

P. W. RICHARDS.  
 PISTON-PACKING.

No. 187,985.

Patented March 6, 1877

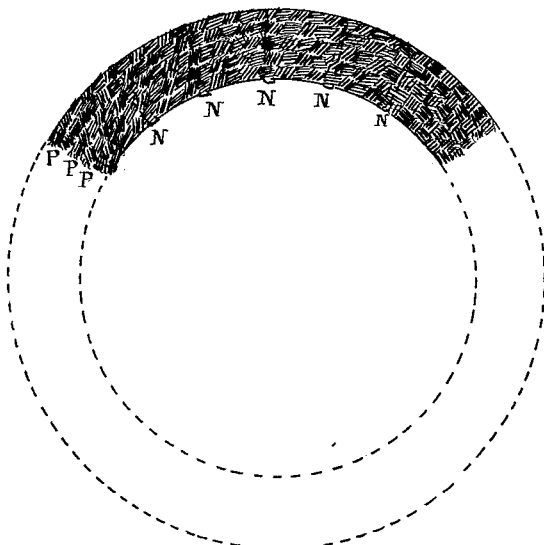


Fig. 1.

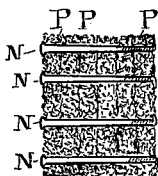


Fig. 2.

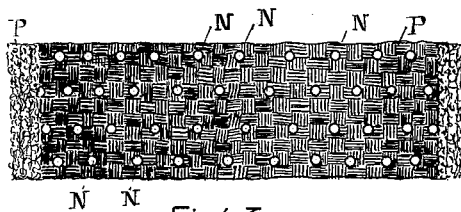


Fig. 3.

WITNESSES

*Frankl. Parker*  
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# UNITED STATES PATENT OFFICE.

PHILLIP W. RICHARDS, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN PISTON-PACKING.

Specification forming part of Letters Patent No. **187,985**, dated March 6, 1877; application filed November 27, 1876.

*To all whom it may concern:*

Be it known that I, PHILLIP W. RICHARDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Packing for Piston-Rods, &c., of which the following is a specification:

The nature of my invention consists in the combination, in a peculiar manner, of single nails, wires, or screws with layers of soft material—like woven webbing, &c.

Figure 1 is a plan, showing a part of one of my packing-rings. Fig. 2 is a radial section of the same. Fig. 3 is an elevation of a part of the same.

The body of my improved packing is made of a series of flat pieces of webbing, P P P, of cotton, wool, hemp, &c. N N N is a series of nails, arranged in diagonal lines, as shown in Fig. 3, and passing through the packing, as shown in Figs. 1 and 3. These nails may be clinched on the back, if desirable.

I do not confine myself to any particular style of nail, as I may use screws, pins, or wires.

For convenience in feeding the nails, they may be cut from prepared wire as the work progresses, or from nail-plate on which the nails are already partially made—that is, partly cut into form.

These metallic pieces N N N are arranged so as to form diagonal lines across the wearing-surface of the packing, as shown in Fig. 3, so that, as the packing is compressed, the metal points become nearer and nearer together, but yet will not come in actual contact, nor in the least impair the compressibility and elasticity of the packing.

I claim—

The above described packing, consisting of the strips of webbing P P P, combined with the metallic pieces N N N, arranged substantially as described, and for the purpose set forth.

PHILLIP W. RICHARDS.

Witnesses:

NATHL. EVANS,  
FRANK G. PARKER.