

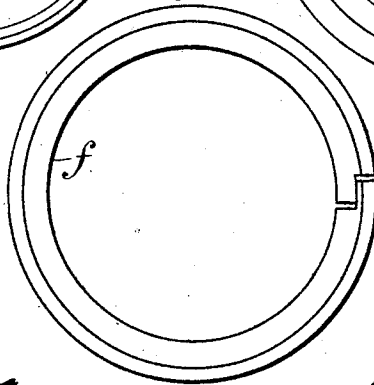
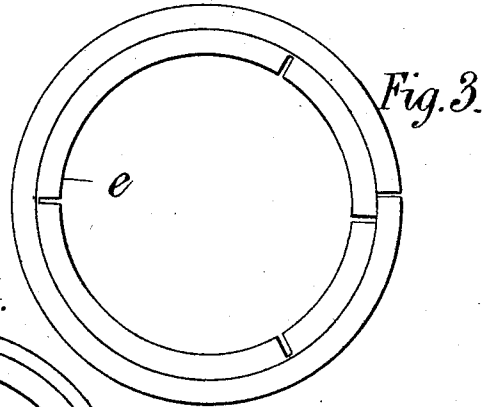
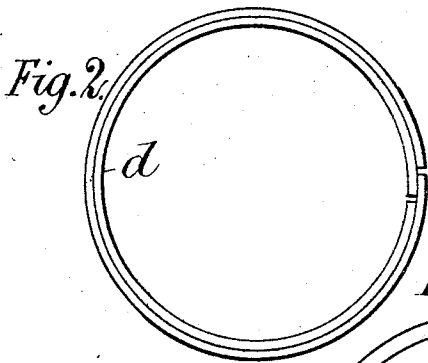
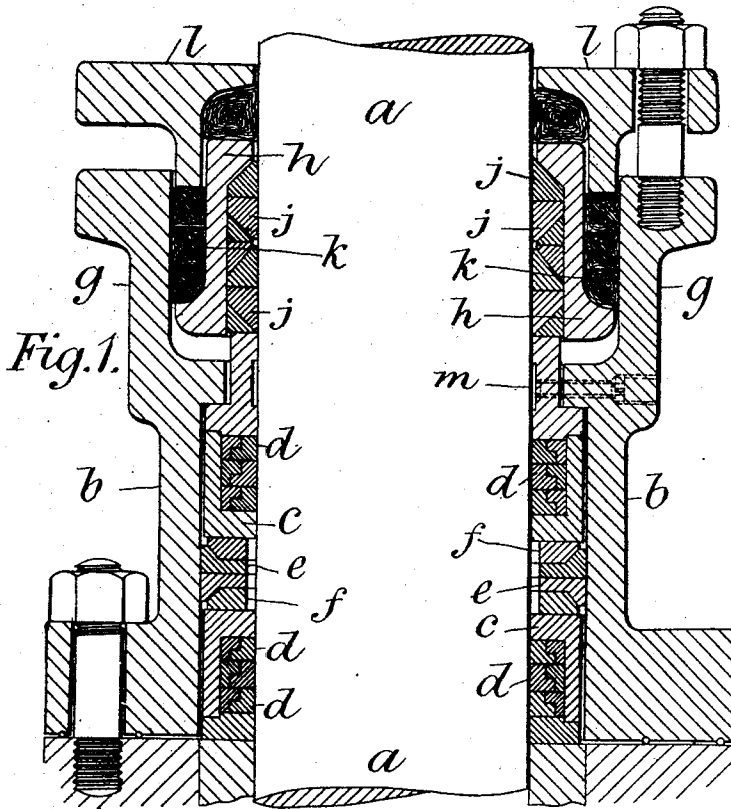
No. 797,066.

PATENTED AUG. 15, 1905.

L. W. J. MARSDEN.

PACKING.

APPLICATION FILED APR. 17, 1905.



Witnesses.

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UNITED STATES PATENT OFFICE.

LIONEL WILLIAM JOSEPH MARSDEN, OF MANCHESTER, ENGLAND, ASSIGNOR TO UNITED STATES METALLIC PACKING COMPANY, LIMITED, OF BRADFORD, ENGLAND.

PACKING.

No. 797,066.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed April 17, 1905. Serial No. 256,080.

To all whom it may concern:

Be it known that I, LIONEL WILLIAM JOSEPH MARSDEN, engineer, a subject of the King of Great Britain, residing at 11 Queen's Grove, Longsight, Manchester, England, have invented certain new and useful Improvements in Packing, of which the following is a specification.

According to my invention the improved packing consists of a peculiar combination of cast-iron (or other metal) compound spring-rings constructed and arranged as follows: A series of cast-iron (or other metal) compound spring-rings are contained between two covering-rings of angle or L-shaped section, forming when placed together a pressure-tight casing. Each compound ring consists of a pair of rings of angle-section, the whole forming a ring of rectangular section. The inner ring is so constructed that an inward pressure shall be exerted on the piston-rod. The outer ring is so constructed that an outward pressure shall be exerted on the inner surface or wall of covering-rings above mentioned, the object being to prevent the passage of gas, steam, &c., along the rod or behind the spring-rings. The vertical faces of each complete compound ring form a ground-joint with its fellow and with the inner vertical faces of the covering-ring. Other packing-rings are provided to prevent leakage around the covering-rings.

Figure 1 is a longitudinal section of the complete packing for a piston-rod in the form it is preferred to adopt. Figs. 2, 3, and 4 are plans of the rings *d*, *e*, and *f*, respectively.

a is the piston-rod, and *b* the stuffing-box.

c represents the L-shaped rings, each containing three pairs of compound spring-rings *d*. The rings *c* are separated from each other by compound spring-rings consisting of a split ring *e*, having a recessed face, the outer edge of which recess is beveled. Into this recess is sprung a split ring *f*, having a correspondingly beveled edge and so constructed that an outward pressure is exerted on the ring *e*. In addition to the pressure exerted on the wall or inner surface of stuffing-box an endwise pressure is obtained by reason of the inclines behind the covering-rings.

A supplementary packing is also fitted consisting of a false stuffing-box *g*, into which is placed a ring *h*, having an inwardly-project-

ing flange at one end and an outwardly-projecting flange at the other end, containing a series of wedge-shaped antifriction-metal (or brass) rings *j*. The annular space between the outside of the ring *h* and the inner surface of the false stuffing-box is filled with fibrous packing *k*, (preferably triangular packing,) two sections forming a rectangle.

A gland *l* is also bolted to the front of the stuffing-box in order to compress the fibrous packing *k* and to compensate for wear in the wedge-shaped rings *j*. An annular space *m* is formed round the piston-rod into which is placed an oiling and cleaning swab fed by a lubricator.

What I claim is—

1. In a packing for a piston-rod, the combination of a stuffing-box, a covering-ring of angular section, and a pair of spring-rings each of angular section inclosed between the covering-ring and the piston-rod, one spring-ring pressing outward against the covering-ring, the other pressing inward against the piston-rod.

2. In a packing for a piston-rod, the combination of a stuffing-box, a covering-ring of angular section, and a series of compound spring-rings of rectangular section inclosed between the covering-ring and the piston-rod, each compound spring-ring being made up of a pair of rings of angular section, one ring of each pair pressing outward against the covering-ring and the other pressing inward against the piston-rod.

3. In a packing for a piston-rod, the combination of a stuffing-box, two covering-rings of angular section, a compound spring-ring between the covering-rings and pressing outward against the inside of the stuffing-box, such ring consisting of a split ring with a beveled face and a spring split ring also with a beveled face, and a pair of spring-rings each of angular section inclosed between each covering-ring and the piston-rod, one spring-ring pressing outward against the covering-ring the other pressing inward against the piston-rod.

4. In a packing for a piston-rod, the combination of a stuffing-box, two covering-rings of angular section, a compound spring-ring between the covering-rings and pressing outward against the inside of the stuffing-box, such ring consisting of a split ring with a beveled face and a spring split ring also with a

beveled face, and a series of compound spring-rings of rectangular section inclosed between each covering-ring and the piston-rod, each compound spring-ring being made up of a pair of rings of angular section, one ring of each pair pressing outward against the covering-ring and the other pressing inward against the piston-rod.

5. In a packing for a piston-rod, the combination of a stuffing-box, a covering-ring of angular section, a pair of spring-rings each of angular section inclosed between the covering-ring and the piston-rod, one spring-ring pressing outward against the covering-ring, the other pressing inward against the piston-rod, a second stuffing-box forming a prolongation of the first, a flanged ring in it, packing between this ring and the piston-rod, and packing between it and the stuffing-box.

6. In a packing for a piston-rod, the combination of a stuffing-box, a covering-ring of angular section, a series of compound spring-rings of rectangular section inclosed between the covering-ring and the piston-rod, each compound spring-ring being made up of a pair of rings of angular section, one ring of each pair pressing outward against the covering-ring and the other pressing inward against the piston-rod, a second stuffing-box forming a prolongation of the first, a flanged ring in it, packing between this ring and the piston-rod, and packing between it and the stuffing-box.

7. In a packing for a piston-rod, the combination of a stuffing-box, two covering-rings of angular section, a compound spring-ring be-

tween the covering-rings and pressing outward against the inside of the stuffing-box, such ring consisting of a split ring with a beveled face and a spring split ring also with a beveled face, a pair of spring-rings each of angular section inclosed between each covering-ring and the piston-rod, one spring-ring pressing outward against the covering-ring the other pressing inward against the piston-rod, a second stuffing-box forming a prolongation of the first, a flanged ring in it, packing between this ring and the piston-rod, and packing between it and the stuffing-box.

8. In a packing for a piston-rod, the combination of a stuffing-box, two covering-rings of angular section, a compound spring-ring between the covering-rings and pressing outward against the inside of the stuffing-box, such ring consisting of a split ring with a beveled face and a spring split ring also with a beveled face, a series of compound spring-rings of rectangular section inclosed between each covering-ring and the piston-rod, each compound spring-ring being made up of a pair of rings of angular section, one ring of each pair pressing outward against the covering-ring and the other pressing inward against the piston-rod, a second stuffing-box forming a prolongation of the first, a flanged ring in it, packing between this ring and the piston-rod, and packing between it and the stuffing-box.

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Witnesses:

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