

A. J. M. CORNS.
 AIR PUMP GLAND NUT HOLDER AND PISTON ROD SWAB.
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1,178,629.

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Fig. 1.

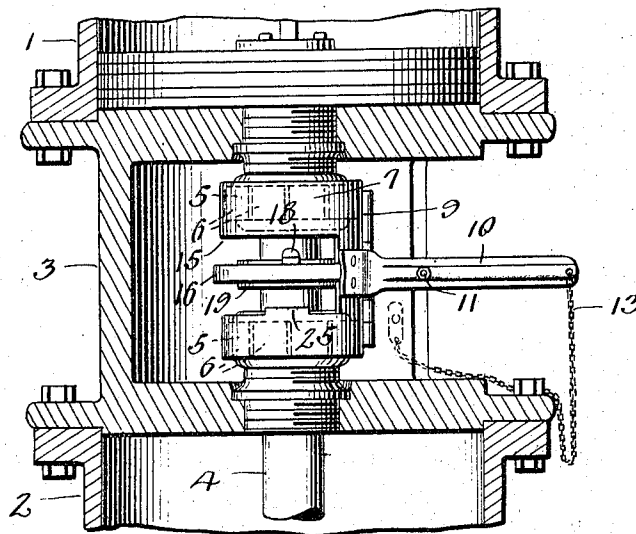


Fig. 2.

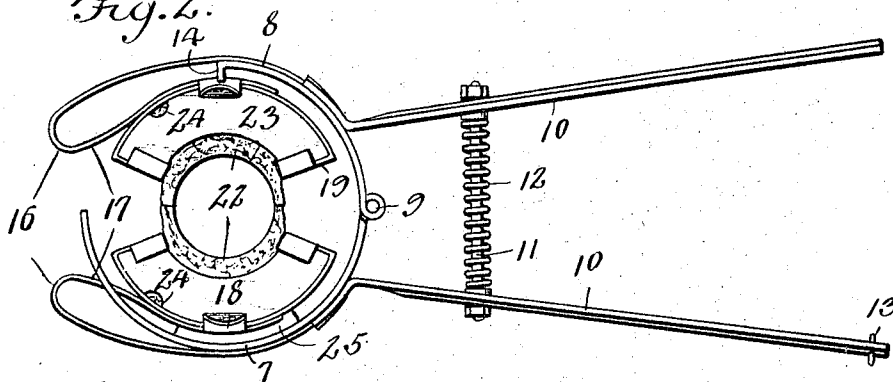


Fig. 3.

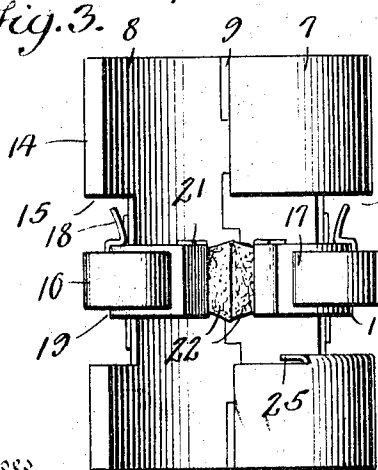


Fig. 4.

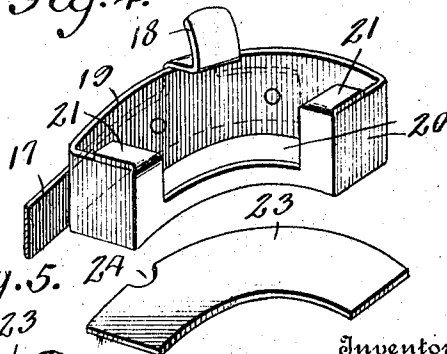


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED J. M. CORNS, OF QUINNIMONT, WEST VIRGINIA.

AIR-PUMP GLAND-NUT HOLDER AND PISTON-ROD SWAB.

1,178,629.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED J. M. CORNS, a citizen of the United States, residing at Quinnimont, in the county of Fayette and State of West Virginia, have invented new and useful Improvements in Air-Pump Gland-Nut Holders and Piston-Rod Swabs, of which the following is a specification.

This invention relates to gland nut holders especially adapted to be used upon air pumps of locomotive engines and it also includes means for swabbing and lubricating the piston rod of the pump and the device includes the novel features hereinafter described and claimed.

An object of the invention is to provide simple and durable means for restraining the packing gland nuts of an air pump from turning after the said nut has been properly applied and in addition to this it is also the object to provide in combination with such a device means for holding a swab against the piston rod of the pump whereby the said piston rod is supplied with a suitable quantity of oil to prevent the same from heating the packing of the pump and pump cylinder and damaging the same or damaging the piston rod.

With this object in view the device comprises jaws hingedly connected together and provided with handles there being interposed between the handles a spring which is under tension with a tendency to normally hold the free ends of the jaws toward each other. Means is provided for permanently securing one of the handles to the center piece of the pump structure. One of the said jaws is longer than the other and the shorter jaw is provided at its free edge with intumed flanges adapted to engage in the recesses between the lugs upon the stuffing box nuts of the pump cylinder and compression cylinder whereby the said nuts are held against turning movement after they have been properly adjusted. Resilient arms are attached to the jaws and carry oil cups or boxes which are located at the opposite sides of the piston rods when the device is applied. The said cups or boxes are provided at their upper portion with removable plates or covers adapted to retain suitable swabs or wicks in the boxes in a manner so that the inner edges of the said swabs or wicks may bear against the opposite sides of the

piston rods. The plates are retained in position in the cups or boxes by means of spring clips provided upon the said spring arms and the plates are provided with recesses through which oil may be poured into the boxes or cups at desired intervals.

In the accompanying drawing:—Figure 1 is a vertical sectional view of part of an air pump showing the device applied. The other figures are detail views of the features of the gland nut holder and piston rod swab.

As illustrated in the accompanying drawing, part of the steam cylinder is indicated at 1 and part of the air cylinder is indicated at 2. The cylinders are spaced from each other by the usual center piece 3. The piston rod 4 is mounted for reciprocation in both of the said cylinders and traverses the vertical lengths or height of the center piece 3. The said piston rod 4 is surrounded by stuffing box nuts 5 of usual configuration which are connected respectively with the stuffing boxes of the steam and air cylinders. The said nuts 5 are located in the center piece 3 and they are provided at their peripheries with spaced lugs 6. A spanner wrench of usual pattern may be applied into the spaces between the lugs 6 for turning the nuts whereby they may be properly adjusted with relation to the stuffing boxes of the cylinders to which they are applied. Both of the nuts 5 engage right hand threads but inasmuch as the nuts are located vertically one above the other it is necessary for the nuts to turn in opposite directions when they begin to unscrew from the threads that they engage.

The gland nut holder and piston rod swab includes a relatively large jaw 7 and a relatively small jaw 8 the said jaws being hingedly or pivotally connected together as at 9 and handles 10 are fixedly attached to the jaws 7 and 8 and a bolt 11 loosely passes through both of the said handles. A coil spring 12 surrounds the intermediate portion of the bolt 11 and bears at its opposite ends against the inner surfaces of the handles 10 and the said spring is under tension with a tendency to hold the free edges of the jaws 7 and 8 toward each other. A chain or other flexible element 13 is connected with one of the handles 10 and may also be connected by means of a rivet or

staple with the center piece 3 whereby the said nut holder and swab is permanently connected with the pump mechanism.

The relatively small jaw 8 is provided at its free edge with flanges 14 which are adapted to engage in the spaces between the lugs 6 of the stuffing box nuts 5 whereby the said nuts are restrained against turning movement with relation to each other when the device is applied. The large jaw 7 is preferably devoid of such flanges as the flanges 14 but the said large jaw approximately describes a semi-circle in edge elevation and it lies snugly against the outer surfaces of the lugs 6 of both of the stuffing box nuts 5. Both of the jaws 7 and 8 at points approximately midway between the upper and lower edges and at their free ends are provided with recesses 15. Resilient arms 16 are connected with the jaws 7 and 8 at the inner portions of the recesses 15 therein and inasmuch as the said arms and their attachments are both alike a description of one will answer. Each arm 16 is provided with a return bend 17 and a resilient clip 18 formed at the inner end thereof. A box or cup 19 is riveted or otherwise secured to the inner surface of the return bend 17 and the clip 18 is disposed over the outer side wall of the said box or cup. The box or cup 19 is devoid of fixed inner and top walls but the said box or cup is provided at its lower wall and end walls with flanges 20 which are disposed beyond the inner surfaces of the said walls. The flanges 20 upon the end walls of the box or cup 19 are extended outwardly in the form of lugs 21 which at their outer ends are spaced from the outer wall of the said box or cup. Swabs or wicks 22 are retained in the box or cup 19 and the said swabs or wicks project beyond the inner portions of the box or cup and their edges lie against the edges of the flanges 20 provided at the bottom and end walls of the box or cup. A removable plate 23 fits in the upper portion of the box or cup against the upper side of the uppermost swab or wick 22 and is retained under the lugs 21 and under the portion of the clip 18 which extends over the box or cup. The plate 23 is provided at one edge and in the vicinity of one end with a recess 24 through which oil may be poured into the box or cup and upon the wicks or swabs retained therein. The large jaw 7 is provided at the lower edge of the recess 15 therein with an inwardly disposed flange 25 which is adapted to bear against the upper face of the lowermost stuffing nut box 5 whereby the device is restrained against longitudinal movement during the downward movement of the piston rod 4.

When the device is applied to the air pump the flanges upon the small jaw 8 are engaged in the spaces between the lugs 6 upon both of the nuts 5 as hereinbefore de-

scribed and the boxes or cups 19 are held at the opposite sides of the piston rods 4. The inner edges of the swabs or wicks 22 which are carried by the said boxes or cups bear directly against the opposite sides of the piston rod, consequently as the said piston rod reciprocates in the heads of the cylinders 2 and 3 the oil is conveyed from the swabs or wicks 22 to the packings which are retained by the said stuffing box nuts and hence the said packings are sufficiently lubricated to prevent the same from becoming overheated and also to prevent the piston rods from wearing and becoming grooved or scratched, as frequently occurs, and thus the application of the device to the pump maintains the packings and the piston rods in a proper condition to prevent the leakage of steam or air from the pump structure between the packings and the piston rods.

When it is desired to supply the boxes or cups 19 with oil this may be readily accomplished by grasping the handles 10 and pressing them together against the tension of the spring 12 whereby the flanges 14 upon the small jaw 8 are moved out of the spaces between the lugs 6 upon the stuffing box nut and the entire device may then be removed from the center piece 3 through the opening at the side thereof. After the removal of the device as indicated oil may be poured into the boxes or cups 19 through the recesses 24 provided at the sides of the plates 23 and after the device has been supplied with a suitable quantity of oil it may be again applied to the pump structure as hereinbefore indicated.

From the foregoing description taken in conjunction with the accompanying drawing it will be seen that a nut holder especially adapted to be applied to the pump mechanism of a locomotive engine, of simple and durable structure is provided and that when the device is applied it will securely hold the nuts of both cylinders of the pump mechanism against turning movement and it also affords means for properly supplying a lubricant to the piston rod in order to prevent the same from wearing and in order to properly supply the packings of the cylinders with the lubricant to prevent heating and wear.

Having described the invention what is claimed is:—

1. A device of the character described comprising jaws hingedly connected together, spring means for normally holding the free ends of the jaws toward each other, said jaws being substantially arcuate in edge elevation, one of the jaws being larger than the other, the smaller jaw being provided at its free end with an inturned flange.

2. A device of the character described comprising jaws hingedly connected together, spring means for holding the jaws

toward each other, said jaws being substantially arcuate in edge elevation, one of the jaws being provided at its free end with an inturned flange.

5 3. A device of the character described comprising jaws hingedly connected together, spring means for normally holding the free ends of the jaws toward each other, said jaws being approximately arcuate in
10 edge elevation, one jaw having at its free end an inturned flange and the other jaw provided at a point between its free and hinged end with an inturned flange.

15 4. A device of the character described comprising jaws hingedly connected together, spring means for normally holding the free ends of the jaws toward each other, resilient arms attached to the jaws, cups attached to the arms and located between the
20 jaws and swabs carried by the cups.

5 5. A device of the character described comprising jaws hingedly connected together, resilient arms attached to the jaws, cups carried by the arms and swabs carried
25 by the cups.

6. A device of the character described comprising jaws hingedly connected together, resilient arms attached to the jaws and provided with return bends located between the jaws, cups mounted upon the arms
30 at the return bends thereof and swabs carried by the cups.

7. A device of the character described

comprising jaws hingedly connected together, resilient arms attached to the jaws, 35 clips provided upon the arms, cups attached to the arms, said clips extending over the edges of the cups, plates removably mounted in the cups below the clips and swabs located in the cups below the plates. 40

8. A device of the character described comprising jaws hingedly connected together, resilient arms carried by the jaws and provided with clips, cups mounted upon the arms and having inturned flanges, swabs 45 located in the cups between the flanges and plates adapted to engage under the uppermost flanges of the cups and under the said clips.

9. A device of the character described 50 comprising jaws hingedly connected together, resilient arms attached to the jaws and provided with clips, cups attached to the arms and having inturned flanges, swabs located in the cups between the flanges, removable plates engageable under some of 55 the flanges of the cups and engageable under the clips, the said plates being provided with recesses through which oil may be introduced into the cup. 60

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED J. M. CORNS.

Witnesses:

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BENNETT S. JONES.