No. 721,601. PATENTED FEB. 24, 1903.

W. A. PHINNEY.

BRUSH.

APPLICATION FILED JAN. 22, 1902.

NO MODEL.

FIG. 1.

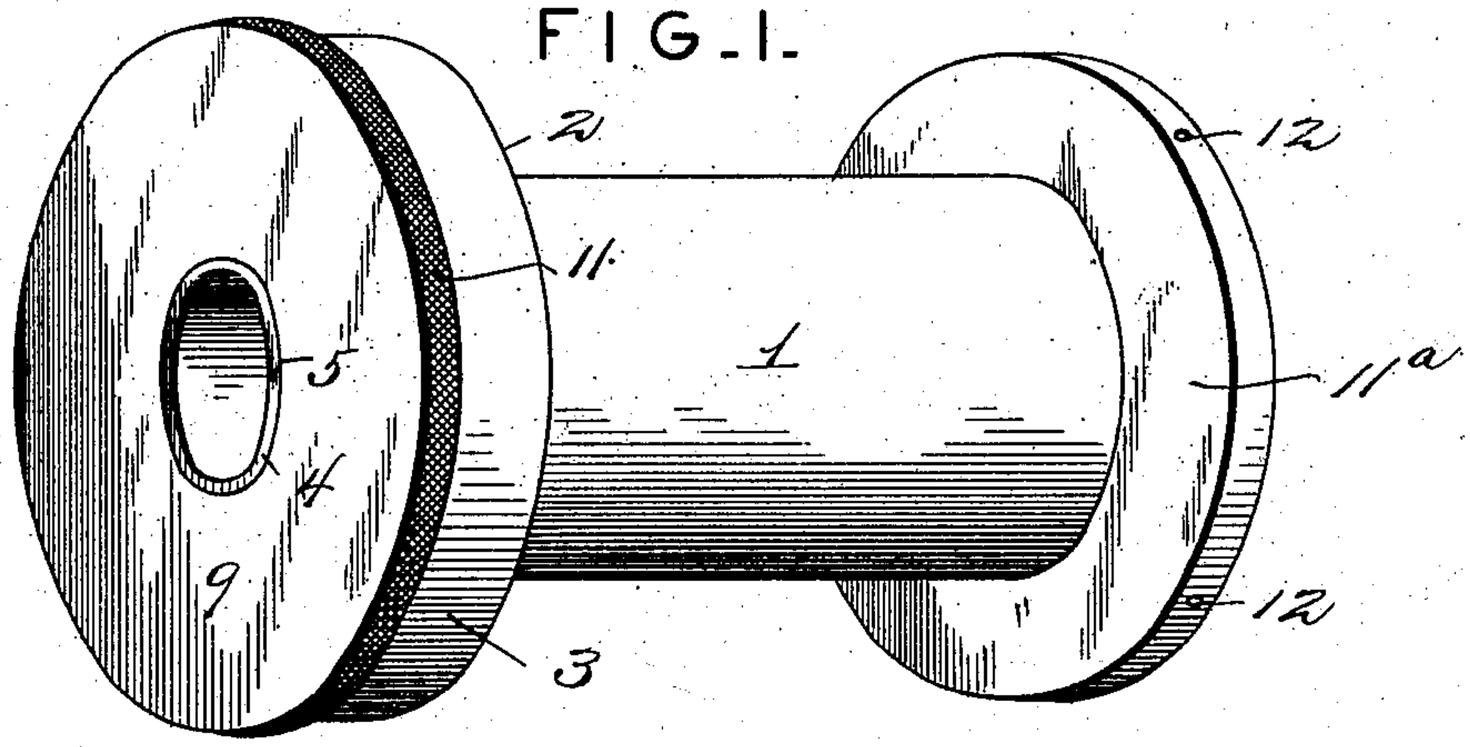


FIG. 2.

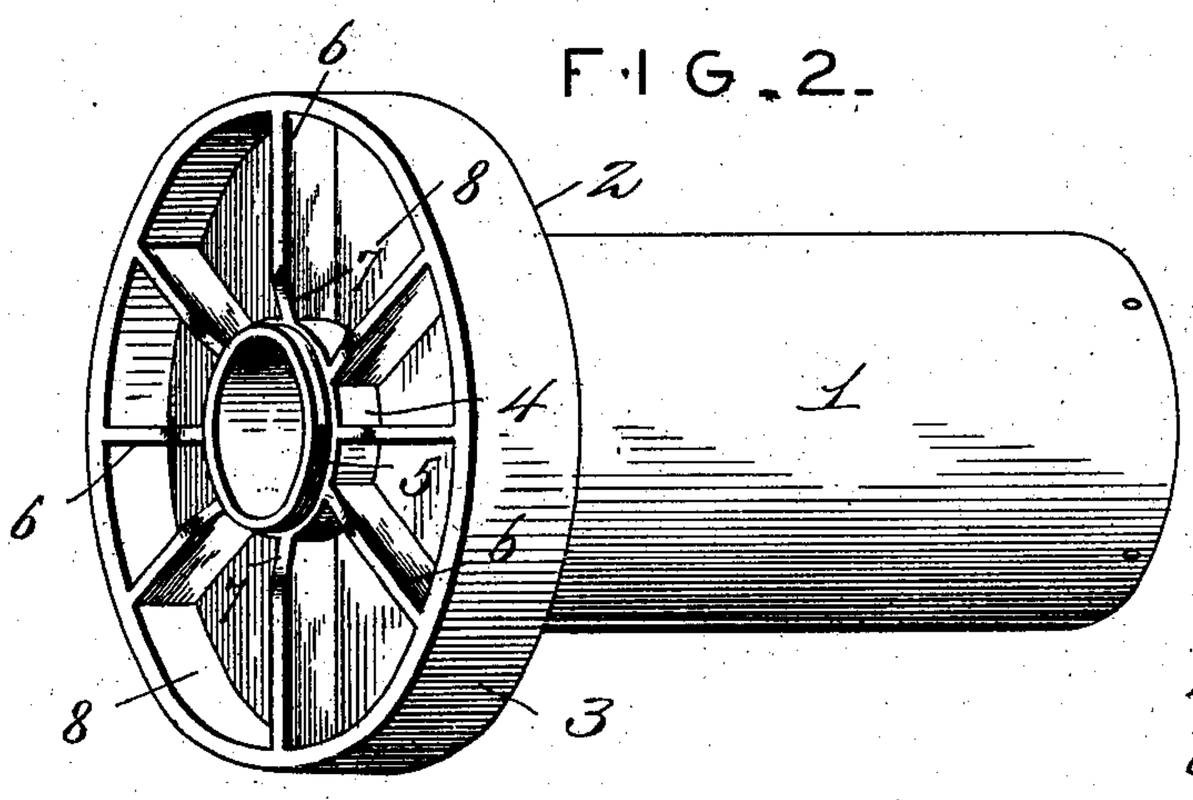


FIG. 3.

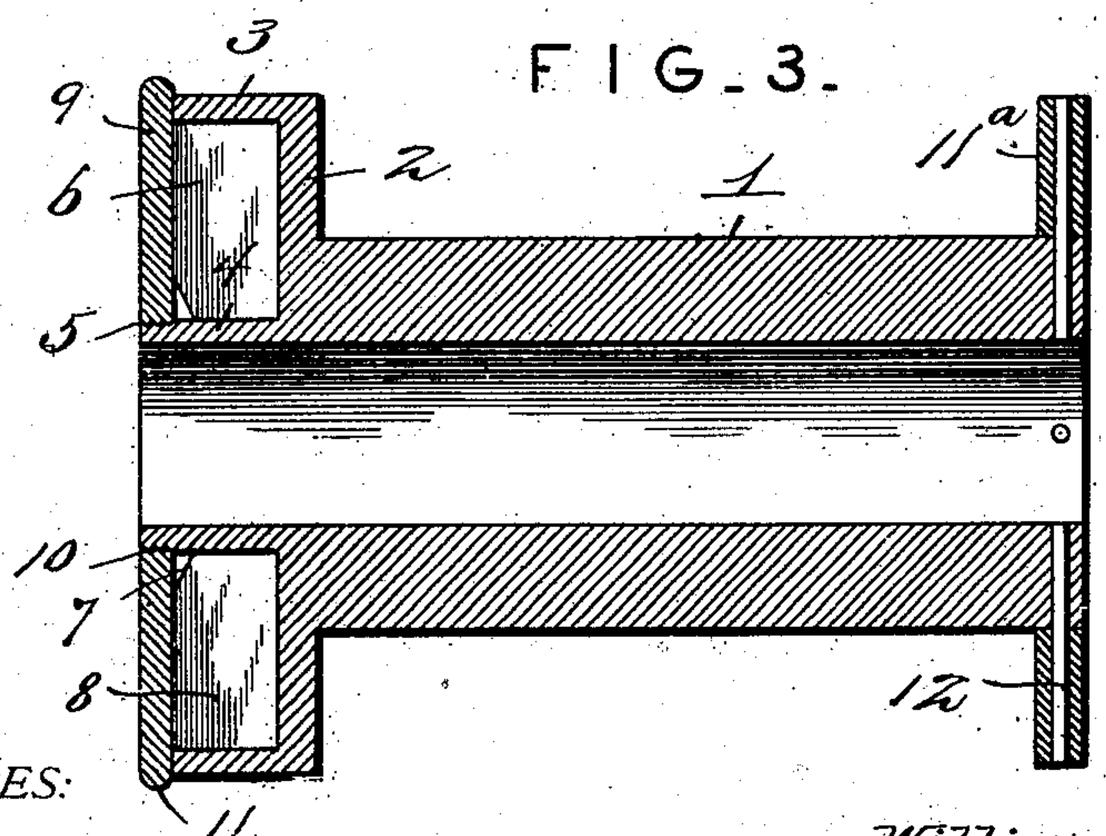
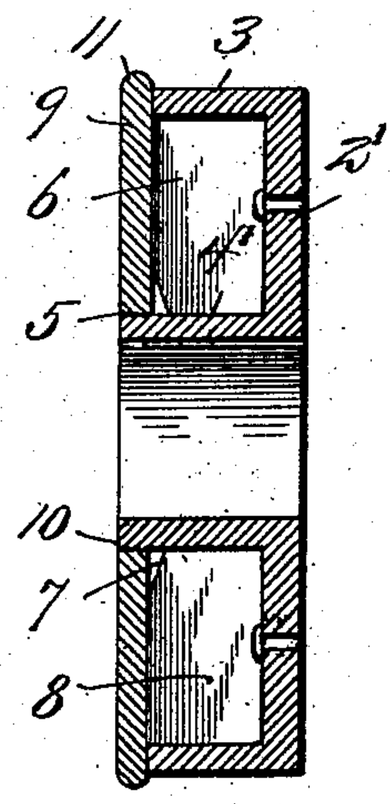


FIG. 4.



WITNESSES:

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WILLIAM A. PHINNEY, OF MANCHESTER, NEW HAMPSHIRE.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 721,601, dated February 24, 1903.

Application filed January 22, 1902. Serial No. 90,826. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. PHINNEY, a citizen of the United States, residing at Manchester, in the county of Hillsboro and State of New Hampshire, have invented new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to hubs or blocks for rotary brushes and the like, particularly that class which are known as "wire-scratch" cleaning or polishing brushes used by metal finishers for treating metal goods of every description.

The present improvement is particularly adapted for that class of hubs or blocks for rotary brushes used by manufacturers of needles for the purpose of cleaning, burnishing, and finishing such products.

One object of the invention is to provide simple, durable, practicable, and economical means for holding suitable wire or other kind of brush-stock employed in the construction of a rotary brush or wheel or other carrying agency.

A further object of the invention is to provide means for producing a true-running brush or block for rotary brushes or wheels and embodying means for introducing therein balancing or weight devices to overcome the numerous disadvantages heretofore encountered in the construction of rotary brushes or wheels.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts as a complete organization and in detail and which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a hub or block for a rotary brush or wheel embodying the features of the invention. Fig. 2 is a similar view showing portions of the improved device detached therefrom. Fig. 3 is a longitudinal vertical section of the complete device. Fig. 4 is a detail longitudinal vertical section through the balancing attachment and indicating that the latter may be applied to any rotary agency.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring particularly to Figs. 1, 2, and 3, the numeral 1 designates the tubular member of the improved hub or block, which is provided at one end with an integral flange 2, having an outwardly-projecting rim 3. Extending centrally from the outer side of the flange 2 and concentric with the rim 3 is an extension 4, which is integrally formed with said flange and in longitudinal alinement with the member 1, the bore of the extension 4 being coincident with that of the member 1. The extension 4 extends outwardly a greater distance than the rim 3 and its outer terminal is screw-threaded, as at 5. Between the extension 4 and the rim 3 are a series of radial partitions 6, equal in outward extent or depth to the rim 3 and having their inner portions 7 at the points of intersection with the extension 4 cut away. These partitions provide a series of compartments 8, in which suitable weight devices or materials are adapted to be placed to balance the entire hub structure and the brush-stock carried thereby. These compartments extend completely to the flange 2, which forms an inner closure therefor, and the outer portions of the compartments are closed by a removable cap 9, with a central screw-threaded opening 10 to removably engage the outer screw-threaded terminal 5 of the extension 4, the said cap being also formed with a projecting milled rim 11 for convenience in applying and removing the same. The proportions of the cap as regards thickness and the projection of the extension beyond the outer edges of the partitions 6 and the rim 3 are such that when the cap 9 is fully applied its inner face will abut or press closely against the said outer edges of the rim 3 and partitions and the outer face of the cap will be flush with the end of the extension 4. The flange 2 and rim 3, conjointly with the partitions forming the compartments 8 and the cap 9, produce what will be hereinafter termed as a "balancing attachment," and it will be seen that the brush or wheel embodying the hub or block constructed in accordance with the features of the invention may be caused to regularly rotate by controlling the balance thereof through the medium of introduction of weight devices or materials in the several compartments 8 where found necessary. This balancing attachment is regulable at will through the medium of the removable cap 9, and

though shown integrally formed in part with the tubular member 1 in the main figures of the drawings it will be understood that it may be applied to any rotating agency or element for a similar purpose, as indicated by Fig. 4, which in section illustrates the same structural features as those heretofore referred to and in which instance the sleeve 4′ will be made large enough to slip over the device to which the attachment is to be applied, and in some instances the securement to such device will be by means of securing-pins or the like inserted at intervals through the flange 2′, which is formed with the sleeve 4′ and arranged at right angles therewith.

On the end of the member 1 opposite that to which the balancing attachment is applied an annular head 11ª is secured by any suitable means and formed of metal or other material, metal being preferable. As a simple means for securing the head 11ª to the member 1 pins 12 are shown, which are passed through suitable openings in the head and the member 1. The hub as an entirety is inserted on a suitable shaft or mandrel through the medium of the bore through the member 1 and the extension 4, and it will be understood that in applying the hub or block suitable shaft-fastening keys or other known devices will be employed.

Hubs or blocks as heretofore constructed have not been satisfactory, owing to the fact that a brush structure carried thereby could not be made to practically balance, with the result that when such brushes were run at a high rate of speed, which is always necessary, the wires in the brush structure became broken off at or near the outer periphery of the hub, thereby throwing the brushes out of true and rendering them impracticable to secure the desired results and frequently necessitating disuse of the same. Owing to these disadvantages the previously-constructed brushes have proved expensive and impracticable. Furthermore, hubs for rotary brushes as heretofore constructed have been made of one piece, and their circumferences were provided with perforations radially arranged into which the brush-stock was drawn and secured by fine wire. This construction is objectionable, owing to the fact that the perforations and the action of drawing or securing the wire in the hub weakens the latter, thus causing the hub to split and destroying the brush, and consequently an expensive hub resulted. Furthermore, in the old style of hub weights were attached to the sides of the same in order to have them run smoothly and regularly with material inconvenience to users as well as extra expense.

The advantages of the present form of hub reside in its durability. It gives results from a practical standpoint in view of the fact that the weight, sufficient to properly balance the brush, can be readily inserted in the compartments 8 and not disturbed, this balancing feature being under the direction of the brush-maker. It is economical in view of the fact that it is not liable to split, and, furthermore, by the preliminary adjustment as to balance the hub when completed by the brush-maker is ready for use without requiring the application of any extraneous balancing devices.

Having thus fully described the invention, what is claimed as new is—

1. A device of the class set forth, comprising a main member and a balancing attachment with a series of radial partitions forming independent compartments, and a removable cap for said compartments.

2. In a device of the character described, a balancing attachment having a flange with a rim, an extension, a series of radial partitions between the extension and rim, and a removable cap engaging said extension, substantially as described.

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

WILLIAM A. PHINNEY.

Witnesses:
GEORGE H. PHINNEY,
ARTHUR W. PHINNEY.