

No. 735,364.

PATENTED AUG. 4, 1903.

H. J. GOLD.
METALLIC PACKING FOR STUFFING BOXES.

APPLICATION FILED NOV. 6, 1902.

NO MODEL.

FIG. I.

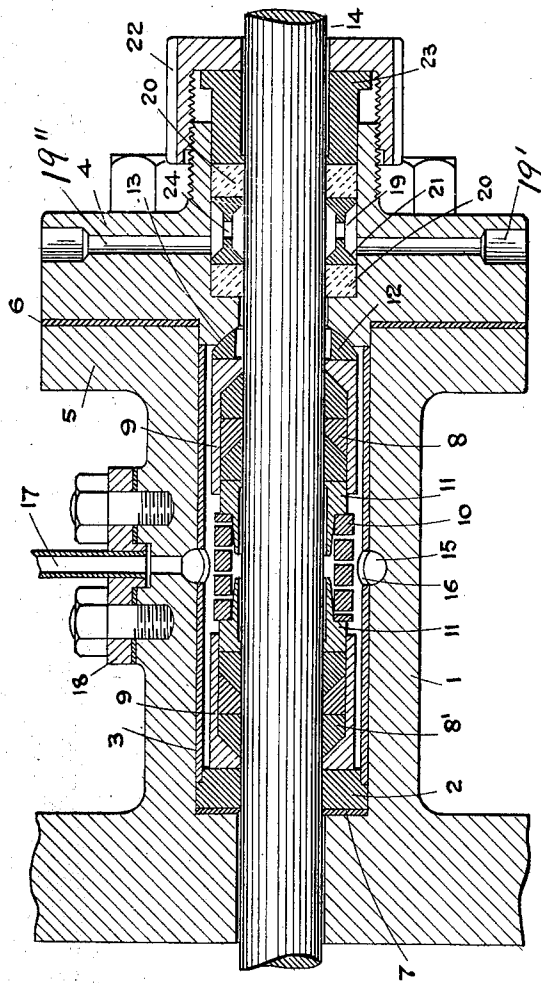
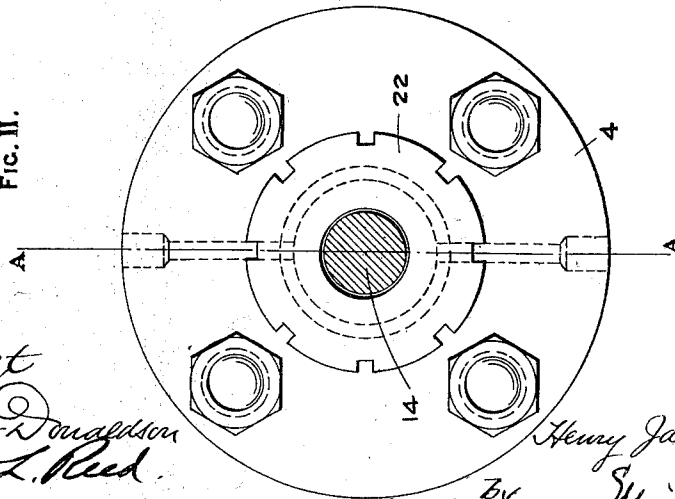


FIG. II.



Attest
Walter Donaldson
Edw. L. Reed

Inventor
Henry Jackson Gold
By
Wm. Spear
Att'y

UNITED STATES PATENT OFFICE.

HENRY JACKSON GOLD, OF LEEDS, ENGLAND, ASSIGNOR TO THE UNITED KINGDOM SELF-ADJUSTING ANTI-FRICTION METALLIC PACKING SYNDICATE, LIMITED, OF LIVERPOOL, ENGLAND.

METALLIC PACKING FOR STUFFING-BOXES.

SPECIFICATION forming part of Letters Patent No. 735,364, dated August 4, 1903.

Application filed November 6, 1902. Serial No. 130,290. (No model.)

To all whom it may concern:

Be it known that I, HENRY JACKSON GOLD, a subject of the King of Great Britain, residing in Leeds, in the county of York, England, have invented certain new and useful Improvements in or Relating to Metallic Packing for Stuffing-Boxes and the Like, of which the following is a specification.

This invention relates to improvements in metallic packings for stuffing-boxes and the like, and more particularly for the stuffing-boxes of gas-compressors, especially those used for compressing ammonia or gases of the like tenuity, and I will, by way of example, describe my invention as applied to such stuffing-boxes.

I have illustrated my invention in the accompanying drawings, in which—

Figure I is a longitudinal section on the line A A of Fig. II, and Fig. II an end view of a stuffing-box constructed according to my invention.

In the bottom of the stuffing-box 1 I fit a ring 2, which I will term the "bottom" ring. This ring is held in place by a sleeve 3, which is a sliding fit in the stuffing-box 1 and which is of such length as to be maintained in position by the cover 4, which closes the stuffing-box. Between this cover 4 and the flange 5 of the stuffing-box I interpose a washer 6, of rubber or the like material, and between the bottom ring 2 and the bottom of the stuffing-box I interpose another washer, 7, of the same material, which two washers, in conjunction with the bottom ring 2, the sleeve 3, and cover 4, serve to form a gas-tight chamber into which and out of which no gas can escape except that which passes the packing-rings 8 and 8' of the metallic packing.

Inside the sleeve 3 the metallic packing proper is located, and it consists of two series of antifricition-rings 8 8', of the usual cone type, carried in two containing sleeves 9 and pressed apart by a compressed interposed spring 10, the pressure of which is transmitted through suitable bearing-rings 11. The lower containing sleeve bears against the bottom ring 2 and the upper one bears against an end ring 12, which preferably has a spherical seating 13. The sleeves 9, the spring 10,

the bearing-rings 11, and the two end rings 12 are smaller in diameter than the interior of the gas-tight sleeve 3, and are therefore free to follow any small lateral movement of the rod 14.

In the event of any gas passing the inside of the packing-rings 8' into the gas-tight sleeve I provide means for dealing with it as follows: I form an annular groove 15 in the inside wall of the stuffing-box and drill one or more holes 16 in the gas-tight sleeve 3, through which the interior of the sleeve communicates with the groove 15, which in turn communicates by a suitable pipe 17 with a receiver or other suitable vessel to which it is desired to lead the gas. The pipe 17 is provided with a flange attachment 18, so that it may be easily disconnected. I also provide against escape of gas past the outside packing-rings 8 to the atmosphere by forming in the cover 4 an oil-chamber 19, in which oil is retained by packing-rings 20, held apart by distance-pieces 21, the whole being held in position by means of a screwed cap 22 and gland 23. Oil is fed into this chamber 19 either by pressure or by gravity, the oil passing through holes 24 in the distance-pieces 21 into contact with the rod 14, thus forming a liquid seal to prevent leakage of gas. The oil is fed into the chamber 19 through the passage 19', leaving the same by the upper passage 19".

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

1. In a stuffing-box, in combination: the rod; the metallic packing fitting the rod; and the gas-tight chamber formed in the stuffing-box and in which the packing is inclosed and which is provided with an outlet through which any gas, which may accumulate may be withdrawn; substantially as described.

2. In a stuffing-box, in combination; the rod; the metallic packing fitting the rod; and the gas-tight chamber formed by a sleeve, an end washer and ring and a gland, provided with a liquid seal, and which makes joint with the stuffing-box and, by engagement with the sleeve presses the latter and the ring and washer so as to make the joint at the bottom of the box; substantially as described.

55

60

65

70

75

80

85

90

95

100

3. In a stuffing-box, in combination; the rod; the metallic packing; the ring; the washer; the sleeve; and the gland provided with a liquid seal consisting of the liquid-chamber and packing-rings and means for holding the latter in position, substantially as described.

4. In a stuffing-box, in combination; the rod, the metallic packing, the sleeve, the ring, the washer, and the gland provided with an oil-chamber, packing-rings, distance-piece and means for holding the packing-rings in position in the oil-chamber; substantially as described and illustrated.

5. In a stuffing-box, in combination; the rod, the metallic packing, and the gas-tight chamber having a liquid seal formed by a liquid-chamber containing packing-rings and having an inlet and an outlet for the liquid; substantially as described and illustrated.

6. In combination in a stuffing-box, a metallic packing comprising two sets of packing-rings, containing sleeves in which the two sets of packing-rings are located, a spring interposed between the two sets of rings, the pressure of said spring being communicated to the containing sleeves, and a spherically-seated ring between one of the sleeves and the adjacent wall of the box, substantially as described.

7. In combination in a stuffing-box, the me-

tallic packing, a gas-tight chamber within the box inclosing said metallic packing and having an outlet to lead the gas away as it accumulates and a chamber for a liquid seal which chamber is provided with an inlet and an outlet, substantially as described.

8. In combination with a stuffing-box a sleeve therein fitting with its periphery closely against the inner periphery of the box, a ring with a washer 7 between the inner end of the sleeve and the bottom of the box, a cover 4 for the box pressing against the end of the sleeve, a washer 6 between the cover and the box and packing means within the gas-tight chamber formed by the sleeve-ring, washers and cover, said packing surrounding the rod, substantially as described.

9. In combination a stuffing-box, a metallic packing within the box, a cover for the box and a sleeve surrounding the packing making a gas-tight joint at one end with the bottom of the box and at the other end with the cover, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY JACKSON GOLD.

Witnesses:

W. Y. SAINSBURY,
GEORGE LONGMAN.