

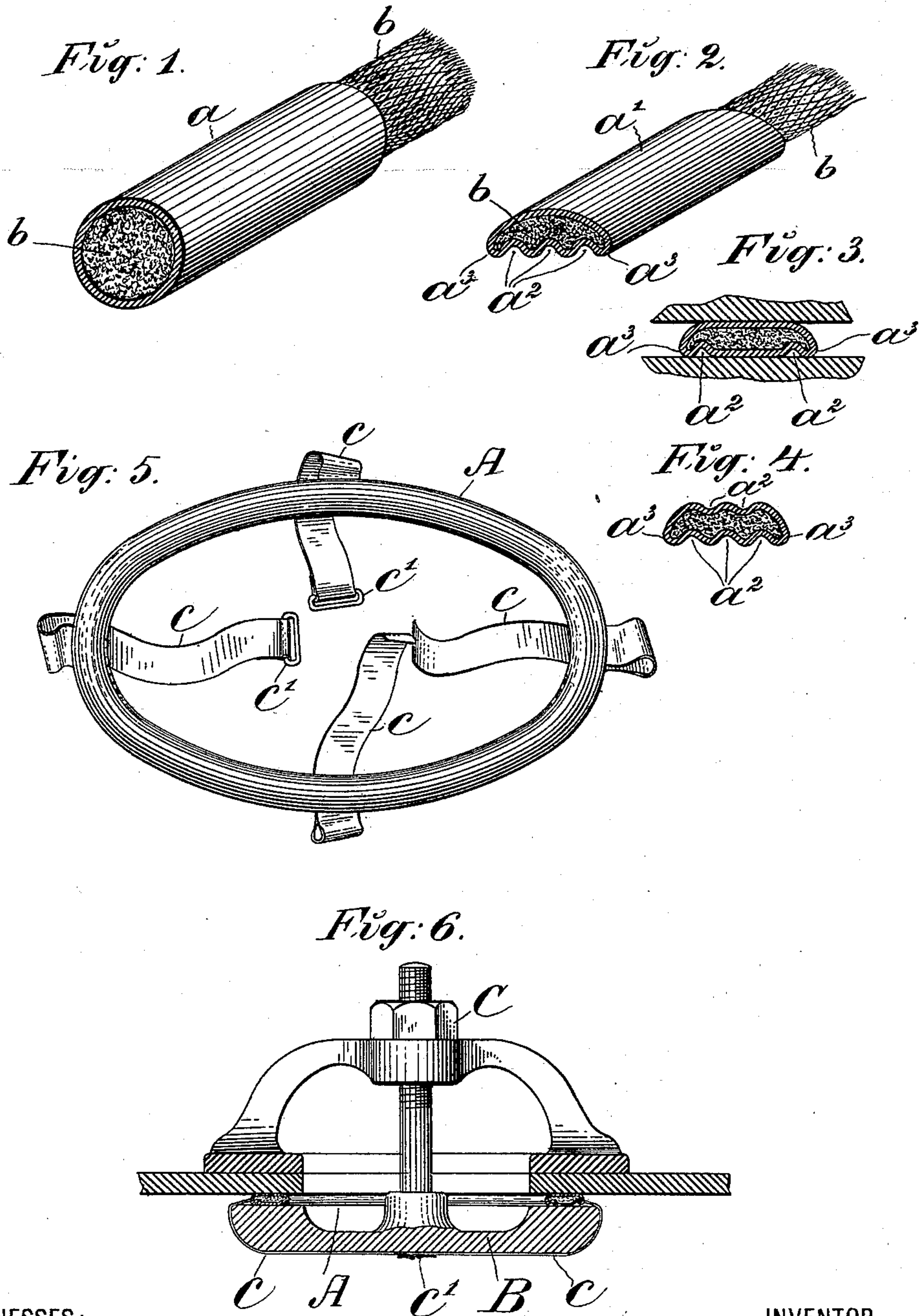
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Patented Apr. 11, 1899.

G. T. McDONDLAND.
PACKING.

(Application filed Jan. 10, 1899.)

(No Model.)



WITNESSES:

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PACKING.

SPECIFICATION forming part of Letters Patent No. 622,899, dated April 11, 1899.

Application filed January 10, 1899. Serial No. 701,716. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. McDONDLAND, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Packing, of which the following is a specification.

This invention relates to that class of packing which consists of a tube or jacket of soft metal and an inner cushion of a fibrous material. Usually in such compound packing the outer covering is of lead and this covering is designed to protect and inclose the inner fibrous material, as well as to form a soft packing material to prevent leakage at the packed joint, and ordinarily the inclosed cushion is of asbestos. This latter is designed to provide enough elasticity to overcome the non-resiliency of the soft inclosing metal, and thus obviate leakage at the joint from repeated expansion and contraction of the parts at the joint. Such packing is commonly employed to pack the joints about manholes in boilers, the flange-joints of pipes, pistons, and various other joints, particularly where leakage of steam is to be avoided.

The object of the present invention is in part to provide a compound packing of soft metal with an interiorly-situated fibrous cushion which will insure a tight joint and at the same time insure a resilient cushion to maintain the joint tight after expansion and contraction of the adjacent parts.

It also has for its object to provide the packing ring or gasket with means for securing it in proper position while the parts are being fitted together, so that where there is no flange or rim on the part—as a manhole cover, for example—to guide and hold the packing ring or gasket in position the latter may be secured by the devices connected to it and which will be hereinafter fully described.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a perspective view of a pipe or tube of lead containing a fibrous filling and illustrating the first step in the manufacture of the packing. Fig. 2 is a perspective view of the packing after the tube of Fig. 1 has passed through the rolls or dies and is ready for use. Fig. 3 is a cross-section showing the packing

compressed. Fig. 4 is a cross-section of the packing of a form a little different from that illustrated in Fig. 2. Fig. 5 shows a gasket or ring of the packing adapted for a manhole and provided with securing-straps. Fig. 6 is a cross-section of a manhole, showing the gasket or packing-ring *in situ*.

Referring primarily to Fig. 1, *a* is a cylindrical tube of some soft metal, as lead or lead alloy, and *b* is a filling in said tube of some suitable fibrous material, preferably asbestos. This fiber-filled tube is passed between rolls or other shaping devices and has imparted to it the form seen in Fig. 2—that is to say, the tube of metal is somewhat flattened, its crown *a'* being convex or rounded, but flatter than the original tube *a*, and its opposite face or base corrugated longitudinally so as to form in its exterior channels or grooves *a''*. The lateral edges *a'''* are rounded, as clearly shown.

When the packing is placed between two members to pack the joint and compressed, as shown in Fig. 3, the centrally-situated corrugation or corrugations in the lower face of the packing are flattened and more or less obliterated. This corrugated structure serves a double purpose. It enables the soft metal to fit itself the more closely to the surface, and thus to produce a hermetic joint without excessive pressure, and it serves to permit some lateral expansion of the metal jacket under the pressure. This prevents the bursting of the metal envelop, due to the resistance of the inclosed fiber to pack more closely. The corrugations may be formed on both faces of the packing, as shown in Fig. 4.

Fig. 5 illustrates the packing put into a ring form and elliptical shape, as usually required for manholes and the like. This may be effected in the usual way by bending the packing about a form and joining the abutting ends by soldering or otherwise.

Fig. 6 shows how the packing ring or gasket *A* is applied to close the joint about a manhole. In some constructions of this character it is difficult to keep the gasket *A* in place on the manhole-cover *B* while the latter is being placed and drawn up by the nut *C*, and in order to obviate this difficulty the gasket is (or may be when necessary) provided

with strips of thin flexible metal, as copper or thin tin-plate, and these strips are adapted to be passed around the cover B like straps and secured together at the back or inner
5 face of the said cover.

The strips *c*, Figs. 5 and 6, will be arranged in pairs by preference and one strip of each pair be provided with a loop *c'*, through which the end of the other or opposite strip of the
10 pair is passed when the strips are in place, Fig. 6, and then bent back on itself. This provides a sufficiently secure fastening to enable the cover B to be placed and secured without disturbing the gasket A. The strips
15 *c* are secured to the outer lateral edge of the gasket, so that they do not interpose between the gasket and the surfaces at the joint. They may be secured to the gasket by forming a slit in the metal of the latter, inserting
20 the tinned end of the strip *c* therein, and then soldering it fast.

The employment of a cylindrical lead pipe for the metal casing or jacket of the packing, Fig. 1, and then rolling or pressing this pipe
25 into the proper final shape, Fig. 2, is not essential to my invention. The packing may be constructed in any manner desired, but the procedure described where a cylindrical tube of the metal is employed as a basis is
30 simple and convenient.

In lieu of making the straps *c* of flat metal they may of course be of flexible wire, and the straps may be secured together at the back of the cover B in any convenient manner.

Having thus described my invention, I 35 claim—

1. A compound packing comprising a tubular casing of soft metal inclosing a cushion of fibrous material, the said casing having a flattened form and having a flattened face 40 longitudinally corrugated.

2. A compound packing comprising a tubular casing of soft metal inclosing a cushion of fibrous material, the said metal casing having a rounded crown *a'*, a flattened and lon- 45 gitudinally-corrugated, face, opposite to the crown *a'*, and rounded lateral edges *a''*.

3. A packing ring or gasket composed of a tubular casing of soft metal inclosing a cushion of fibrous material, said gasket having a 50 flattened face with a corrugation extending lengthwise thereof and about the middle thereof, substantially as and for the purposes set forth.

4. A packing ring or gasket consisting of a 55 tubular casing of soft metal inclosing a cushion of fibrous material, said gasket having a flattened and longitudinally-corrugated face and straps of thin metal *c* for securing it in place, substantially as set forth. 60

In witness whereof I have hereunto signed my name, this 7th day of January, 1899, in the presence of two subscribing witnesses.

GEORGE T. McDONDLAND.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.