Jan. 1, 1924 1,479,148

C. I. E. MASTIN

PACKING

Original Filed Aug. 4, 1920

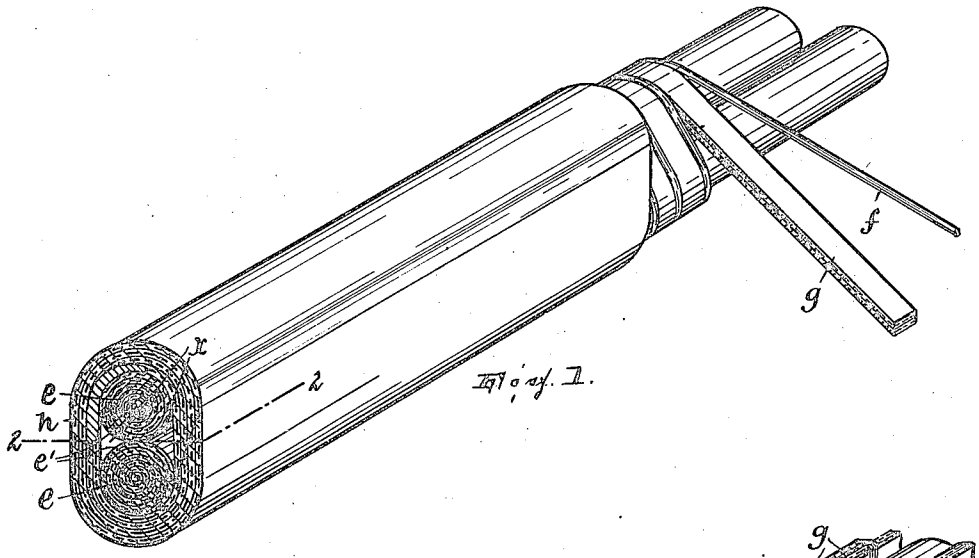


Fig. 1.

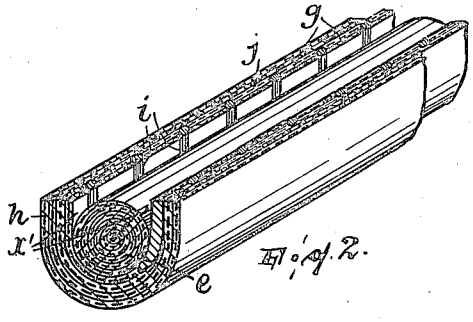


Fig. 2.

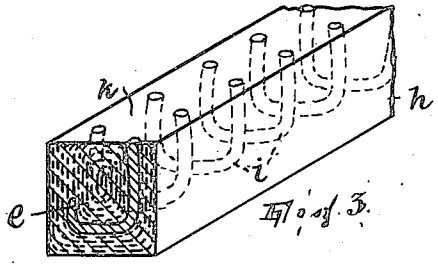


Fig. 3.

WITNESS

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UNITED STATES PATENT OFFICE.

CHARLES I. E. MASTIN, OF MIDLAND PARK, NEW JERSEY.

PACKING.

Original application filed August 4, 1920, Serial No. 401,145. Divided and this application filed December 5, 1921. Serial No. 520,197.

To all whom it may concern:

Be it known that I, CHARLES I. E. MASTIN, a citizen of the United States, residing at Midland Park, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Packings, of which the following is a specification.

This invention relates to packing materials, and particularly packing materials formed elongated and used for purposes where one of the packed parts moves relatively to the other, as a piston rod in its gland, and it is therefore necessary or desirable to provide the packing with means to resist wear or other undesirable results incident to such movement. My object is to provide an elongated packing which is well adapted for use, for example, as a packing of the particular kind above indicated and which will have a high degree of flexibility, so that it may be entered in packing relation to the parts to be packed with the greatest possible facility. A further object is to improve, especially by simplifying, the art of manufacturing elongated packings, whether having wear-re-resisting means or not.

This application is a division of my application for Patent No. 1,473,597.

The drawing illustrates, in

Figure 1 my method of forming the packing, the condition of the material employed being shown at two different stages in the method;

Figure 2 one of the pieces produced by a severing operation performed in plane 2—2 in Fig. 1; and

Figure 3 the said piece after compressing the same in a vulcanizing mold.

In the illustrated embodiment *e* designates a plurality of flexible cores arranged parallel to and in longitudinal contact with each other, each core consisting of a fabric sheet impregnated, coated or otherwise treated with rubber and then rolled up from one edge to the other in a compact mass or roll. Each of these cores presents a salient (in the present instance, a convex) surface *e'* to the other.

Around these, transversely, are arranged coils *f*, *g*. In the present example the coils *f* are composed of a wear-resisting material, as wire, the chief constituent of which I prefer shall be graphite because of its lubricating character, and the coils *g* are composed of material more yielding than the material of the coils *f*, as a fabric or layers of fabric impregnated, coated or made to alternate with rubber. The coils *f* alternate with the coils *g*, in the present example one to one. The coils *f* and *g* are advantageously formed by wrapping suitable lengths of the material of which they are composed side by side and spirally around the two cores from end to end thereof. Preferably, after the coils have been arranged as explained with reference to the cores, a sheet of suitable material, as fabric *h* impregnated, coated or otherwise treated with rubber, is wrapped around the mass formed. It will be noted that, on account of the salience (convexity) presented by each core to the other, there will be formed opposite crevices *x* when they are assembled as described. The constituents of the mass are adhesively joined together due to the presence of rubber therein.

Then the mass is severed in a plane indicated by 2—2 in Fig. 1, i. e., between the two cores, producing two packing pieces, one of which is shown in Fig. 2. This leaves bent or arched wear-resisting wires or wire pieces *i* embedded in each piece, the ends of which are exposed at the working face *j* of the piece; it also leaves edge-portions on the piece which are spaced from the core *e* therein by longitudinal crevices *x'* which are halves of the crevices *x*.

Usually the two pieces resulting after the severing are vulcanized and subjected to pressure, as in a vulcanizing mold, such pressure producing a closing-up of the crevices *x'* as the result of its being exerted substantially parallel with the plane of severing as well as in a direction perpendicular to said plane and compressing the piece into a compact mass so as to insure the integrity and stability of the whole and leaving the working face *k* thereof an uninterrupted surface. Figure 3 shows the vulcanized and compressed product.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The method of forming simultaneously two elongated packings each having a longitudinal working face composed in part of wear-resisting material and in part of material more yielding than the wear-resisting material which consists in forming an elon-

gated mass whose constituents are adhesively joined together and including coils arranged around a common axis extending longitudinally of the mass and side by side and alternating ones of which are composed of wear-resisting material and the remainder of material more yielding than the wear-resisting material, and then severing the mass lengthwise in a plane bisecting the coils.

2. The method of forming simultaneously two elongated packings each having a longitudinal working face composed in part of wear-resisting material and in part of material more yielding than the wear-resisting material which consists in forming an elongated mass whose constituents are adhesively joined together and including a pair of cores arranged side by side and substantially parallel and coils arranged transversely around said cores side by side and alternating ones of which are composed of wear-resisting material and the remainder of material more yielding than the wear-resisting material, and then severing the mass in a plane between the two cores.

3. The method of forming an elongated packing which consists in wrapping flexible material transversely around two elongated cores placed side by side and parallel and one of which is composed of compressible material and has a longitudinal salient face presented to the other and forming therewith opposite longitudinal crevices, one of said materials containing rubber, then severing the wrapped flexible material in a plane between the two cores to form two elongated pieces, and then subjecting the piece containing the core with the salient face to heat and simultaneously to compression in a direction substantially parallel with the plane of severing, whereby to close up the half-crevices left in said piece.

4. A packing including a body of yielding material having a working face, and bent wear-resisting wires embedded in the body and each having both ends thereof exposed at said face.

5. A packing including a body of yielding material having a working face, and arched wear-resisting wires embedded in the body and each having both ends thereof exposed at said face.

6. A packing including an elongated body of yielding material having a longitudinal working face, and arched wear-resisting wires straddling a longitudinal interior portion of the body and having both ends thereof exposed at said face, other portions of said body being interposed between the wires.

In testimony whereof I affix my signature.

CHARLES I. E. MASTIN.