

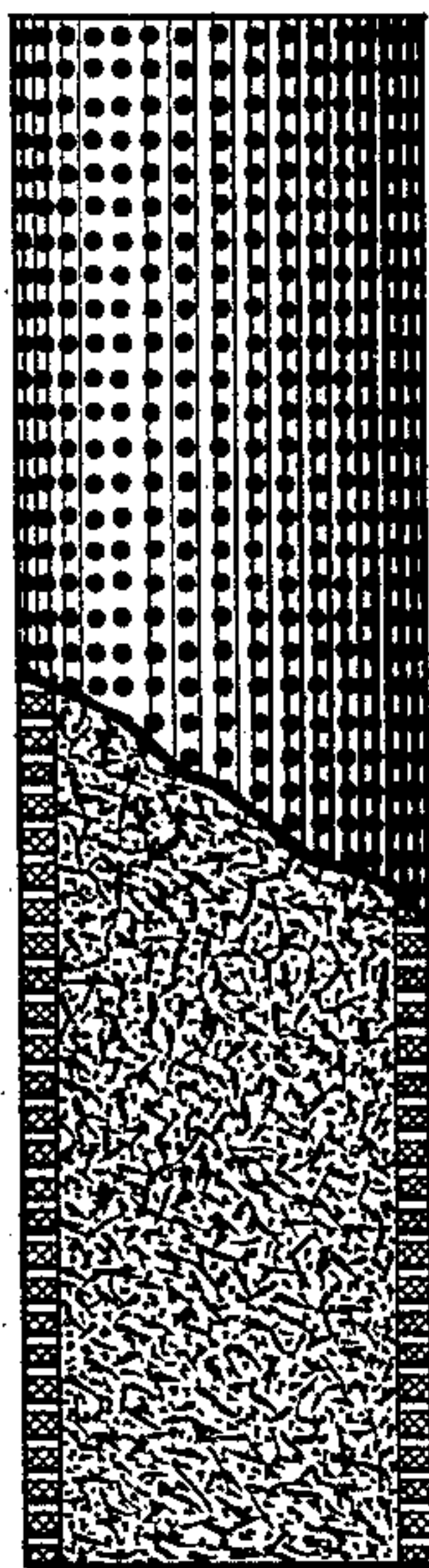
No. 721,440.

PATENTED FEB. 24, 1903.

G. R. HAYDEN.  
PACKING MATERIAL.

APPLICATION FILED OCT. 31, 1902.

NO MODEL.



WITNESSES:

*Herbert Bradley*  
*Fred Strehner*

INVENTOR

*George R. Hayden*  
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# UNITED STATES PATENT OFFICE.

GEORGE R. HAYDEN, OF ALLEGHENY, PENNSYLVANIA.

## PACKING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 721,440, dated February 24, 1903.

Application filed October 31, 1902. Serial No. 129,520. (No specimens.)

*To all whom it may concern:*

Be it known that I, GEORGE R. HAYDEN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Packing Material, of which improvements the following is a specification.

The invention described herein relates to certain improvements in packings for piston-rods, &c., and has for its object a combination of materials of such character as will prevent any leakage past it and will present a smooth antifriction-surface to the moving parts with which it is held in contact.

The invention is hereinafter more fully described and claimed.

In the accompanying drawing, forming a part of this specification, is shown a form of packing embodying my improvement.

In the practice of my invention I provide a carrying-body formed of a metal or alloy suitable for bearings for movable parts. An alloy suitable for this purpose consists of ten (10) parts of nickel, sixteen (16) parts of copper, four (4) parts of antimony, and seventy (70) parts of tin. The invention is not, however, limited to the alloy mentioned, as the proportions of the ingredients may be changed, as well as the ingredients themselves, it being only necessary that the carrying body or base should be formed of a metal or metals which will present a comparatively soft smooth surface to moving parts. The metal or alloy employed is changed to a spongy condition, which can be conveniently effected by melting the metal or alloy and pouring through a sieve into a body of water, the sieve being held at a height of five or six feet, more or less, above the surface of the water. By this treatment a spongy mass is formed, which is subsequently broken up, forming small spongy or porous particles. To this spongy carrying body or base is added a mixture of finely-divided lead or graphite equal in amount to about one-third of the base. In preparing the mixture the lead is melted in a suitable vessel and graphite, finely divided, is stirred in while the lead is maintained at a melting temperature. As a result of this

treatment the lead and graphite are intimately mixed, producing a fine flaky material having high lubricating qualities and capable of forming a dense surface when compacted. This mixture is thoroughly intermingled with the spongy carrying-body, the fine particles or flakes entering into the pores of the metal particles and being held in the interstices between adjacent particles. It is preferred to place the bearing material thus formed in a porous holder 1, as shown in the drawing. This holder may be in the form of a soft lead tube having perforated walls or may be made of loosely-woven fiber, so that the packing material proper—i. e., the lead and graphite—may be forced out through the walls of the holder. Ordinarily the lubricating-oil added from time to time to the parts to which the packing is applied will render the mixture of lead and graphite sufficiently soft to readily flow out from the carrying material and through the holder when pressure is applied; but, if desired, a small quantity of lubricating oil or grease may be added to the graphite and lead before mixing with the spongy carrying metal or subsequent thereto.

In mixing the lead and graphite in the manner stated the fine particles or grains of graphite seem to become coated with an exceedingly thin layer of lead or thoroughly impregnated with the lead, and the particles or flakes of the mass have no tendency to coalesce even when heated to the temperature of molten lead.

I claim herein as my invention—

1. A packing material having in combination a spongy metallic carrying body or base and a mixture of finely-divided lead and graphite, substantially as set forth.

2. A packing material having in combination a metallic alloy in the form of spongy or porous particles and a mixture of finely-divided lead, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEORGE R. HAYDEN.

Witnesses:

DARWIN S. WOLCOTT,  
F. E. GAITHER.