

No. 753,494.

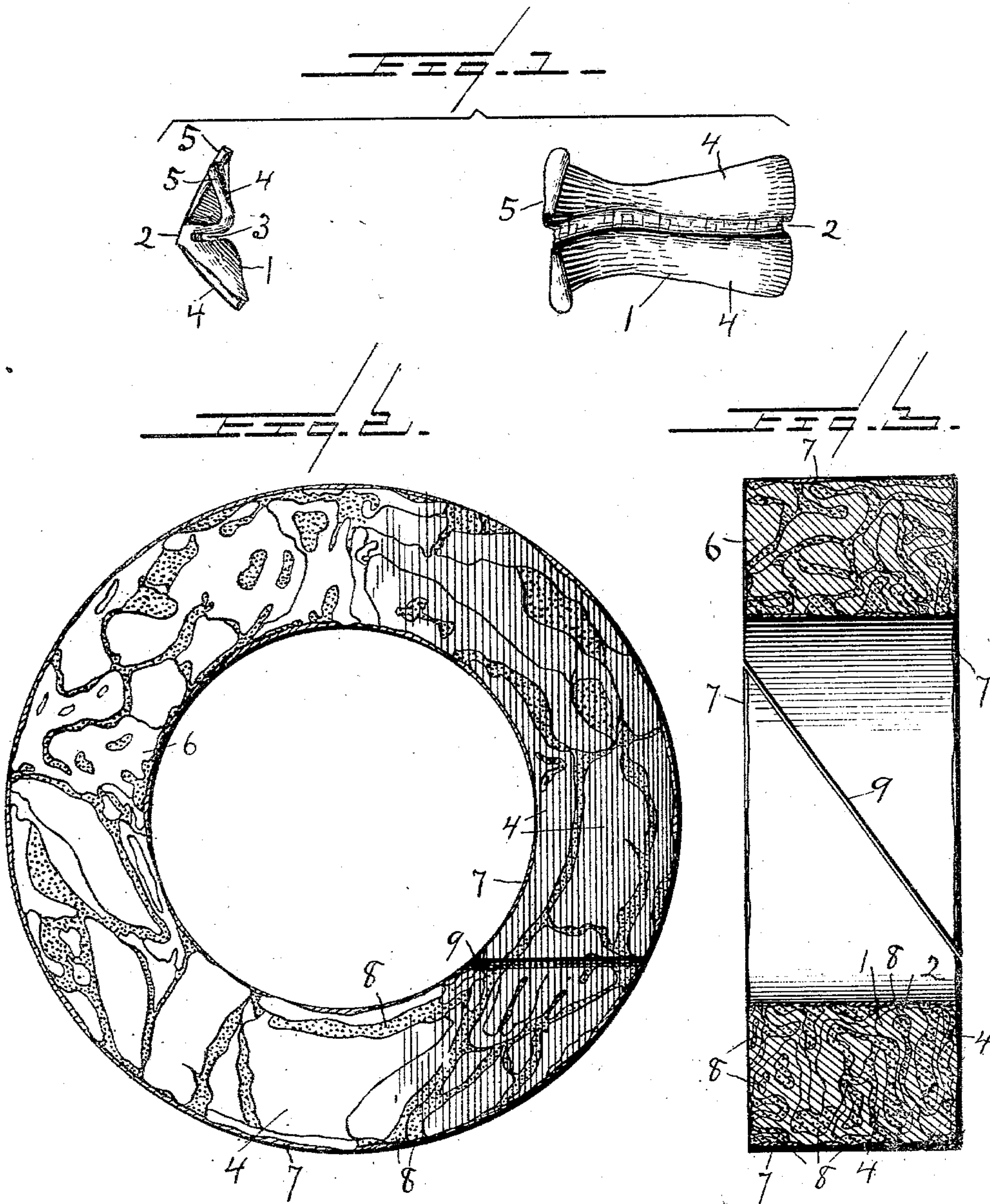
PATENTED MAR. 1, 1904.

E. JAMES.
METALLIC PACKING.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Wm. F. Doyle
F. N. Barber

INVENTOR.

Edward James,
BY *Wm. L. Pierce*
his Attorney

No. 753,494.

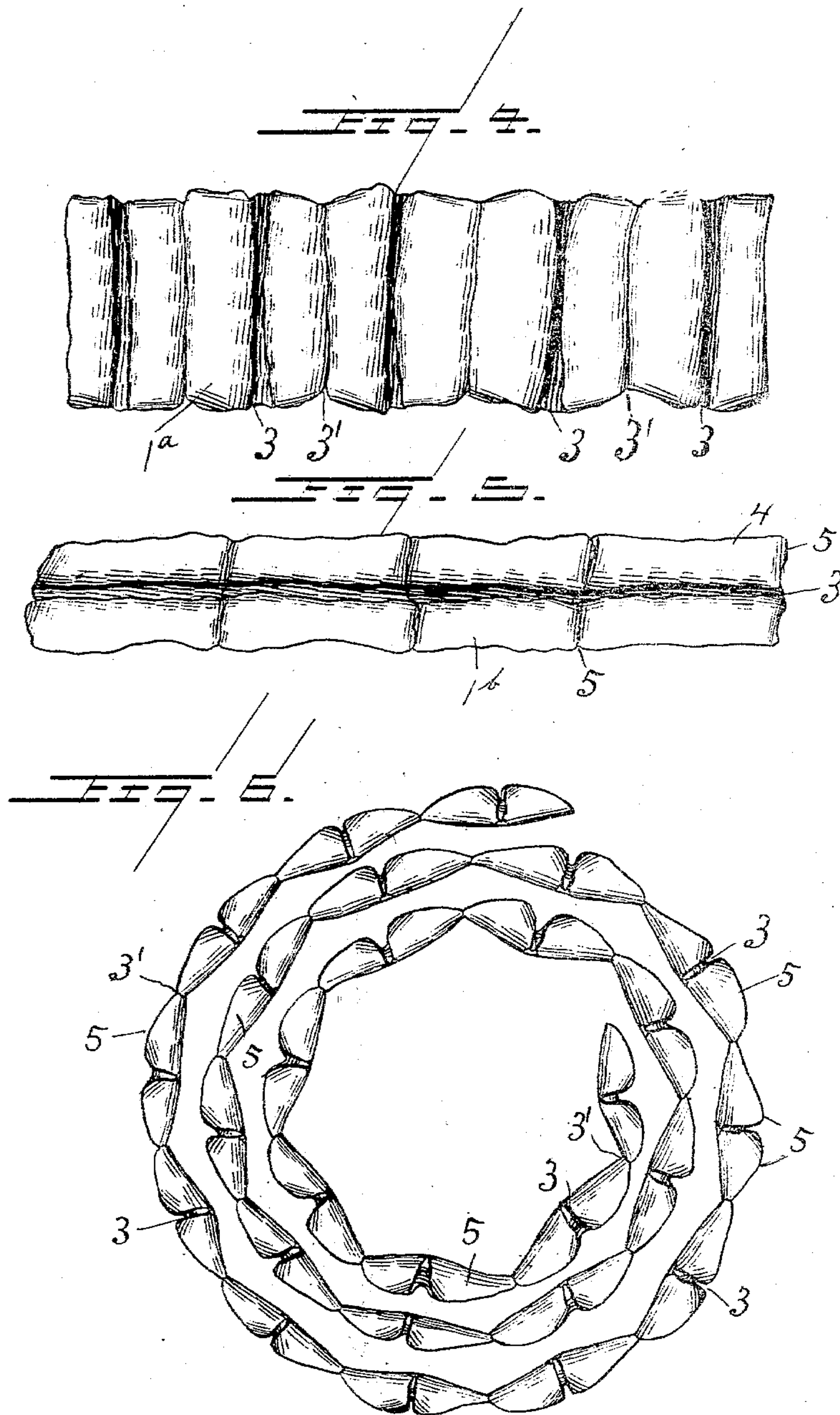
PATENTED MAR. 1, 1904.

E. JAMES.
METALLIC PACKING.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

Wm. F. Doyle.

F. N. Barber

INVENTOR

Edward James,
BY *Wm. L. Pierce*
his Attorney

UNITED STATES PATENT OFFICE.

EDWARD JAMES, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO WILLIAM G. GORDON, OF EDGEWOOD BOROUGH, ALLEGHENY
COUNTY, PENNSYLVANIA.

METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 753,494, dated March 1, 1904.

Application filed June 8, 1903. Serial No. 160,504. (No model.)

To all whom it may concern:

Be it known that I, EDWARD JAMES, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Metallic Packing, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure I is a view showing at the left-hand side an end elevation and at the right-hand side a side elevation illustrating one form of metal strip which I use; Fig. II, a section of a packing-ring made in accordance with my invention, the section being taken transversely of the axis of the ring and on a plane immediately under the metal coating; Fig. III, a section of the ring, taken so as to include the axis thereof; Fig. IV, a side elevation of a second form of metal strip which I may use; Fig. V, a similar view of a third form of metal strip; and Fig. VI, a plan view of a strip like that shown in Fig. IV, but coiled.

My invention relates to metallic packing, and has for its objects the following: first, to put upon the market a packing which can be roughly handled without breaking or disintegrating; second, to furnish a packing which will retain the lubricant incorporated therewith for a much longer time than the metallic packing known to the trade; third, to provide a packing that has a high degree of elasticity, and, fourth, to do away with the use of washers or bull-rings.

My packing is made up of graphite and metallic strips of peculiar construction, though capable of some modification. The metal is made up of strips of any approved kind of antifriction metal bent so as to have one or more grooves and outwardly curved or bent sides.

Referring to Figs. I, II, and III, the strips are represented by the numeral 1 and are as I make them quite thin and from three-fourths of an inch to an inch long, though they may be made longer or shorter, if desired. They are bent somewhat V-shaped,

forming the angle 2, whereby a central longitudinal groove 3 is formed, though a plurality of grooves may be formed as well. The sides 4 of the strips are curled or recurved transversely, and the ends 5 are also preferably curled. The sides and ends are curled so as to be convex on the inner sides of the V-shaped strips.

To make my packing, I first wet the strips and then mix them with some lubricant, as graphite, so that the metal becomes thoroughly coated with the same. I then put a quantity of the mixture into a ring-shaped die and press it into a ring form, as indicated by 6 in Fig. II. I then take the pressed ring out of the mold, dip it into melted antifriction metal, which when cool forms a strong casing or coating 7, which will retain the packing intact in spite of the rough handling to which it will be subject in shipping. The coating 7 may be put on by electroplating and may consist of copper or other metal, as Babbitt metal.

The graphite (indicated by dotted surfaces 8) is caught in the grooves in the strips and also in the pockets made by the curling sides and ends of the strips as they are closed by the pressing operation. The imprisoned graphite in the grooves and pockets does not waste away or escape rapidly, because it can reach the rod in the stuffing-box only when the metal wears through into the grooves or pockets containing it. The graphite in the pockets and grooves cannot flow around the strips so as to reach the rod, as when pellets or small fragments of metal are used.

The metal strips 1^a shown in Figs. IV and VI are a series of the strips shown in Fig. I, united by the edges of the sides 4, so as to form grooves 3' on the side of the strip opposite the grooves 3. The strip 1^a can be applied in any manner to the shaping-die; but I prefer to form it into a coil, as shown in Fig. VI. Enough coils will be used to form the ring, the graphite being applied the same as when the strips 1 are used.

The strip 1^b shown on Fig. V is a series of strips 1, united by their ends 5. The process of making the rings from these strips is the

same as when the strips 1^a are used. These strips need not have the angles or grooves 3² shown, if preferred, though they will under pressure form a larger number of graphite-
5 holding pockets.

My packing can be applied like soft packings, since it will under the pressure of a gland flow, so as to fill the stuffing-box no matter what its shape may be. It can be broken apart
10 and the fragments reunited about a piston-rod, the pressure of the gland making it again in a solid ring. It saves the expense of washers at the ends of the stuffing-box.

Where the rings will not be subject to break-
15 age the metal coating may be omitted, though it will be found more agreeable to handle if it be used in all cases.

Preferably I saw or cut a kerf 9 diagonally through one side of the ring after the coating
20 is put on. The ring can be spread at the kerf, so as to permit the ring to pass around a piston-rod, the ring being then closed tightly on the same. When the long strips are used, the ring will not break when applied to a rod, as
25 just stated, and the ring has much more elasticity. The kerf being diagonal allows the

bevel sides thereof to slide on each other to fit the piston-rod.

Having described my invention, what I claim is—

1. A packing composed of a lubricant and one or more sheets of antifriction metal V-shaped in cross-section, so that when pressed together the metal forms lubricant-retaining
30 pockets or grooves.

2. A packing composed of a lubricant and one or more sheets of antifriction metal having recurved edges, the latter when pressed capable of forming lubricant-retaining pockets.
35

3. A strip of antifriction metal for packings, consisting of a thin sheet of metal having a V-shaped cross-section and recurved edges.
40

4. A packing consisting of thin sheets of antifriction metal having a V-shaped cross-section and a lubricant pressed together, and
45 a coating of antifriction metal.

Signed at Pittsburg, Pennsylvania, this 19th day of May, 1903.

EDWARD JAMES.

Witnesses:

F. N. BARBER,
M. A. BUSHMAN.