leaves the rings free to be compressed.

One or more rings of the above construction, preferably two, are placed on the rod or valve-stem B within the socket D of the gland *c*. A pair of compressor-sections, G, are adapted to fit within the socket D, between the packing-rings and wall of the socket, and are provided with grooved faces *g*, adapted to conform to the outer faces of the packing-rings; but the grooves are made a little wider than the rings, in order that there may be room for the rings to slide slightly toward the end of the socket D without engaging the abrupt walls of the groove *g*. The compressor-sections G are each somewhat less than half the periphery of the rings in cross-section, to admit of their closing to take up the wear, and are each provided with a rounded elongated lug, *g'*, on its outer face, which is adapted to

work loosely in an annular groove, c' , formed in the wall of the socket D. They are each further provided with an arm projection, g^2 , having a beveled face, g^2 , adapted to engage the inclined face of the follower H. The compressor-sections G are inserted in the socket D by means of channels c^2 , which lead from the edge of the mouth of the socket up to the groove c' , and are adapted to receive the rounded elongated lugs g' . The sections G, when in position, are hinged in the groove c' , and are free to be rocked toward and away from the rod or valve-stem. The follower H is adapted to slide freely on the rod or valve-stem B within the stuffing-box, and is held in yielding contact with the arms g^2 by means of a stiff spiral spring, I, inserted in the box between the head of the valve-chamber and the follower. The end of the follower toward the valve-chamber has its edge rabbeted out to form a seat for the spring I, as shown at h , and the end in contact with the arms of the compressor-sections is beveled, as shown at h' , the said beveled portion of the follower being adapted to engage the beveled faces of the arms g^2 . Thus when the gland c is secured in position on the stuffing-box gland, with the packing-rings and compressor-sections in position within the gland, the pressure of the follower H, tending to spread the arms g^2 on the compressor-sections, will, because of the fulcruming of the compressor-sections in the groove c' , by means of the rounded lugs g' , force the opposite ends of the compressor-sections into contact with the packing-rings, closing them snugly around the rod or valve-stem. Furthermore, because of the inclined walls of the groove g in engagement with the inclined faces c^2 of the rings, and the play allowed the rings within the grooves g , the lateral pressure of the compressor-sections against the rings will at the same time tend to slide the rings along the rod or valve-stem into snug contact with the end wall of the socket in the gland c , and the escape of steam between the end of the ring and the end wall of the said socket will be thereby effectually prevented.

As the valve-stem, rod, or soft-metal ring becomes worn, the ring-sections will be closed, and so free and prompt is the adjustment of the ring to the stem or rod that it will adjust itself to different portions of the same stem or rod, as they are brought in engagement therewith by the longitudinal sliding motion of the rod.

In the modified construction of ring and compressor-section shown in Fig. 5 the edges of the ring are both rabbeted out in a manner similar to that shown on the one rabbeted edge of the ring hereinbefore described, and the groove g is made to conform to the shape of the ring. The pressure of the ring against the end wall of the socket is in this construction due to the tension of the spring which actuates the follower, and, while it serves the purpose quite well in ordinary cases, is not con-

sidered as effective under all circumstances as the beveled-edge construction.

The compressor-sections may consist of three or more, instead of two, and they may be constructed of much less width than shown, each reaching not more than a quarter of the distance around the rings, or even less than that, and one or more than two rings might be employed in the place of two; or segmental packing-rings of any desired number might be used. It is evident, also, that numerous other slight changes might be resorted to in the form and arrangements 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. In a rod or piston packing, a split ring consisting, essentially, of an exterior metallic section having a groove in its inner surface and an interior section of softer metal having a rib on its outer surface, adapted to enter the groove in the outer section, substantially as set forth.

2. In a rod or piston packing, a split ring consisting, essentially, of an exterior section and an interior section, one of said sections having a rib constructed to engage a groove in the adjacent face of the other section, the said inner section being free to turn or slide independently of the outer section, substantially as set forth.

3. In rod or piston packing, the combination, with a packing-ring adapted to surround a rod within a gland, of compressor-sections fulcrumed within the gland or stuffing-box, and adapted to compress the packing-ring into contact with the rod, substantially as set forth.

4. In rod or piston packing, the combination, with a packing-ring adapted to surround a rod within a gland and compressor-sections fulcrumed within the gland, of a follower adapted to engage the ends of the compressor-sections and force the opposite ends of the said sections into contact with the packing-ring, substantially as set forth.

5. In rod or piston packing, the combination, with a packing-ring provided with an inclined face, of compressor-sections provided with inclined faces adapted to engage the ring and force it simultaneously in both a lateral and longitudinal direction, substantially as set forth.

6. In a rod or piston packing, the combination, with a packing-ring provided with a beveled edge, of compressor-sections provided with grooves adapted to loosely conform to the rings and force them into snug contact with the rod and gland, substantially as set forth.

7. In rod or piston packing, the combination, with the beveled-edged packing-rings adapted to surround the rod within the gland,

of the compressor-sections fulcrumed within the gland and adapted to be operated by a spring-actuated follower, substantially as set forth.

5 8. In rod or piston packing, the combination, with the packing-rings secured on the rod within the gland and the spring-actuated follower, of the compressor-sections provided with the hinge-lugs adapted to work in a
10 groove in the wall of the gland-socket, substantially as set forth.

9. The combination, with the stuffing-box gland secured to the end of the valve-cham-

ber or steam-chest, of the face-plate or gland secured thereto and provided with an annular 15 groove shaped to receive the hinge-lug on the compressor-sections, and with channels leading from the end of the gland to the groove, substantially as set forth.

In testimony whereof I have signed this 20 specification in the presence of two subscribing witnesses.

CHARLES C. JEROME.

Witnesses:

F. R. VAN SLYKE,

F. D. SOPER.