

(No Model.)

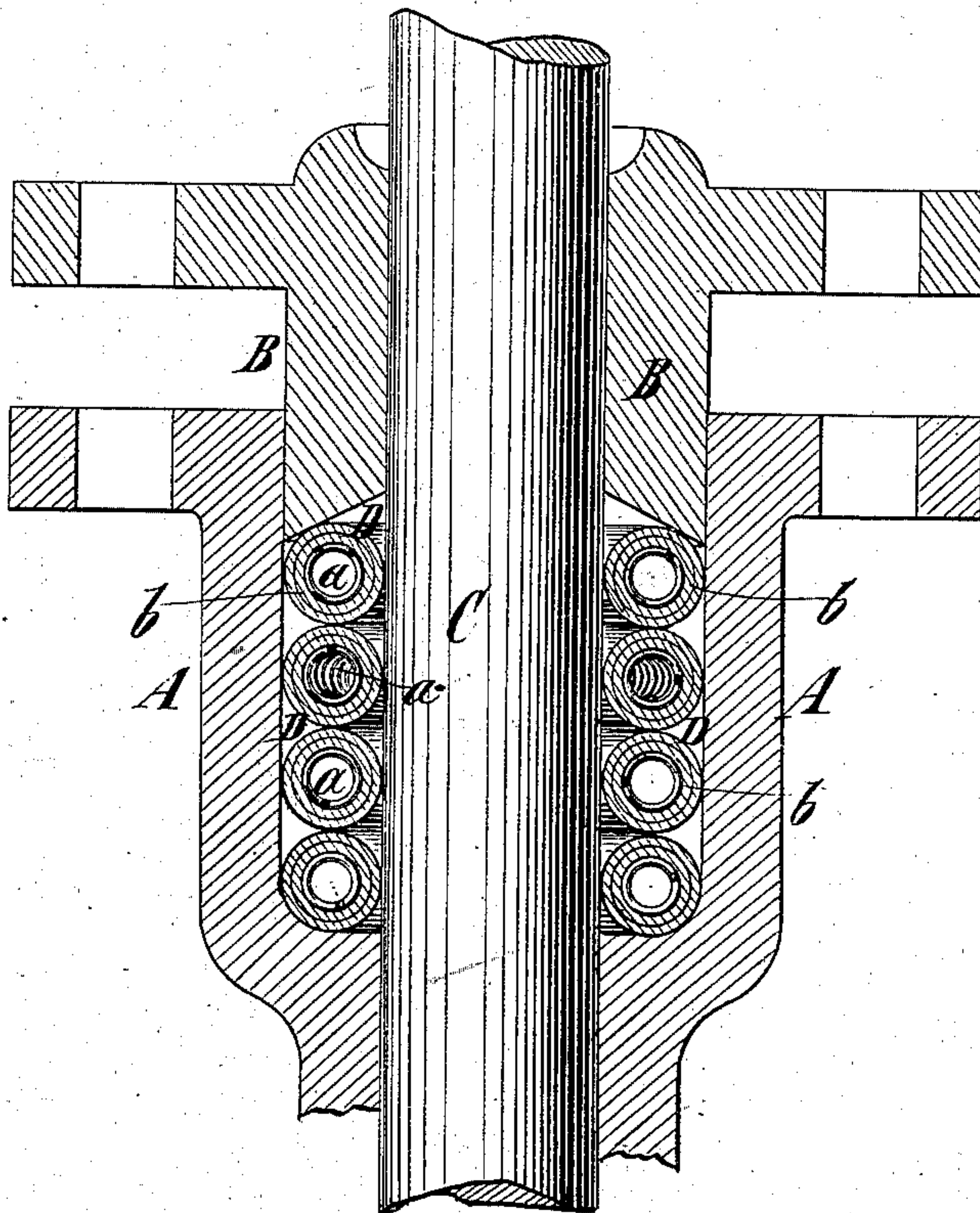
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PACKING FOR STUFFING BOXES, &c.

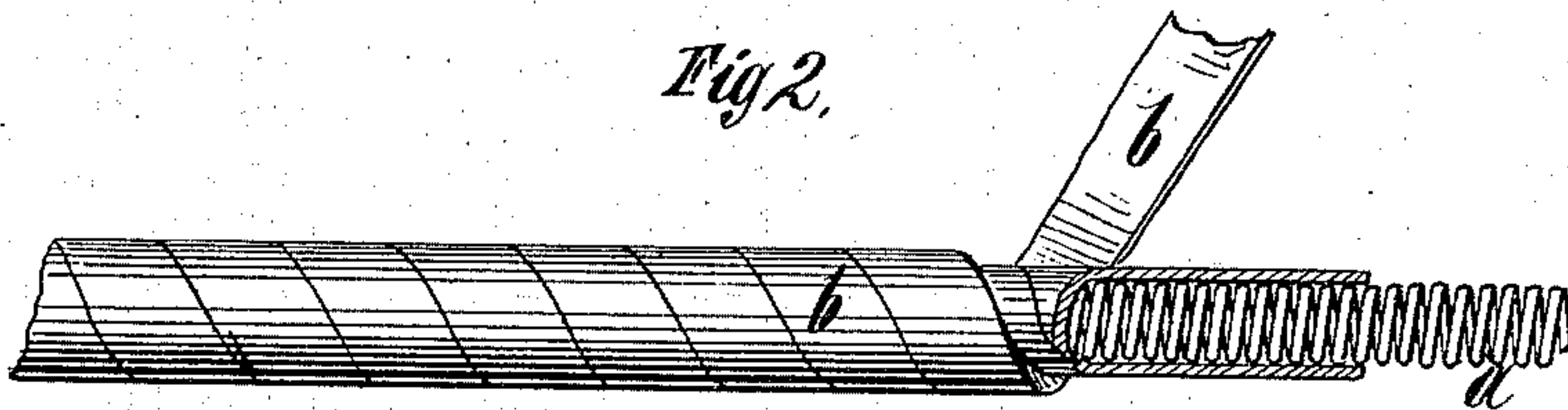
No. 249,560.

Patented Nov. 15, 1881.

*Fig 1.*



*Fig 2.*



*Witnesses*  
*Fred Wagner*  
*Thomas E. Birch*

*Inventor*  
*George Van Wageningen*  
*by his Attorneys*  
*Brown & Brown*



# UNITED STATES PATENT OFFICE.

GEORGE VAN WAGENEN, OF NEW YORK, N. Y., ASSIGNOR TO POLLOCK & VAN WAGENEN, OF SAME PLACE.

## PACKING FOR STUFFING-BOXES, &c.

SPECIFICATION forming part of Letters Patent No. 249,560, dated November 15, 1881.

Application filed April 22, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE VAN WAGENEN, of the city and county of New York, in the State of New York, have invented a certain new and Improved Packing for Stuffing-Boxes, &c., of which the following is a specification.

The object of my invention is to furnish a durable and very elastic packing for stuffing-boxes and other parts of machinery.

10 The invention consists in a packing composed of a metal spiral forming a hollow core and a covering therefor of fibrous or metallic material. The packing may be cut off in pieces of proper length to form rings, or it might be  
15 used in form of coil, and, being inserted in either of these forms into a stuffing-box or packing-space, is, by the pressure of the gland or follower, expanded transversely and caused to exert a pressure upon the rod or other part  
20 sufficient to pack the same tightly and prevent the leakage of steam or other fluid.

The manner of making and applying my improved packing is clearly illustrated in the accompanying drawings, in which—

25 Figure 1 represents a longitudinal section of a stuffing-box and a rod working through the same, and Fig. 2 represents a side view and partial section of a straight piece of the packing.

30 Similar letters of reference designate corresponding parts in both the figures.

A designates a stuffing-box, which may project from any part of an engine or other machine, and B designates the gland thereof.

35 C designates a rod working through the stuffing-box, and which may be supposed to be the piston-rod of an engine.

Referring more particularly to Fig. 2, which represents a straight piece of packing, *a* designates a spiral, which may be composed of steel, brass, or other elastic metal, and of any desirable length. Upon the spiral *a*, which forms a hollow core, is applied a covering, *b*. This covering may be composed of one or more layers or thicknesses of material braided upon the spiral; or it may be composed of a strip or strips of canvas or similar material wrapped upon the spiral core *a*, as seen clearly in Fig. 2; or it may be composed of strips of any anti-

friction metal wrapped around the said core 50

*a*. The covering *b* may be or not saturated or coated with lubricating substances. If said packing be cut in rings, the joints between the ends of the pieces which form the several rings should be broken—that is, they should be so placed that the solid parts of alternate rings will come opposite or away from the joints in the intermediate rings. If the packing were of a size to just fill the stuffing-box, the gland B would only have to be screwed down very lightly at first, and gradually, as the gland is screwed down and the covering *b*, which bears against the rod, becomes worn off, the transverse section of the packing-ring is changed from a circular form to elliptical in a direction transverse to the rod. If the packing were made too large to slip easily into the stuffing-box, it would have to be compressed in entering, so as to give it an elliptical transverse section, the longest dimension being in a direction parallel with the rod. The packing then, by its own elasticity, will tend to assume a circular transverse section, and hence the gland need only serve to retain the packing in the stuffing-box. As the covering *b* is worn away the gland must be screwed down to compress the rings in the direction of the length of the rod, and thereby expand them in a direction transverse thereto.

The elasticity of this packing is such that it will readily adapt itself to irregularities in the stuffing-box or in the size of a worn rod, and it is quite free from the evils of other elastic packings, which soften at a moderate heat, and thereby lose their elasticity.

Heretofore a piston-packing has been composed of a spiral spring arranged to act laterally on a packing-ring to press the latter against the interior of a cylinder. A packing has also been composed of an annular wire covered with rubber and adapted to roll up and down between a plunger and cylinder as the plunger is reciprocated, and a packing has also been composed of a rubber tube covered with fibrous material. These forms of packing, however, do not constitute my invention, and are not claimed by me. Where the spiral spring has been used it has been arranged in



a piston to act on a metal ring, and it has not been provided with an attached covering, thereby forming the packing of itself. A packing composed of a core covered with rubber is  
5 very objectionable, because it will not withstand the excessive heat to which it is necessarily subjected. In my invention I braid around the spiral coil several thicknesses of cotton or other yarn or thread, or I cover it  
10 with canvas, thereby providing an attached covering of textile material. In this manner the elasticity of the coil enables it to closely hug the rod, as when pressed in the transverse section of the coil assumes an elliptical form,  
15 the axis of the ellipse being parallel with the axis of the rod, and its natural tendency to assume circular form causes it to spread laterally and more closely hug the rod without the necessity at first of screwing down the gland.

What I claim as my invention, and desire 20 to secure by Letters Patent, is—

1. As an improved article of manufacture, a packing for piston-rods and other purposes, consisting of a metallic spiral coil provided with an attached covering of packing material 25 which entirely covers and surrounds the spiral coil, substantially as described.

2. A packing for piston-rods and other purposes, consisting of a metallic spiral coil provided with an attached covering of textile 30 material braided or wound thereon, substantially as described.

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Witnesses:

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