(No Model.)

P. J. GORMAN.

PISTON ROD PACKING.

No. 596,585. Patented Jan. 4, 1898.

Fig.1.

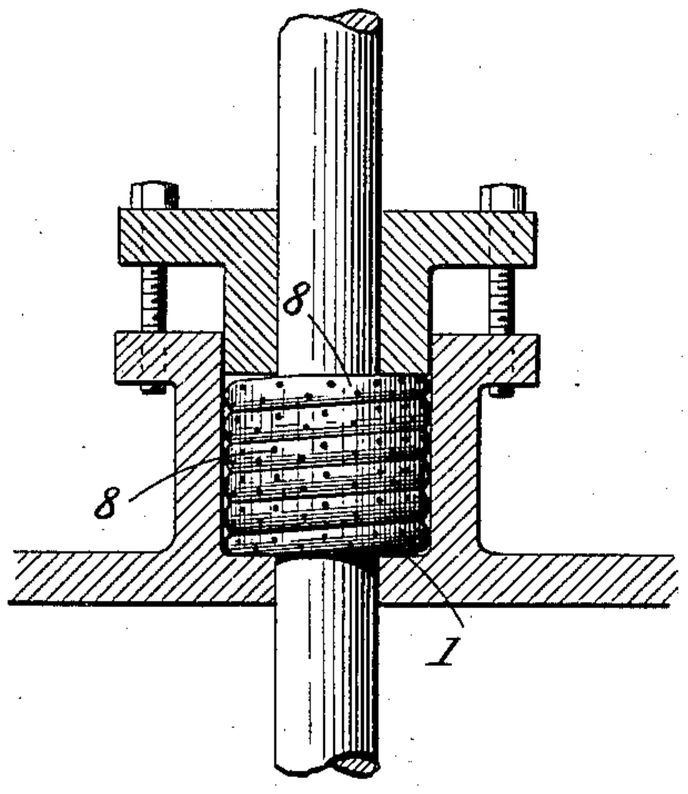


Fig.2.

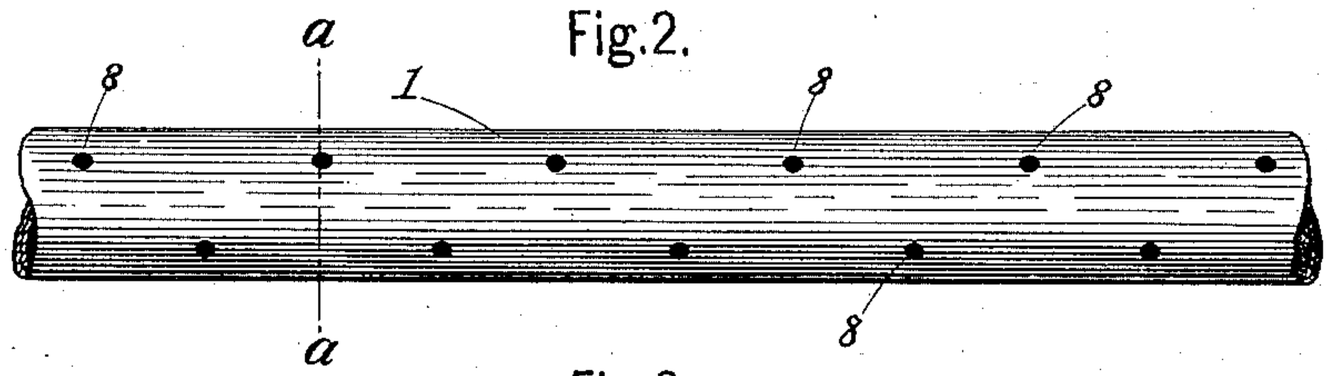


Fig.3

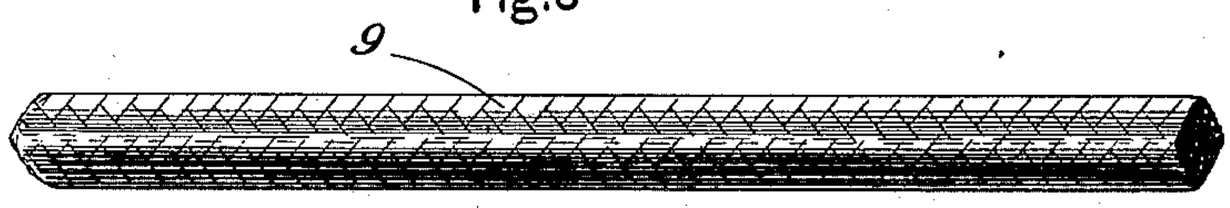


Fig.4.

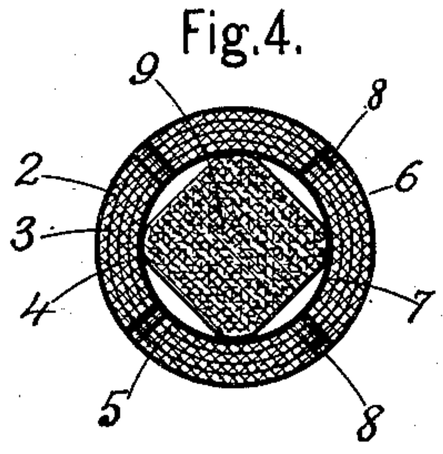
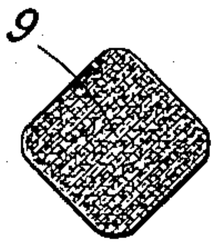


Fig.5.



Witnesses,
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UNITED STATES PATENT OFFICE.

PETER J. GORMAN, OF BUFFALO, NEW YORK.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 596,585, dated January 4, 1898.

Application filed April 14, 1897. Serial No. 632,056. (No model.)

To all whom it may concern:

Be it known that I, PETER J. GORMAN, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Piston-Rod Packing, of which the following is a specification.

The object of my invention is to produce a packing for steam-engine piston rods or pumps or for other purposes where a steam or water tight packing is required, and it will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a central sectional elevation through a steam-cylinder stuffing-box, showing a portion of a piston-rod and my improved packing connected therewith. Fig. 2 represents a side elevation showing a portion of the packing before being put into use in a stuffing-box. Fig. 3 represents a side elevation showing a portion of the central core that is fitted in the perforated tubular portion. Fig. 4 represents an enlarged transverse section through the packing on or about line *a a*, Fig. 2. Fig. 5 represents a central section through the central core, showing the preferred form in cross-section.

Referring to the drawings in detail, my improved piston-packing consists of an outer tube 1, made of two or more thicknesses of canvas. (See Fig. 4, where four thicknesses 2, 3, 4, and 5 are shown.) On the outer and inner sides is a coating of vulcanized india-rubber 6 and 7, and between each thickness is a thin layer of india-rubber cementing the whole together. In this tubing is a series of perforations 8.

The above is the preferred construction; but the ordinary rubber tubing having the perforations 8 will make a good packing.

Within the tube 1 is fitted an inner core 9, extending the entire length of the tube. It is preferably made of flax and lubricated with oil and graphite; but hemp or other similar absorbent material may be used. It is fitted in place within the tube substantially as shown in the section in Fig. 4. I prefer to make it substantially square in cross-section, as represented in Figs. 3, 4, and 5, because it more readily accommodates itself to the sides of the piston and stuffing-box in which it is placed. It may be made to operate if round in cross-section; but a square or other irregular form is preferred, as it gives a more free access to the steam which passes through the perforations 8 to the central core 9.

This packing is put in place for use by winding it spirally around the piston-rod in the usual way within the stuffing-box, and is then secured in the ordinary way, substantially as shown in Fig. 1.

In operation this packing when first put in is comparatively loose; but when steam is admitted it passes through the perforations 8 into and expands the inner core and also the perforated tubing, and the engine does not make more than five or six turns before the packing becomes perfectly tight. After steam is shut off and the engine becomes cool the packing becomes comparatively loose again.

While the engine is in operation the steam carries with it a portion of the lubricating material or oil, which is absorbed by the inner absorbent core and also by the canvas or absorbent material of which the outer tube is partly made and exposed by the perforations 8, which pass through it. A portion of this oil as fast as it is thus absorbed is given out to the piston-rod, which is thereby constantly lubricated. This is an important advantage, because while it reduces the friction it materially increases the durability of the packing and renders the action of the engine more uniform and easy.

I claim as my invention—

1. In a piston-packing, the combination with a combined rubber and canvas tube provided with a series of perforations, of a central core having an irregular cross-section and composed of absorbent material.

2. In a piston-packing, the combination of a tube made up of a series of layers of canvas and rubber, and provided with a series of perforations, with a central absorbing-core charged with lubricating material, substantially as set forth.

3. The combination with a piston and stuffing-box, of a packing loosely fitted around the piston, said packing comprising a tube provided with a series of perforations and an inner core of irregular form in cross-section loosely fitted therein whereby when steam is admitted it passes through the perforations expanding the inner core and the tubing and thus forming a tight joint, as set forth.

PETER J. GORMAN.

Witnesses:
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