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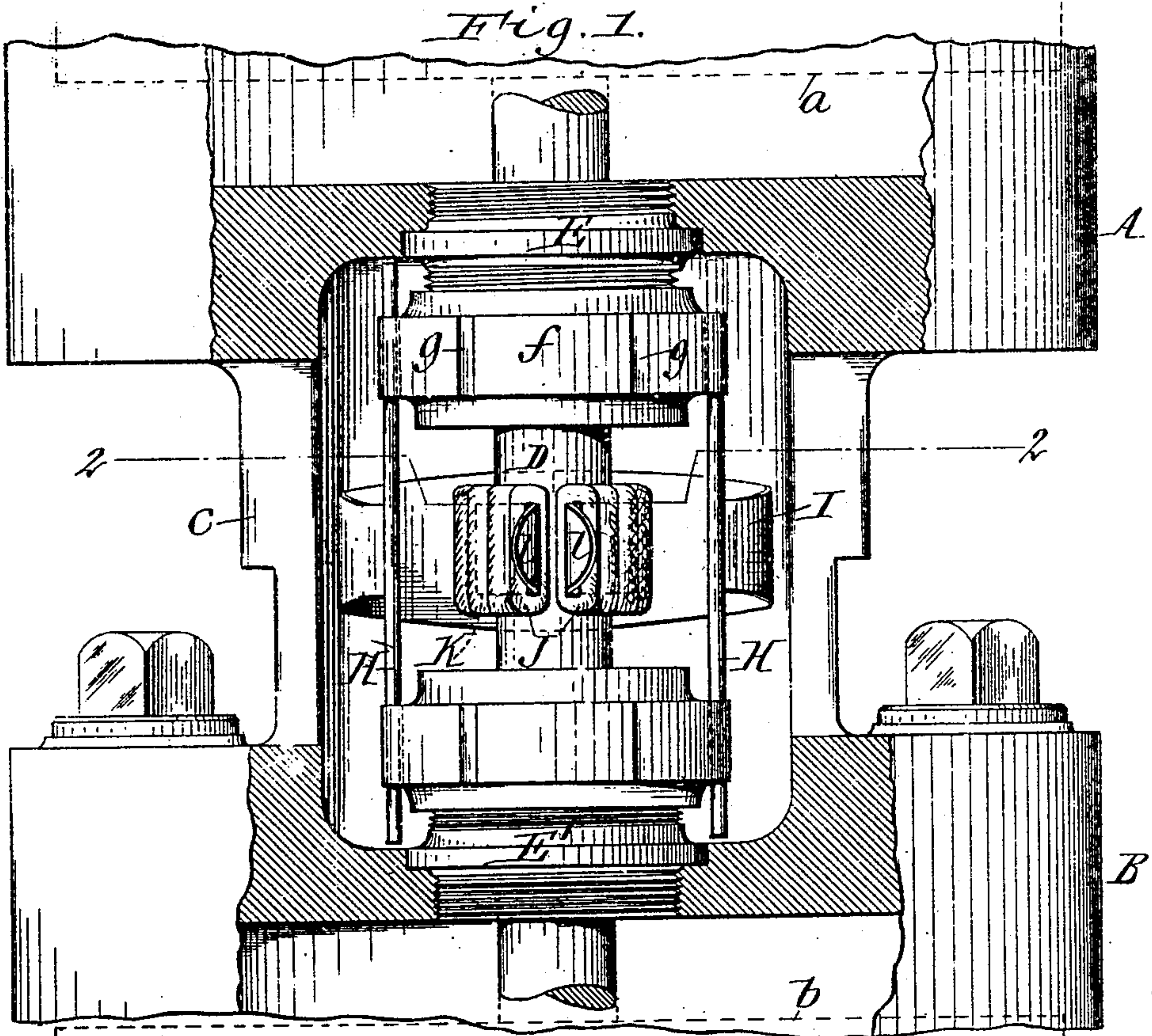
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No. 826,808.

PATENTED JULY 24, 1906.

W. H. SMITH.
STUFFING BOX LOCK AND ROD LUBRICATOR.
APPLICATION FILED SEPT. 5, 1905.

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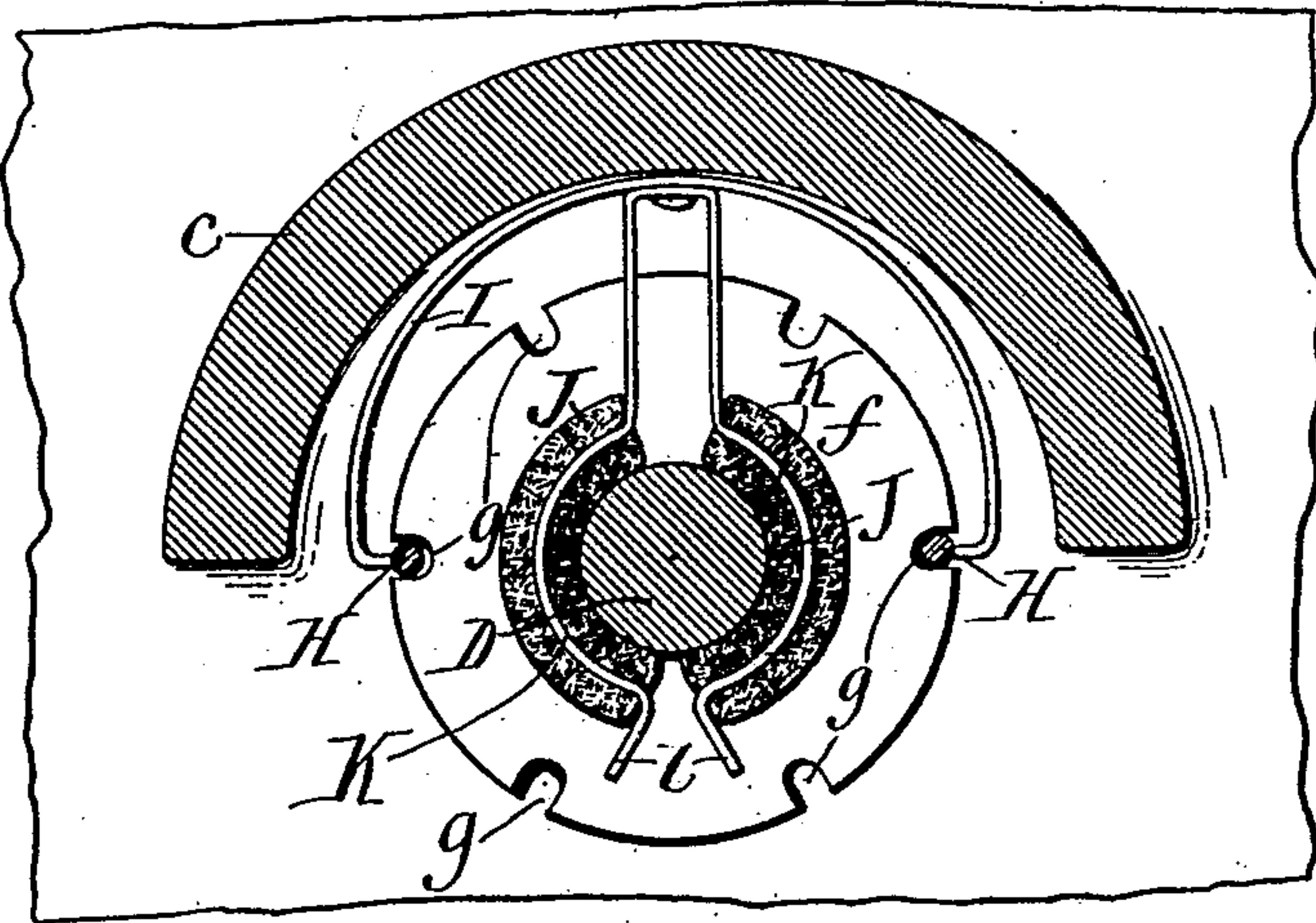
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X 18-25

Y 151-18

Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. SMITH, OF OIL CITY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAY THORNTON BARNSDALL, OF BUFFALO, NEW YORK.

STUFFING-BOX LOCK AND ROD-LUBRICATOR.

No. 826,808.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed September 5, 1905. Serial No. 277,022.

To all whom it may concern:

Be it known that I, WILLIAM H. SMITH, a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Stuffing-Box Locks and Piston-Rod Lubricators, of which the following is a specification.

In steam-operated air-pumps for railway air-brakes as heretofore constructed considerable difficulty has been experienced in keeping tight the packing-nuts of the stuffing-boxes through which passes the rod connecting the pistons of the steam and air cylinders.

The principal object of this invention is to provide a lock for these nuts which is simple in construction and effective in operation and which can be readily applied to the air-pumps as now constructed.

My invention has the further object to combine with said nut-lock means for conveniently lubricating said piston-rod between said cylinders.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of an air-pump for railway-brakes, showing my invention applied thereto. Fig. 2 is a horizontal section thereof in line 2 2, Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

A represents the steam-cylinder, and B the air-cylinder, of a steam air-pump, which are arranged end to end one above the other and which form part of the brake system of a railway-train. The opposing heads of these cylinders are connected, as usual, by a crescent-shaped neck *c*. D represents the piston-rod, which extends through stuffing-boxes E E' in these heads and is connected at its upper and lower ends with the pistons *a b*, arranged, respectively, in the steam and air cylinders, as indicated by dotted lines in Fig. 1. Each of these stuffing-boxes is constructed substantially like those now in use and has its packing-nut *f* provided on its periphery with a plurality of longitudinal recesses or seats *g*.

H H represent longitudinal locking-bars, which are arranged parallel to the piston-rod and engage at opposite ends with corresponding notches of the packing-nuts of both stuffing-boxes, the two locking-bars being preferably engaged with the two packing-nuts on diametrically opposite sides thereof, as shown

in the drawings. When these locking-bars are applied to the packing-nuts, the latter are interlocked. Inasmuch as the threads of both these nuts run in the same direction any tendency of one nut to unscrew and become loose is resisted by the other nut, which tends to tighten when moved in that direction. Each of these nuts therefore serves as an anchor or abutment for the coupling device which connects the same with the other packing-nut, whereby these nuts are effectually prevented from backing up and becoming loose.

I represents a crescent or bow shaped spring arranged adjacent to the space between the ends of both stuffing-boxes and connected at opposite ends with the central parts of the locking-bars.

The locking-bars are held in the recesses of the packing-nuts solely by the contraction or resilience of the bow-spring I, which connects the same. The seats or recesses in the packing-nuts are of such depth and length that when the locking-bars are seated in the same these bars are retained in parallel relation to each other and to the axis of the nuts.

When it is desired to turn the packing-nuts forward for tightening the stuffing-boxes or unscrewing these nuts when access is desired to the stuffing-boxes, the locking-bars can be readily disengaged from these nuts by spreading or separating the outer ends of the bow-spring sufficiently for this purpose.

In order to prevent the locking-bars from moving lengthwise to such an extent as would disengage either end thereof from the one or the other packing-nut, these rods are made of such a length that their ends terminate close to the opposing heads of the steam and air cylinders when these bars are in their operative position, as shown in Fig. 1. As shown in the drawings, the bow-spring of the locking device is placed between the piston-rod and the neck *c*; but, if desired, the same may be placed in front of the piston-rod.

It has been found by experience that it is very difficult to keep the piston-rod properly oiled and free from dust and grit where the same is exposed between the stuffing-boxes of the steam and air cylinders through which the rod slides. A lubricating device is therefore provided, which is so constructed and combined with the nut-lock that these two devices can be simultaneously applied to and

removed from the piston-rod and the packing-nuts. This lubricating device comprises a swab of fibrous material composed of two sections J J, which are placed on opposite sides 5 of the piston-rod between the stuffing-boxes, and two curved spring-jaws K K, which carry said swab-sections. Each of the jaws is provided at its outer end with a finger-piece l, and its inner end is connected with the cen- 10 tral part of the bow-spring of the nut-lock. These two jaws are preferably formed out of a single strip of spring metal, and the same are secured to the spring-bow by riveting, as shown. The lubricating-swab is saturated 15 with oil, whereby the piston-rod in sliding past the same is lubricated constantly and at the same time any dirt or dust which may be deposited is removed, thereby maintaining the same in the highest state of efficiency. 20 The lubricating-band preferably consists of pieces of wicking, which are wrapped around the jaws several times and then held in place by the pressure of the spring-jaws, which hold them against opposite sides of the piston-rod. 25 The jaws may be easily opened by means of the finger-pieces to permit of applying the swab-sections to the same or removing them therefrom.

I claim as my invention—

30 1. A locking device for the opposing packing-nuts of two piston-rod stuffing-boxes comprising a coupling member interlocked with both of said packing-nuts, substantially as set forth.

35 2. A locking device for the opposing packing-nuts of two piston-rod stuffing-boxes comprising a coupling-bar adapted to interlock with both of said packing-nuts by engaging opposite ends of the bar with recesses or seats 40 in the packing-nuts, substantially as set forth.

3. A locking device for the opposing packing-nuts of two piston-rod stuffing-boxes comprising a coupling-bar adapted to engage 45 with recesses or seats in both of said packing-nuts, and a spring for yieldingly holding said bar in its operative position, substantially as set forth.

4. A locking device for the opposing packing-nuts of two piston-rod stuffing-boxes 50 comprising two coupling-bars arranged to en-

gage peripheral recesses or seats in opposite sides of said nuts, and a bow-spring connecting said bars, substantially as set forth.

5. The combination of two piston-rod stuffing-boxes having packing-nuts each of which 55 is provided in its periphery with an annular row of longitudinal recesses or seats, locking-bars arranged on opposite sides of said nuts and each engaging its ends with correspond- 60 ing recesses or seats in both nuts and a bow-spring connected at its end with the central parts of said locking-bars, substantially as set forth.

6. A device for lubricating a piston-rod and locking the opposing nuts of two stuffing- 65 boxes through which said rod passes comprising a coupling member engaging with both of said nuts, and a lubricating member engaging with said rod and connected with said coupling member, substantially as set 70 forth.

7. A device for lubricating a piston-rod and locking the opposing nuts of two stuffing- 75 boxes through which said rod passes comprising a coupling member engaging with both of said nuts, a fibrous swab engaging with said rod between said stuffing-boxes, and a clamp- 80 ing device engaging with said swab and connected with said coupling member, substantially as set forth.

8. A device for lubricating a piston-rod and locking the opposing nuts of two stuffing- 85 boxes through which said rod passes comprising a pair of coupling-bars arranged on opposite sides of said nuts and each engaging at its 90 ends with corresponding recesses in said nuts, a bow-spring connecting the central parts of said bars, swab-sections engaging with said rod between said stuffing-boxes, and two spring-jaws arranged on opposite sides of said rod and carrying said swab-sections and connect- 95 ed with the central part of said spring, substantially as set forth.

Witness my hand this 29th day of August, 1905.

WILLIAM H. SMITH.

Witnesses:

THEO. L. POPP,

MAY E. MCARTHUR.