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S. J. SLOTSKY

1,929,905

PACKING GLAND

Filed July 21, 1931

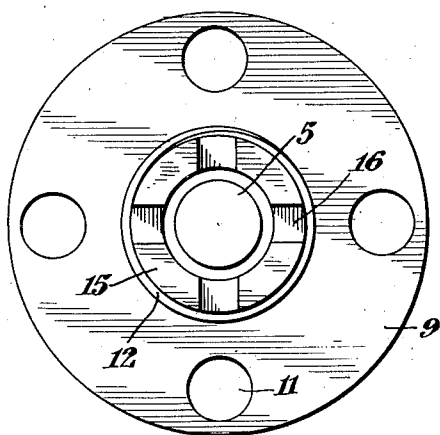


Fig. 1.

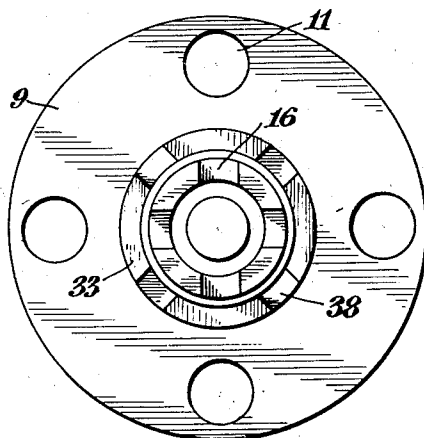


Fig. 3.

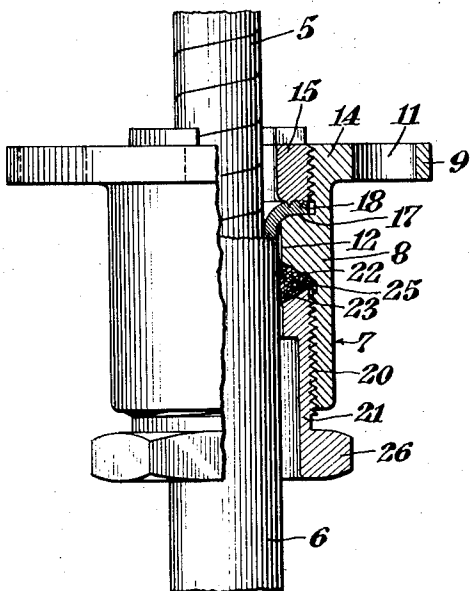


Fig. 2.

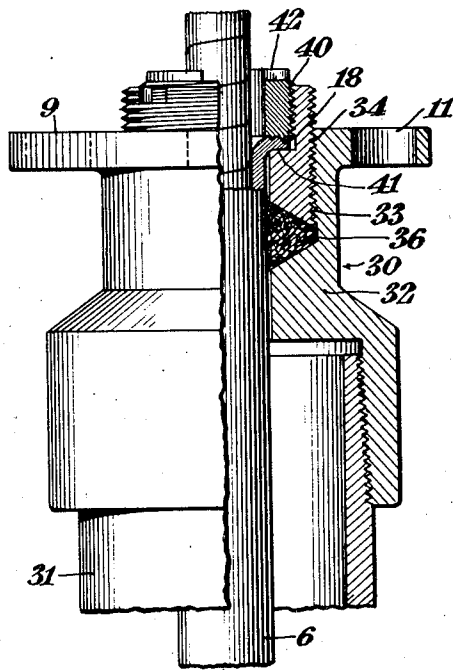


Fig. 4.

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## UNITED STATES PATENT OFFICE

1,929,905

## PACKING GLAND

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Application July 21, 1931. Serial No. 552,167

7 Claims. (Cl. 247-18)

My invention relates to packing glands and particularly to a packing gland providing a mechanical seal for forming a water-tight connection with a cable sheath.

It has been the practice in the past to provide a flanged nipple with a cable engaging end which is soldered to the sheath of the cable to form a unit structure therewith. The flange of the nipple is employed to detachably mount the cable to a pothead, a junction box or to similar apparatus. This type of joint has been preferred over mechanical joints, heretofore employed, because a water-tight connection between the sheath and the nipple was assured when solder was employed.

In practicing my invention, I provide a nipple with means for engaging and securing the end of the sheath in firm fixed relation to the nipple and provide a packing ring which forces a sealing material into water-tight engagement with the sheath. The material is disposed adjacent to the point at which the sheath is retained in fixed position to the nipple and substantially no movement of the cable can be transferred to the material to cause it to be loosened and the seal to be thereby destroyed.

Accordingly, one object of my invention is to provide a nipple for a cable which is retained in water-tight engagement therewith by mechanically adjustable means which supports and seals the cable sheath.

Another object of my invention is to provide an engaging member for a sheath of a cable which shall clamp the end of the sheath in fixed position therewith and shall force a packing material into sealed relation with the sheath.

A further object of my invention is to provide an engaging member, for a sheath of the above described type, having a plug screwed therein which retains a packing material in sealed relation with the sheath and which is provided with means for clamping the end of the sheath in firm engagement therewith.

Other objects and features of novelty of my invention will be either specifically pointed out or will become apparent when referring, for a better understanding of my invention, to the following description in conjunction with the accompanying drawing, wherein:

Fig. 1 is a plan view of a cable connector embodying features of my invention,

Fig. 2 is a broken sectional view of the structure shown in Fig. 1,

Fig. 3 is a plan view of a cable connector embodying a modified form of my invention, and

Fig. 4 is a broken sectional view of the structure shown in Fig. 3.

Referring to Figs. 1 and 2, I have shown a cable 5 provided with a lead sheath 6 which protects the cable and seals it against moisture. A connector 7 is employed for engaging the outer surface of the sheath 6 in a water-tight manner and includes a body portion 8 having a flange 9 which is provided with apertures 11 by which the connector is removably attached to a pothead or to similar structure. An opening 12 is provided centrally through the body portion 8, of a diameter which is slightly larger than that of the cable, for the purpose of permitting the cable of extending therethrough.

The hole is enlarged at the flanged end and is threaded, as at 14, for the purpose of receiving a sheath engaging plug 15 which is screwed therein. The upper end of the plug is provided with a plurality of slots 16, for receiving a spanner wrench, by which the plug is screwed into the body portion 8 for firmly clamping the end of the sheath 6 against a shoulder 17 provided on the inner surface thereof. Projections 18 are employed on the inner surface of plug 15 which cut into the surface of the sheath and cause it to flow more freely into firm engagement with the shoulder and the plug. By having the metal flow in this manner, not only does the plug retain the sheath in fixed position on the body portion 8, but a substantial seal is also constituted thereby.

The end of the body portion 8, opposite to that in which the plug 15 is screwed, is also enlarged and provided with threads 20 in which a tubular threaded member 21 is screwed. A shoulder 22 on the body portion 8, effected by the enlargement of the hole 12, slopes away from the threaded side wall 20 and the inner end of the threaded member 21 is provided with a surface which slopes in a direction opposite to that of the sloping surface 22.

A packing material 25 is provided between the surface 22 and 23 and, when the member 21 is screwed within the body portion 8 by a wrench which engages a hexagon head 26 provided on its outer end, the packing material 25 is forced into form sealing relation with the sheath. The sloping surfaces not only provide a bias outwardly to the packing material but also increase the width of engagement thereof with the sheath to thereby increase the sealing area of the connector. The sealing material is disposed in contiguous relation to the retained end of the sheath and the movement of the cable relative

to the connector will transmit substantially no movement to the seal which would otherwise be distorted thereby.

Referring to Figs. 3 and 4, I have shown a modified form of my invention wherein the sealing and retaining plugs are mounted on the same end of the connector in a manner which will now be described.

I mount both of the plugs on the flanged end of the connector 30 in order that the opposite end of the connector may be attached to a pipe 31 as shown in Fig. 4. The body portion 32 of the connector is of a greater width than the body portion 8 of the connector 7 to permit the opening thereof to be enlarged to a greater diameter, as at 33. The inner surface of the enlarged opening is provided with a thread 34 in which a plug 35 is screwed for the purpose of applying a bias to a packing material 36 to force it in firm engagement with the sheath 6 of the cable as described herein above. The upper end of the plug 35 is provided with recesses 38 which are engageable by a spanner wrench for the purpose of screwing the plug 35 into the threads 34 of the body portion.

The central opening through the plug 35 is enlarged in the top portion thereof and provided with threads 40 and a shoulder 41. A plug 42, which is similar to the plug 15, having projections 18 thereon, is screwed in the threads 40 into engagement with the end of the sheath 6 for the purpose of clamping the sheath 6 firmly against the shoulder 41 of the plug 35 in a manner described herein above in relation to the connector 7 illustrated in Figs. 1 and 2.

The method of attaching my connector to a cable will now be described. The sheath of the cable is first cut at a predetermined point in its length, with the insulating conductor thereof extending beyond the sheath a predetermined distance. The threaded member 21 and the body portion 8 of the connector is slid over the end of the cable 5 and the sheath 6 and the end of the sheath is flanged outwardly as shown in the figure.

The body portion 8 is then moved upwardly until the shoulder 17 engages the underside of the flange, after which the plug 15 is screwed into the threads 14, forcing the flange into firm engagement with the shoulder. The plug is tightened by a spanner wrench which engages the slots 16 in the upper end of the plug. A packing material 25 is placed about the sheath and the threaded member 21 is screwed on the threads 20 until the sloping surface 23, in conjunction with the surface 22, forces the material into firm sealing relation with the sheath. In a similar manner the structure illustrated in Figs. 3 and 4 is connected to a sheath 6 to provide a water-tight joint therewith.

It will thus be seen that I have provided a connector for engaging and retaining the sheath of a cable in fixed relation therewith and for sealing it in a water-tight manner. The bore of the connector snugly fits the outer surface of the sheath and is enlarged at each of its ends and threaded for receiving a pair of plugs, one of which forces the end of the sheath into fixed relation with a shoulder of the connector, the other of which forces a packing material into sealed relation with the sheath. In a modified form of my invention I have shown a plug screwed into one enlarged end of the bore for the purpose of forcing a packing material into sealed relation with the sheath and have en-

larged the upper end of the plug to provide a threaded, shouldered surface in which a second plug is screwed for forcing the end of the sheath into firm engagement with the shoulder of the plug. In either construction a cable sheath is retained by a connector in firm, sealed relation therewith.

While I have described and illustrated but two embodiments of my invention it will be apparent to those skilled in the art that many changes, omissions, additions and substitutions may be made therein without departing from the spirit and scope of my invention, as set forth in the accompanying claims.

I claim as my invention.

1. A stuffing box for connecting a sheath of a cable to a member which includes in combination, a body portion having a central opening, the medial portion of which snugly fits the sheath, the portion either side thereof being enlarged and threaded, a plug adjustably engaging the threads in one end of said body portion for clamping the sheath end firmly thereon and a second plug adjustably threaded in the opposite end of said body portion for forcing a packing material into sealing relation with the sheath.

2. A stuffing box for connecting a sheath of a cable to a member including in combination, a tubular body portion provided with a flange, a threaded section at each end of said body portion, a plug engaging the threads in one end of said body portion for clamping the sheath in fixed position thereto, a packing material in the opposite end of said body portion and a plug engaging the threads in the last said end for forcing said packing material into sealing relation to said sheath.

3. A stuffing box for connecting a sheath of a cable to a member which includes in combination, a member having a central opening through which said sheath extends and a shoulder within said opening engageable by the flanged end of said sheath, a plug threaded into said opening for forcing said end tightly against said shoulder; a packing material disposed about said sheath adjacent to said flanged end, and a confining member threaded to said first mentioned member for forcing said material into sealing relation to said sheath.

4. A stuffing box for connecting a sheath of a cable to a member which includes in combination, a body portion having a central opening through which said sheath extends, a shoulder in said opening, packing material provided against said shoulder, a plug for forcing said material into sealing relation with said sheath, a shoulder on said plug engageable by the flanged end of said sheath and a second plug for retaining said end in fixed relation to the first said plug.

5. A stuffing box for connecting a sheath of a cable to a member which includes in combination, a body portion having a central opening, through which said sheath extends, a shoulder associated with said opening, packing material provided against said shoulder, a plug for forcing said material into sealing relation with said sheath, and a plug in the end of said first plug for clamping the end of the sheath in fixed position.

6. A stuffing box for connecting a sheath of a cable to a member which includes in combination, a body portion having a central opening, through which said sheath extends, a shoulder associated with said opening, packing material

provided against said shoulder, a plug for forcing said material into sealing relation with said sheath, a plug in the end of said first plug for clamping the end of the sheath in fixed position, and projections on said plugs which are engageable by a wrench.

7. A stuffing box for connecting a sheath of a cable to a member which includes in combination a body portion having a central opening, through which said sheath extends, a shoulder associated with said opening, packing material provided against said shoulder, a plug for forcing said material into sealing relation with said sheath, a plug in the end of said first plug for clamping the end of the sheath in fixed position, and means on said body portion connectible to a member.

SAMUEL J. SLOTSKY.

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| 10 | 85  |
| 15 | 90  |
| 20 | 95  |
| 25 | 100 |
| 30 | 105 |
| 35 | 110 |
| 40 | 115 |
| 45 | 120 |
| 50 | 125 |
| 55 | 130 |
| 60 | 135 |
| 65 | 140 |
| 70 | 145 |
| 75 | 150 |