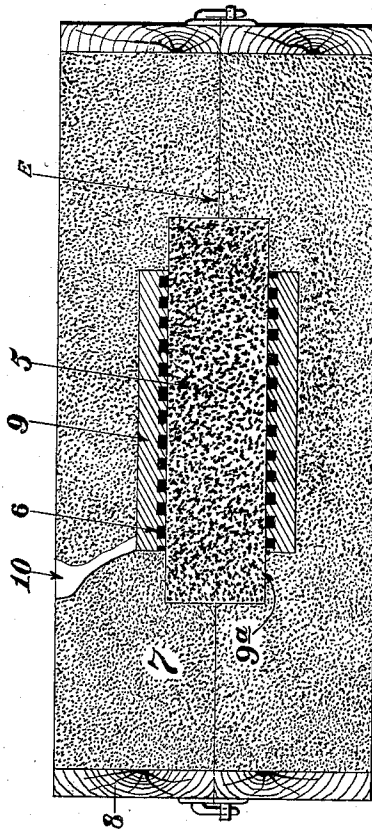
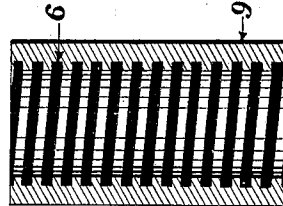


No. 889,071.

PATENTED MAY 26, 1908.

G. S. VAN VOORHIS.
METHOD OF MAKING BUSHINGS.
APPLICATION FILED NOV. 13, 1906.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE S. VAN VOORHIS, OF BROOKLINE, MASSACHUSETTS.

METHOD OF MAKING BUSHINGS.

No. 889,071.

Specification of Letters Patent.

Patented May 26, 1908.

Application filed November 13, 1906. Serial No. 343,242.

To all whom it may concern:

Be it known that I, GEORGE S. VAN VOORHIS, a citizen of the United States, residing at Brookline, Massachusetts, have invented certain new and useful Improvements in Methods of Making Bushings, of which the following is a specification.

My invention relates to improvements in the method of manufacturing bushings for what may be termed as self lubricating journals, and while designed more especially for use in connection with trolley wheels, is not limited to this particular use.

The object of the invention is to provide a simple and economical method by which lubricants such as graphite may be applied to the bushing so as to be effectually retained in place and so exposed on the bearing surface as to properly lubricate the shaft on which the bushing turns.

In order that my said invention may be the more readily understood I will describe it in connection with the accompanying drawings in which—

Figure 1 is an elevation view of a core member. Fig. 2 is a similar view of the core with the graphite in place thereon preparatory to its being placed in the mold. Fig. 3 is a central vertical section through the mold and core, and Fig. 4 is a central longitudinal view of the completed bushing.

In proceeding according to my invention I first take a cylindrical core, made of sand or other suitable material and around this I wrap or wind plastic graphite or other lubricant either in the form of rings or a helix or equivalent manner as shown at 6. The graphite is not wound or applied to the core throughout its entire length as will appear from Fig. 2, the ends of the core being left uncovered.

The core with the plastic material in place thereon is placed in a suitable oven and baked until the graphite is hard and dry, af-

ter which it is placed in a suitable mold. Such a mold is shown in Fig. 3 as a sand mold, the sand 7 within the flask 8 being molded by the aid of a suitable pattern to provide the mold cavity 9. Within this the core 5 is placed with its graphite wound portion within the mold cavity 9 and its unwound ends held in the recesses 9^a at the ends of said cavity. The molten metal from which the bushing is to be made is now poured into the mold through the sprue hole 10 and thereafter allowed to cool.

After removal from the mold the sand core may readily be knocked out leaving the complete bushing as shown in Fig. 4 with the graphite embedded in the inner wall. Thereafter the bushing may be machined or turned and finished in the ordinary manner and precisely as if it were a plain metal bushing.

Having thus described my invention what I claim is—

1. The hereindescribed method of forming lubricating bushings which consists in encircling a cylindrical core with separated layers of lubricating material in plastic form, hardening the lubricating material, placing the core in a suitable mold, casting the body of the bushing around the core, removing the core and bushing from the mold and then removing the core from the bushing, substantially as described.

2. The hereindescribed method of forming bushings which consists in winding a plastic graphite compound upon a suitable core, baking the same to harden the lubricant, and then casting the body of the bushing around said core, and finally removing the core from the bushing, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

GEORGE S. VAN VOORHIS.

Witnesses:

M. S. HOYT,
THOMAS R. EDMANDS.