

UNITED STATES PATENT OFFICE.

FELIX McCARTHY, OF POTTSTOWN, PENNSYLVANIA.

PACKING.

No. 842,230.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FELIX McCARTHY, a citizen of the United States, residing at Pottstown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Packing; 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 new and useful improvements in packing, and more particularly to that class adapted to be used in connection with steam-boilers, low-pressure engines, water-pumps, and the like; and my object is to provide a metallic packing which will prevent the passage of steam, &c., through the glands around the shafts.

A further object is to provide a packing of this class whereby the same will automatically adjust itself when the same becomes worn.

A still further object is to provide a packing that will not become broken incident to use.

Other objects and advantages will be hereinafter referred to, and more particularly pointed out in the claims.

In the accompanying drawings, which are made a part of this application, Figure 1 is a longitudinal sectional view showing my improved packing in section as applied upon a shaft and located within the gland. Fig. 2 is a perspective view of the packing disposed around a shaft with certain parts of the packing removed. Fig. 3 is a detail perspective view of one portion of the metallic keeper removed from over the packing, and Fig. 4 is a perspective view of one section of the packing.

Referring to the drawings, in which similar reference-numerals designate corresponding parts throughout the several views, 1 indicates a gland or casing through the central portion of which is disposed a bore 2, through which is adapted to take a shaft 3. The gland is provided upon one side with a circular housing 4, the opening in which is larger than the bore 2 and adapted to loosely receive my improved form of packing.

That portion of the gland within the housing 4 and immediately around the bore 2 is provided with a collar 5, against which is adapted to rest one end of my improved metallic packing. The packing proper is preferably

formed of a plurality of segmental bands 6, 7, and 8, the segments 7 and 8 being narrower than the segment 6 and disposed at opposite ends thereof, the inner diameter of the segments when assembled together being less than the diameter of the shaft 3, so that when the segments are assembled around the shaft each segment will be slightly spaced from the next succeeding segment, as best shown at 9 in Fig. 2 of the drawings. It will also be seen that when the several bands are properly disposed around the shaft the spaces between the segments of the bands 7 and 8 will be staggered with relation to each other and also with relation to the spaces in the band 6, thereby preventing any possibility of steam passing through the packing.

The segments of the several bands are held compactly together around the shaft 3 by means of a keeper 10, which is preferably constructed of brass and formed in two sections, the inner periphery of the sections when assembled being of less diameter than the outer periphery of the assembled bands, so that a space will be formed between the two sections of the keeper. The meeting face of each of the sections of the keeper is provided with a tongue 11, which is adapted to be seated in a corresponding groove 12 in the opposite meeting edges of each section, thereby more securely locking the two sections of the keeper together. The ends of the keeper 10 are provided with depending flanges 13, which are adapted to engage shoulders 14, formed by reducing the outer ends of the segments 7 and 8, the object of the flanges being to hold the bands 7 and 8 snugly against the ends of the band 6 and prevent longitudinal separation thereof.

The segmental bands 6, 7, and 8 are prevented from rotating independently of the keeper 10 by providing each of the bands with registering channels 15, 16, and 17, said channels being disposed in the outer periphery of the bands and adapted to receive a locking-bar 18, carried by one section of the keeper 10, so that when the keeper is properly disposed around the bands the locking-bar 18 will be disposed in the registering channels and hold the band from independent movement with respect to the keeper.

The sections of the keeper are held in position over the segmental bands by means of springs 19, which are disposed in circumferential grooves 20 around the periphery of the keeper 10, and in addition to holding the sec-

tions of the keeper over the bands said springs serve to draw the sections of the keeper and segments of the bands together as the innerface of the segments become worn, there-
 5 by keeping the segments firmly in touch with the periphery of the shaft 3.

The packing is held within the housing 4 by means of a cap 21, said cap being provided with an inwardly-projecting ledge 22, which
 10 snugly fits within the bore of the housing and extends over the end of the packing, so that when used on low-pressure engines the air cannot be drawn into the vacuum end of the gland.

15 It will now be seen that I have provided a packing which will effectually prevent steam passing through the gland around the shaft and also prevent the air from being drawn into the vacuum end of the gland. It will
 20 further be seen that I have provided a packing which will automatically adjust itself around the shaft as the packing becomes worn.

What I claim is—

25 1. A packing of the class described comprising the combination with a gland having a collar therein and a shaft extending there- through; of a packing comprising a plurality of segments adapted to be disposed around
 30 said shaft in series, the meeting ends of each series of segments being spaced apart, a shoulder formed on a portion of said segments, a keeper adapted to surround said segments, said keeper being formed in sections, a
 35 tongue at one edge of each section and adapted to interlock with a groove in the opposite section, the meeting edges of said sections being spaced apart, means to hold said keeper in position around said segments and direct
 40 pressure thereagainst whereby the segments and keeper will be automatically contracted when worn, a cap for the outer end of said gland and a ledge on said cap adapted to sur- round one end of the packing.

45 2. A packing of the class described comprising a gland, a housing on said gland, a collar surrounding an opening in said gland, a shaft disposed through said opening, a plu- rality of segments grouped in series around
 50 said shaft, a portion of the series of segments having shoulders, a keeper for said segments,

said keeper being formed in sections and hav- ing flanges at each end thereof adapted to en- gage the shoulders on the segments, the meet- ing edges of said segments and keeper being 55 spaced apart and staggered with relation to each other, a tongue upon each section of said keeper adapted to enter a groove in the opposite keeper, springs disposed around said keeper adapted to draw the sections of the 60 keeper and segments together when worn and means to close the end of said housing.

3. In a packing the combination with a gland and a shaft disposed therethrough; of a plurality of segments disposed around said 65 shaft and within the gland, shoulders on a portion of said segments, a keeper for said segments, said keeper being formed in two sections, flanges at each end of said sections adapted to engage said shoulders and hold 70 the segments into coöperation with each other, the meeting edges of the keeper-sec- tions and the segments being spaced apart and the meeting-points staggered with relation to each other, springs disposed around the 75 keeper and adapted to exert tension thereon whereby the segments will be held into en- gagement with the shaft and the wear thereon compensated for and means to retain the seg- ments and keeper within the gland. 80

4. In a packing, the combination with a shaft, of a plurality of segments disposed around said shaft: shoulders on the end seg- ments, a keeper for said segments said keeper being formed in two sections, flanges at each 85 end of said sections adapted to engage said shoulders and hold the segments together, means disposed around said keeper to hold the same in engagement with the segments, a locking-bar extending longitudinally of the 90 keeper and seated in the flanges thereon and adapted to enter alining channels in the seg- ments whereby rotation of the segments in- dependently of the keeper will be prevented.

In testimony whereof I have signed my 95 name to this specification in the presence of two subscribing witnesses.

FELIX McCARTHY.

Witnesses:

A. J. BERNHART,
 L. B. KEIM.