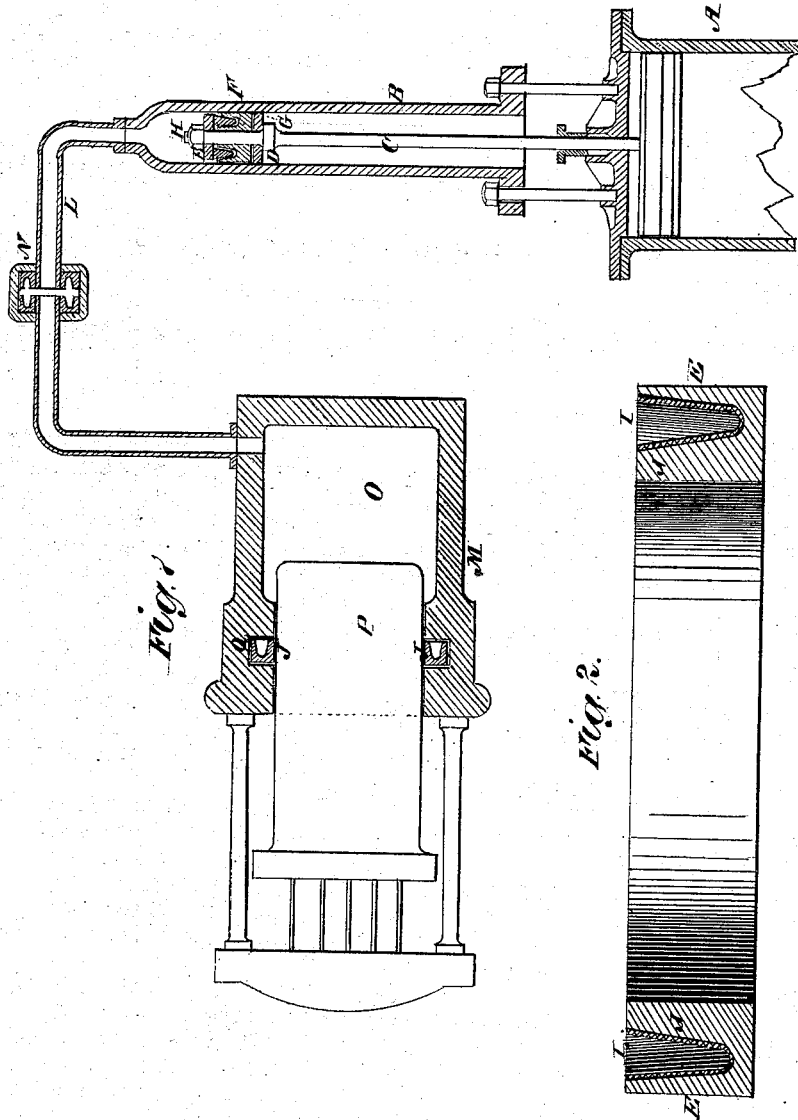


S. HUGHES & M. KELLY.

Packing for Pistons of Hydraulic-Engines.

No. 159,326.

Patented Feb. 2, 1875.



WITNESSES:
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SAMUEL HUGHES AND MICHAEL KELLY, OF CHARLESTON, S. C.

IMPROVEMENT IN PACKINGS FOR PISTONS OF HYDRAULIC ENGINES.

Specification forming part of Letters Patent No. **159,326**, dated February 2, 1875; application filed May 1, 1874.

To all whom it may concern:

Be it known that we, SAMUEL HUGHES and MICHAEL KELLY, of Charleston, in the county of Charleston and State of South Carolina, have invented a new and useful Improvement in Hydraulic Packing, of which the following is a specification:

In cylinder-pumps, and in the use of hydrostatic presses, and in the use of all pistons and plungers which are subject to water-pressure, it has been found extremely difficult to obtain packing which will prevent leakage. Much practical experience as hydraulic engineers has enabled us to discover a style of packing which meets our entire approval.

The invention will first be fully described, and then pointed out in the claim.

Figure 1 is a section, showing the application of the packing. Fig. 2 is a top view of the packing-ring detached.

Similar letters of reference indicate corresponding parts.

This packing is applied to the pistons of forcing-pumps, and to the cylinders of hydrostatic presses used for pressing cotton-bales, and for various other purposes.

A represents a steam-engine cylinder. B is the cylinder of a forcing-pump. C is a common piston-rod for both steam-engine and pump. D is the piston of the pump. E represents our improved elastic packing-ring, which is confined on the piston-rod of the pump by the followers F and G and nut H. In the upward movement of the piston against a heavy water-pressure the water will enter the groove I of the packing-ring and expand it transversely, forcing the inner part, J, against the piston-rod, and the outer ring, K, against the cylinder,

with a force proportioned to the pressure. L is the water-pipe between the force-pump and the hydrostatic press M. This pipe is made in two parts, N being the joint to which our packing-rings are applied, as seen. O is the cylinder, and P the plunger, of the press M. The packing-ring is inserted and made stationary in a groove, Q, in the cylinder.

It will be noticed that the water-groove I in the packing-ring is not in the middle of the ring, but placed one side when it is used in the press-cylinder, the inner portion being thicker than the outer, and receiving all the wear.

The water-groove is lined or faced with rubber, and the ring preferably made of strong fibrous material rendered water-tight and compact by some cohesive substance.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A packing for hydraulic engines consisting of a ring of woven fibrous material and rubber, having in its side a V-shaped groove lined with rubber, which forms of said rim a thick and thin lip, the groove being so placed as to make the thick lip on the wearing side, and thinner at its edge than at its base, substantially as set forth.

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