

No. 725,253.

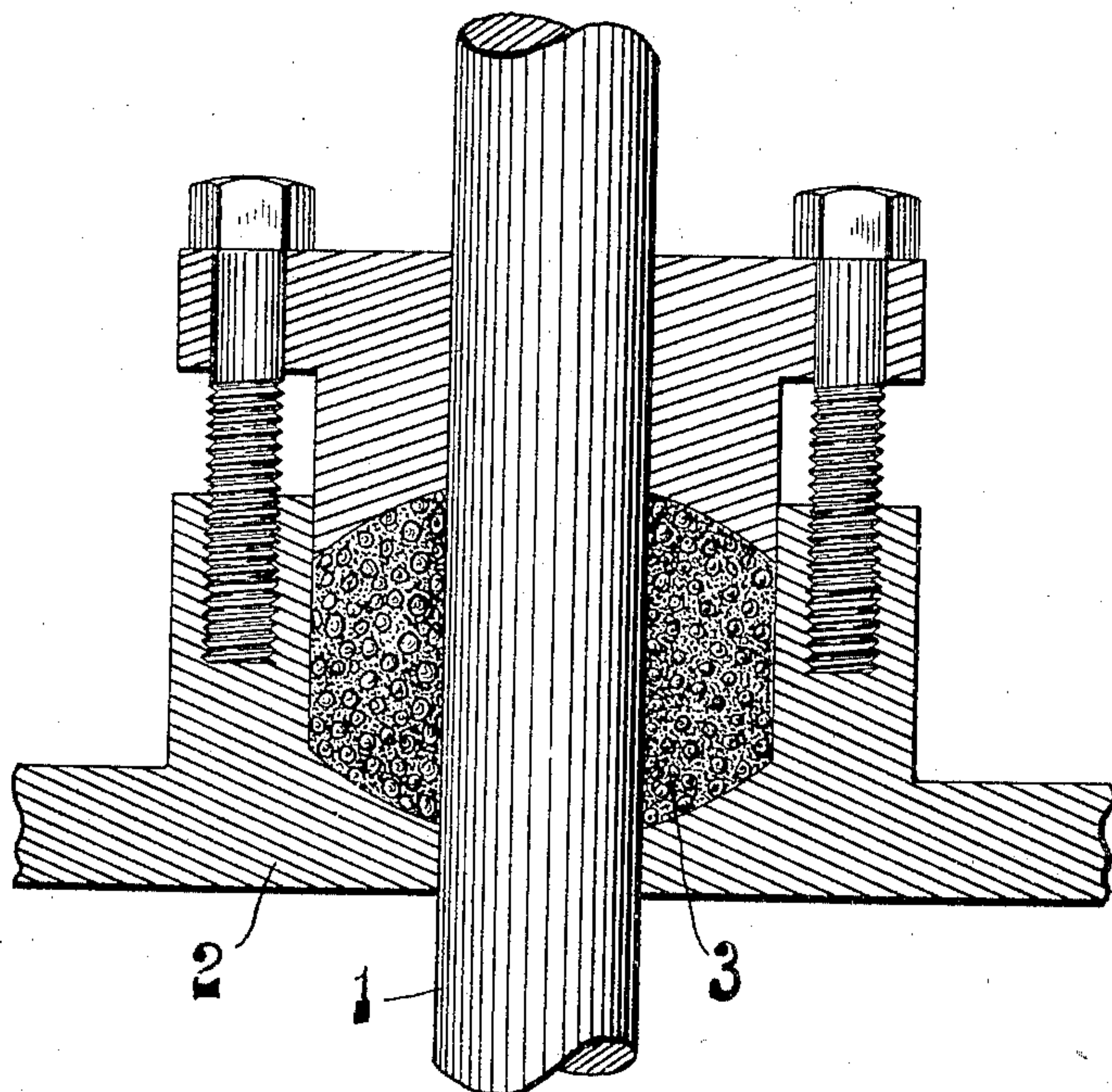
PATENTED APR. 14, 1903.

E. JAMES.

METALLIC PACKING.

APPLICATION FILED APR. 10, 1902.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 725,253, dated April 14, 1903.

Application filed April 10, 1902. Serial No. 102,239. (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.

My invention relates to compositions employed as packings for steam-engines, pumps, air-compressors, and similar devices; and its object is to provide a metallic packing which may be adjusted to all sizes of piston-rods, stuffing-boxes, and the like and at the same time is clear and easily divisible.

Another object is to provide a packing that has the least possible friction on the rod and as soon as applied makes a perfect steam, air, and water tight joint without the necessity of frequent and undue pressure from the gland until it becomes set or worn to a bearing.

The drawing is a vertical section of a stuffing-box, showing my invention.

The drawing shows a rod 1, together with a stuffing-box 2, containing my packing 3, compressed closely about the rod into an adherent mass.

My composition consists of metallic pellets and graphite together with a suitable non-greasy binding material. Preferably the pellets are composed of tin, aluminium, copper, and antimony, forming what may be called an "aluminium Babbitt metal." The graphite may be in the powdered or in the flaky condition, or both forms may be united. The binding material is preferably pure beeswax free from grease, though other kinds of non-greasy wax may be used. The wax is melted and thoroughly mixed with the graphite by any suitable means. When the mixture becomes cold, it forms a more or less hard mass that does not soil the fingers as a greasy mixture does and that can be easily subdivided and placed in stuffing-boxes.

Although I may form my composition into a mass adherent throughout the whole, I prefer to form the same into separated pellets, each having the three ingredients above described. The pellets are of sufficient hardness to prevent their amalgamation while handled or transported, and yet are pliable

enough to readily yield to the pressure of glands, so as to fill stuffing-boxes completely.

In use I pour into the stuffing-box a sufficient number of coated pellets to fill the same to the desired height. I then screw down the gland. The pressure of the gland causes the pellets to yield and form an adherent mass, which adjusts itself to the shape of the piston-rod and stuffing-box, forming a joint which is air, steam, or water tight. I find that no material adheres to the piston-rod and that therefore the contents of the stuffing-box is not carried off, as is the case with greasy packings. The result is I do not have to screw down the gland after it is once applied, nor do I have to apply undue pressure to the gland, as is often done when grease or fugitive material is used in order that after the grease or said material has escaped the pressure may be sufficient.

I find it preferable to use metallic pellets of different sizes, the smaller ones largely filling the spaces between the larger ones. I also find that my pellets do not score piston-rods as do those made of a lead Babbitt metal.

The graphite and wax may be used in about equal proportions; but the precise proportion stated is not necessary. In fact, the proportions may vary considerably from that given. The proportions of metallic pellets to the other ingredients may also vary; but the latter should be in sufficient quantity to fill all the interstices between the pellets and make a close fit about the rod.

I believe that I am the first to employ as a packing separated metallic pellets coated with an antifriction material, and I intend to claim the same broadly. I consider that pellet-like masses, even of considerable size, come within the scope of my invention, even though more than one metallic pellet were in each mass. I do not restrict myself to coated pellets of any particular size or shape.

I find it better to use a metallic or fibrous ring at each end of the packing-box, especially where there is a loose fit between the piston-rod and the box.

Having described my invention, what I claim is—

1. A packing for stuffing-boxes and the like composed of segregated antifriction masses,

made of metal coated with antifriction material.

2. A packing for stuffing-boxes and the like composed of segregated antifriction-pellets,
5 made of metal coated with antifriction material.

3. A packing for stuffing-boxes and the like composed of segregated antifriction-pellets made of metal coated with a pliable antifric-
10 tion material.

4. A packing for stuffing-boxes and the like composed of segregated antifriction-pellets, made of metal coated with a mixture of graph-
15 ite and a material to bind the metal and graphite together.

5. A packing for stuffing-boxes and the like composed of segregated antifriction-pellets made of metal coated with a mixture of graph-
ite and wax.

6. A packing for stuffing-boxes and the like 20 composed of antifriction-pellets each made of metal coated with a mixture of graphite and a non-greasy wax.

Signed at Pittsburg this 7th day of April, 1902.

EDWARD JAMES.

Witnesses:

F. N. BARBER,
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