

A. L. COLE.
PACKING.

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972,680.

Patented Oct. 11, 1910.

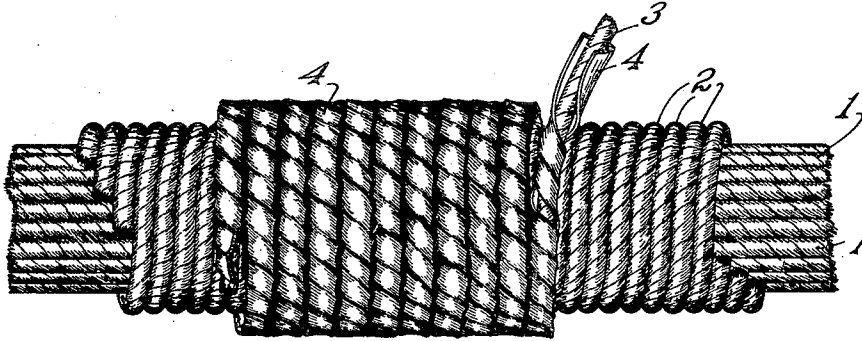


FIG. 1.

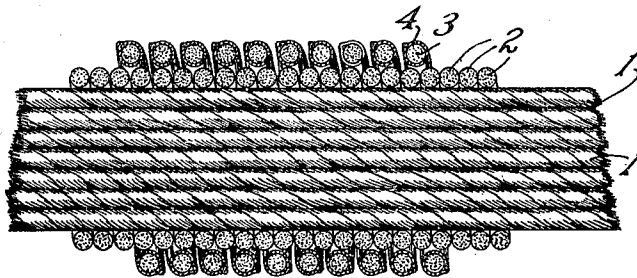


FIG. 2.

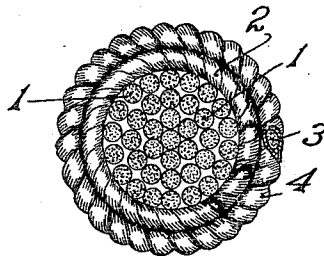


FIG. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

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PACKING.

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To all whom it may concern:

Be it known that I, ALBERT L. COLE, a citizen of the United States, residing at Auburndale, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Packing, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to packing for piston-rods, pumps and machinery generally and especially to packing made up partly of fibrous material and partly of metal.

Heretofore in the use of packings employing metal and fibrous materials in their construction, great difficulty has been experienced where the packing has been subjected to a high temperature because fibrous materials such as hemp, flax and the like are charred or partially destroyed by the heat. Under such conditions the packing shrinks and leaks requiring constant manipulation of the gland in the stuffing-box to take up the shrinkage. The life of such packing is very short and its efficiency is materially decreased by the heat all of which necessitates frequent repacking.

The main object of the invention is to produce a packing made up of a combination of fibrous material and metal which is adapted to resist a high temperature and which can be used under such conditions without being injured by the heat.

Another object is to secure a packing which is flexible and compressible and yet presents a metal surface to the moving parts.

A further object is to obtain simplicity and economy of construction combined with efficiency and durability.

The following is a description of the invention, reference being made to the accompanying drawings, in which:

Figure 1 is a side elevation of a section of the packing; Fig. 2 is a central longitudinal sectional view of the same; and Fig. 3 is a cross-sectional view of the same.

The packing is composed entirely of asbestos fiber and metal arranged and combined as hereinafter described, and is designed to be made in continuous rope form. In the drawings is shown a small section of packing which illustrates the arrangement of the metal and asbestos.

The method of making the packing is as follows: A central body or core is formed of

strings or strands composed entirely of asbestos fiber and laid in substantial parallelism. This core may be made of any size to conform to the size of the finished packing. Around the core is wound one or more of the asbestos strings or strands in a close even and single layer and outside of this is wound an outer layer made up of asbestos strings enveloped entirely in Babbitt or anti-friction metal. If desired, additional layers of the asbestos strings may be wound inside the outer layer of metal-covered strands, but I found for general use that one inner layer is preferable. The metal-covered strand composing the outer transverse layer is made by running off the metal in ribbon form, V-shaped in cross-section, laying the asbestos string within the V and then twisting the metal ribbon around the string. The packing may be made by hand or by suitable machinery.

In the drawings, 1 represents the strands in the core, 2 the strands comprising the inner transverse layer, 3 the strands making up the outer transverse layers, each strand 3 having a metal covering or envelop 4. The strands 1, 2 and 3 are all of the same material, namely, asbestos fiber.

Having been completed in rope form, the packing is then ready for use and may be used by cutting off suitable lengths. In that condition, it is substantially circular in cross-section and is compressible and flexible. For some uses it may be preferable to make the packing square, triangular or other form in cross-section or to compress it, all of which may be done by passing the packing between rolls suitably formed and adjusted. Furthermore packing in ring form may be prepared by taking suitable lengths and molding and compressing them in ring molds. In fact the packing may be given various forms and degrees of hardness by rolls or molds and by compression in order to conform to different conditions of use.

It will be observed that since the packing is composed largely of asbestos fiber, extreme heat will have no effect upon the packing and it will wear until the outer metal covered layer is worn entirely away. After the packing has been installed for a short period, it will be found that the abrasion of the moving parts forms the metal covering upon that part of the packing in contact with them into a smooth bearing

surface having all the advantages of metallic packing.

What is claimed is:—

5 1. In a packing, the combination of a core or central body and an outer body composed of an inner layer of strands of asbestos and an outer layer of strands of asbestos enveloped in metal; both of said layers being wound transversely around said core.

10 2. In a packing, the combination of a core or central body made up of strands of asbestos and an outer body composed of an

inner layer of asbestos and an outer layer of asbestos strands enveloped in metal; both of said layers being wound transversely 15 around said core.

In testimony whereof, I hereunto set my hand, in the presence of two subscribing witnesses, this the seventh day of July, 1909.

ALBERT L. COLE.

Witnesses:

F. J. V. DAKIN,
MABELLE MACKPARRON.