No. 711,761. Patented Oct. 21, 1902.

P. J. FLINN.

PACKING.

(Application filed Nov. 14, 1901.)

(No Model.)

Fig. 1.

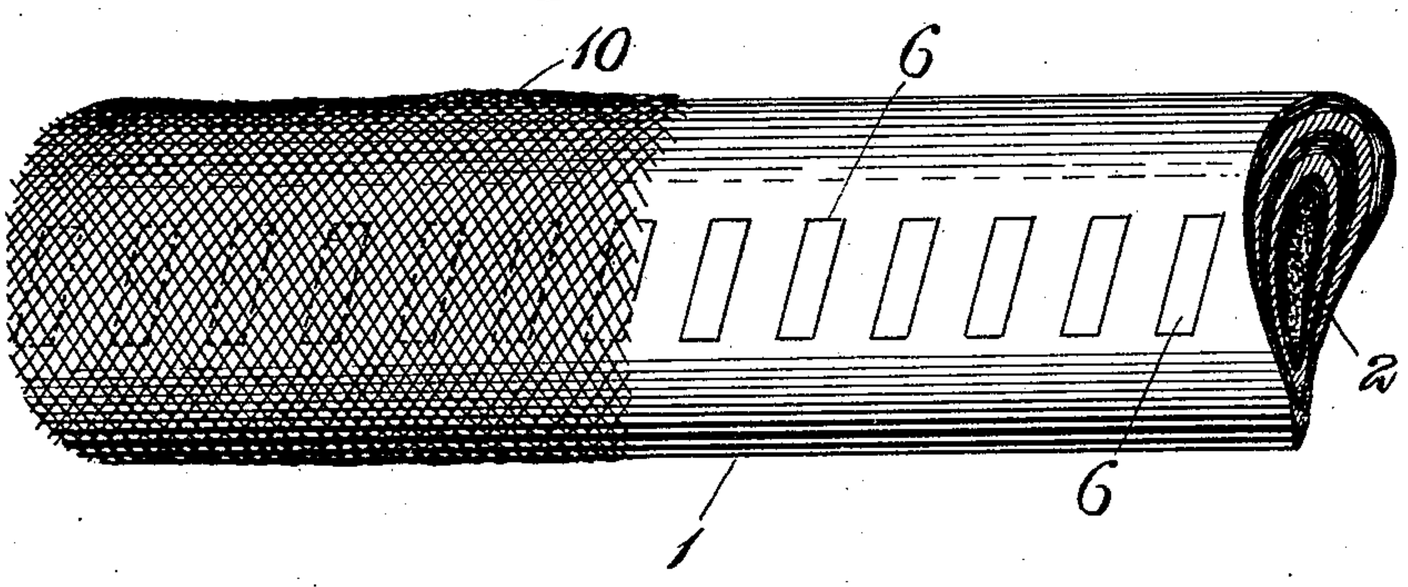


Fig. 2.

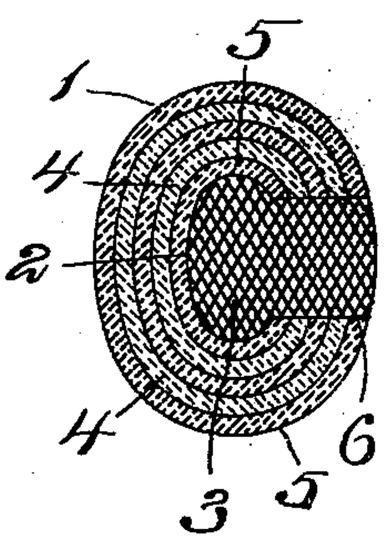


Fig. 3.

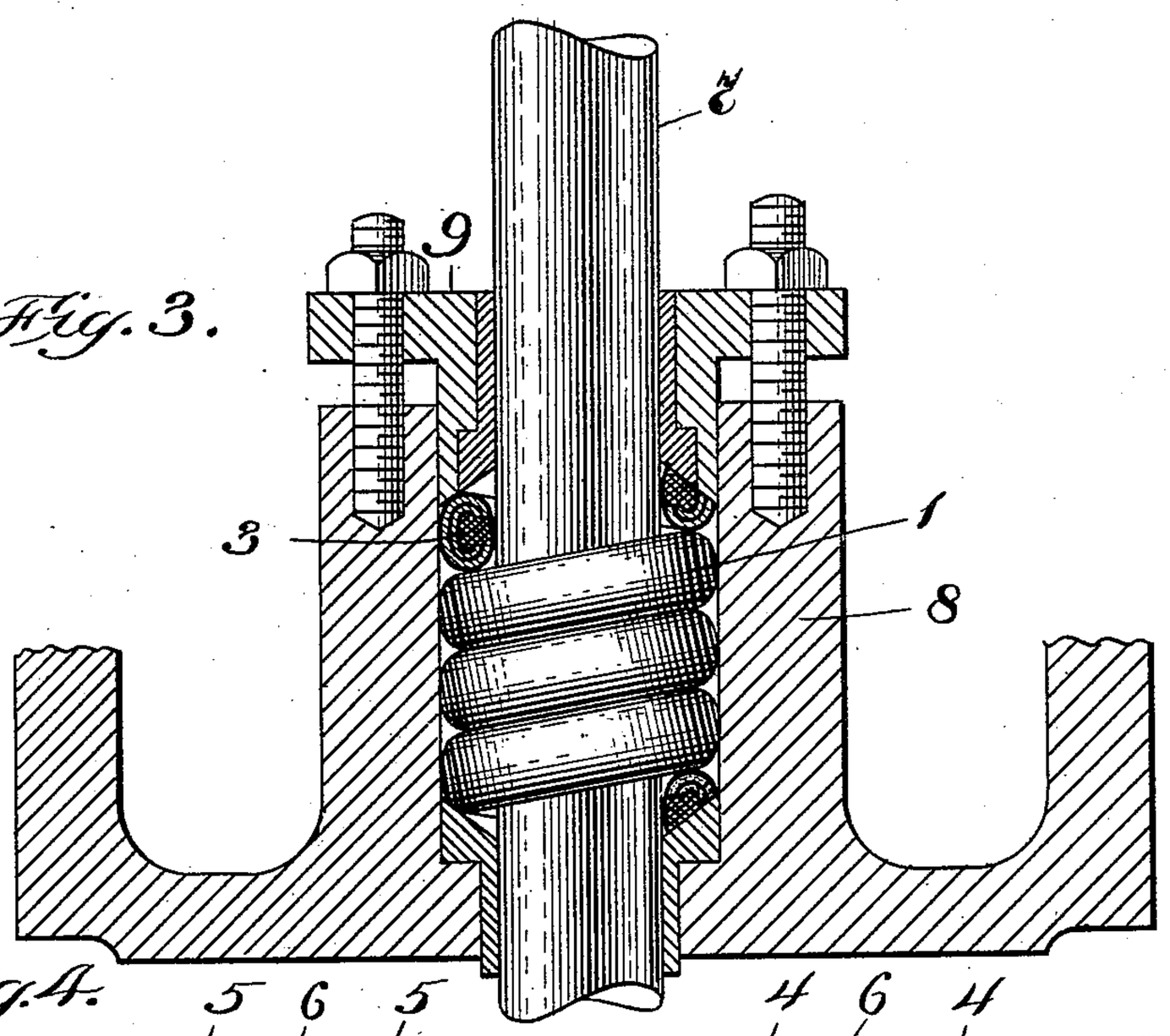


Fig. 4.

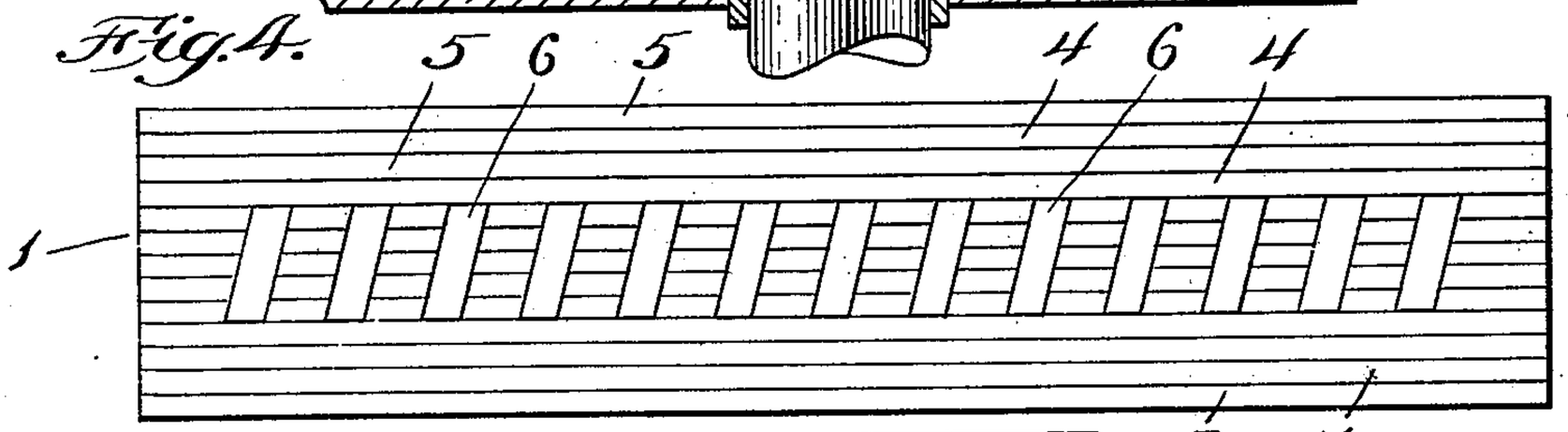
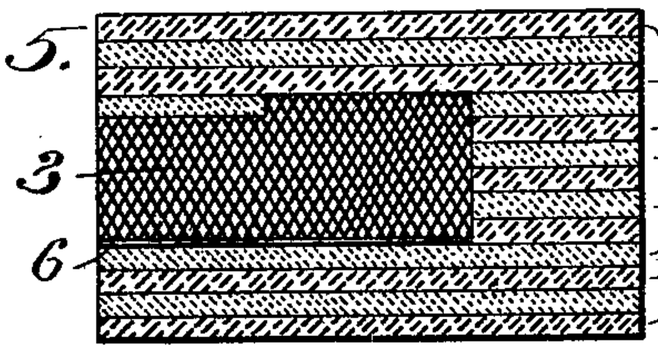


Fig. 5.



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UNITED STATES PATENT OFFICE.

PATRICK J. FLINN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO HARLEY E. ROYCE, OF BROOKLINE, MASSACHUSETTS.

PACKING.

SPECIFICATION forming part of Letters Patent No. 711,761, dated October 21, 1902.

Application filed November 14, 1901. Serial No. 82,243. (No model.)

To all whom it may concern:

Be it known that I, PATRICK J. FLINN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Packings, of which the following is a specification.

This invention relates to packing for the piston-rods of steam-engine cylinders and pumps or for similar purposes, and it relates more particularly to packing formed with apertures or cavities for lubricant which is adapted to exude to the surface of the packing to lubricate the piston-rod as the packing is compressed.

The object of the invention is to provide an improved article of manufacture in which the portion formed with the apertures is so shaped as to retain its proper conformation under compression and prevent the closing of the apertures and in which the face having the apertures is arranged to conform to the piston-rod and insure the proper location of the aperture in the packing with respect to the piston-rod when the packing is put in place.

Of the accompanying drawings, Figure 1 represents a side elevation of a strip or section of packing constructed in accordance with my invention. Fig. 2 represents a cross-section thereof. Fig. 3 represents a sectional view showing the packing in position in a stuffing-box. Fig. 4 represents a side elevation showing a packing of modified shape. Fig. 5 represents a cross-section of the latter.

The same reference characters indicate the same parts in all the figures.

The packing 1 is made tubular or with an interior cavity 2, adapted to contain a lubricant 3. The walls of the tube are collapsible and may be made of any suitable material, alternate layers of fabric 4 and rubber 5 being represented in the drawings. Along one side of the tube its wall is perforated with a series of apertures 6 6, extending from the central cavity 2 to the exterior of the packing, the outer orifices of these apertures being arranged to face the piston-rod when the packing is in place, so that the lubricating material may exude upon the piston-rod and not elsewhere when the packing is compressed. These apertures, it will be noted, are shaped in the form of parallelograms elongated transversely of the central longitudinal axis of the tube 1 and inclined with respect to that axis. I have found that by thus shaping and arranging the apertures the lubricant is more effectively distributed upon the piston-rod and is less likely to clog said apertures, that the apertures retain their general shape and remain open under compression, and that the wall or face of the tube having the apertures is less liable to distortion under compression than with other shapes or arrangements of outlets for the lubricant. These advantages would not be secured if the longer axes of the apertures should lie at an angle coinciding with or closely approaching the longer axis of the packing, but are attained when the axes of the apertures are arranged as shown—namely, at an inclination to the axis of the packing, but at a greater angle thereto than to planes normal or perpendicular to said packing-axis. I claim this shape and arrangement of apertures and substantial equivalents thereof as my invention, but do not claim, broadly, all tubular packings having an interior cavity for lubricant and apertures for the exit of said lubricant.

It will be observed that the form of packing shown in Figs. 1 to 3 is oval or substantially elliptical in shape, making a tube whose cross-sectional outline is more or less flattened on two opposite faces, in one of which are located the outer orifices of the apertures 6. This shape I have found to be better suited to a packing having a lubricant-cavity and apertures along one side than the circular outline, as it insures that the orifices will face the piston-rod when the packing is put in place. In Fig. 3, in which 7 represents the piston-rod of a pump or engine, 8 the stuffing-box, and 9 the adjustable gland therefor, it will be seen that the helical coil of packing in the box lies with the major axis of its oval or elliptical cross-section parallel to the piston-rod, the flattened face, which has the apertures 6, being next to the piston-rod 7. In forming the packing into a helix the tube is more easily coiled with its major axis parallel to that of the helix than with its minor axis parallel, and may be more easily made to conform to the piston-rod with a flattened face next the rod than with a rounded

face next thereto. Lubricant-apertures may also have a wider distribution transversely of the packing in immediate contiguity with the piston-rod on a flat-faced packing than on a round-faced packing.

Figs. 4 and 5 show a form of packing embodying my invention and having a rectangular cross-section. The packing may be provided with a sheath or cover 10, of braided metal wire, preferably brass or copper, to resist wear. Said cover extends across the orifices 6, but is of sufficiently-open character to permit the lubricant to exude through it. This cover makes the packing particularly useful as a steam-packing.

It is obvious that the apertures 6 6 constitute a series of cavities, recesses, or pockets in the packing containing bodies of lubricant.

I claim—

1. A packing comprising an elongated compressible body having unjoined ends adapting it to be wrapped around a piston-rod and formed with a plurality of recesses or cavities containing lubricant and of an elongated shape, said cavities lying with their longer axes at an inclination to the long axis of the packing but at a greater angle thereto than to planes normal to said packing-axis.

2. A packing comprising a tube with unjoined ends, formed with an interior cavity containing lubricant and with outlet-apertures extending therefrom and of an elongated shape, said apertures lying with their longer axes at an inclination to the long axis of the packing but at a greater angle thereto than to planes normal to said packing-axis.

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

PATRICK J. FLINN.

Witnesses:

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C. F. BROWN.