No. 799,048. PATENTED SEPT. 12, 1905.

F. G. HEAD.

BABBITTING DEVICE.

APPLICATION FILED FEB. 8, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

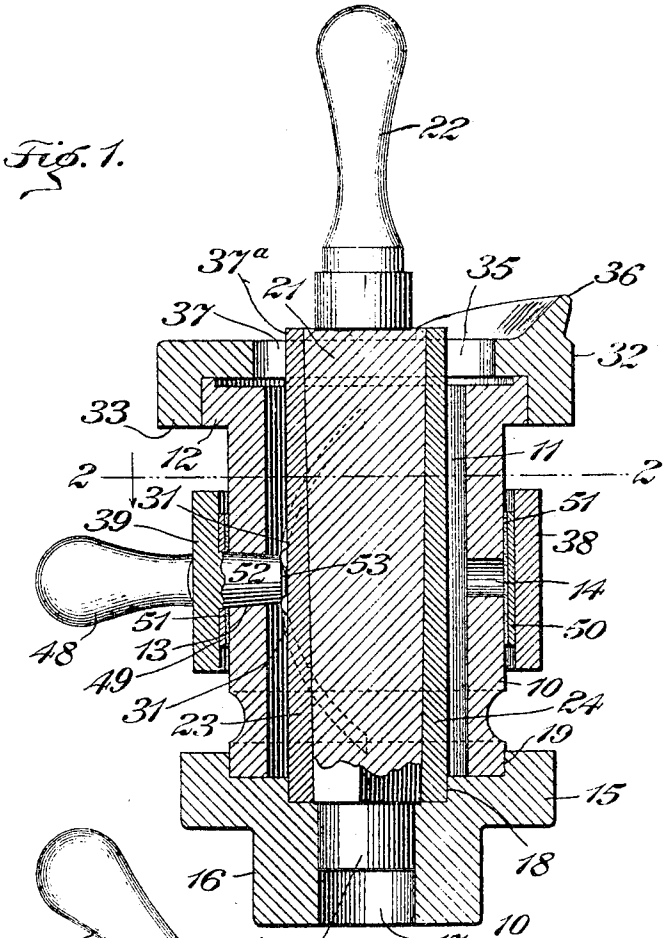
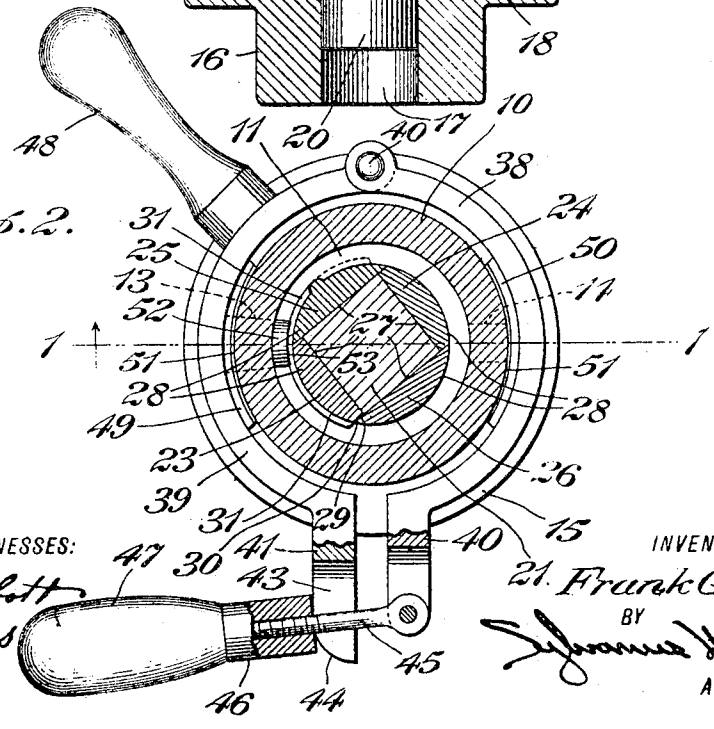


Fig. 2.



WITNESSES:

H. C. Abbott

C. A. Jarvis

INVENTOR

Frank G. Head

BY

Thomas H. Cobb.

ATTORNEY

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

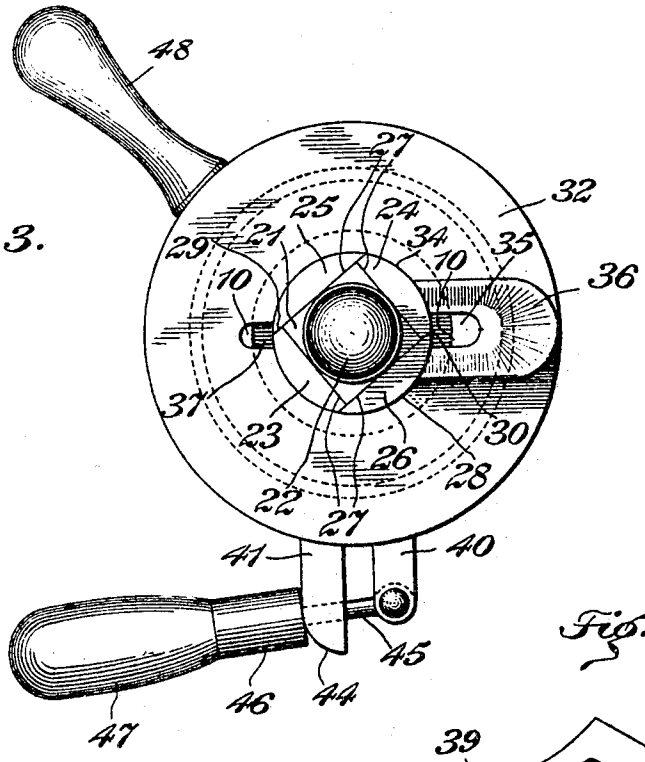


Fig. 6.

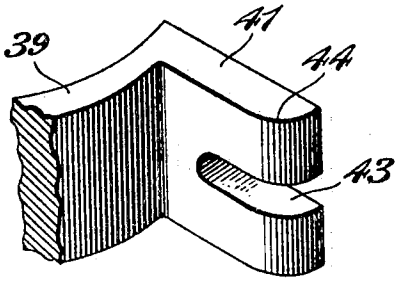


Fig. 4.

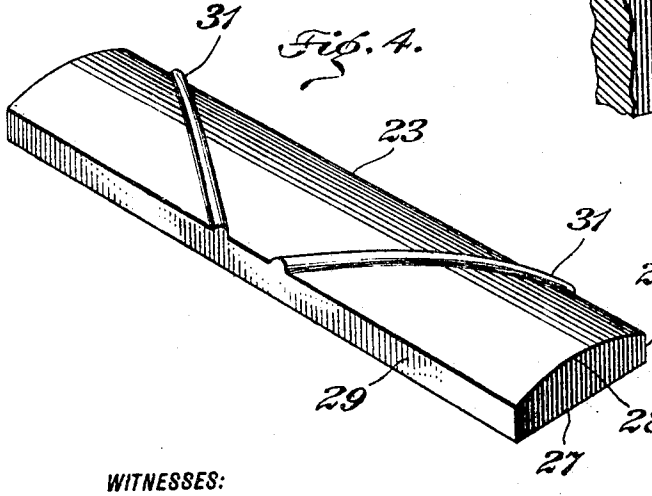
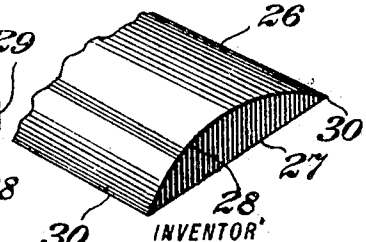


Fig. 5.



WITNESSES:

H. C. Abbott

C. A. Jarvis.

INVENTOR

Frank G. Head

BY

ATTORNEY

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK G. HEAD, OF HYDEPARK, MASSACHUSETTS, ASSIGNOR TO FRANK RIDLON COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION.

BABBITTING DEVICE.

No. 799,048. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed February 8, 1905. Serial No. 244,824.

To all whom it may concern:

Be it known that I, FRANK G. HEAD, a citizen of the United States, residing at Hydepark, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Babbitting Devices, of which the following is a specification.

My invention relates to devices for applying surfaces of such soft or antifriction metal as babbitt to bearings, it being particularly adapted for the facing of whole or undivided bearing-shells. Its principal objects are to provide a simple and efficient device of this character by which the metal may be symmetrically applied and which will permit channels to be formed therein without interfering with the separation of the device from the completed work.

Figure 1 is a central vertical section through one embodiment of my invention, it being taken upon the line 1 1 of Fig. 2 and showing a bearing-shell in position for babbitting. Fig. 2 is a full horizontal section on the line 2 2 of Fig. 1. Fig. 3 is a top plan view. Fig. 4 is a perspective view of one of the core-sections. Fig. 5 is a similar broken view of a companion section, and Fig. 6 is a perspective view of the end of one of the band or closure sections.

Similar characters indicate like parts throughout the several figures of the drawings.

A bearing-shell is designated by the numeral 10, it being of generally cylindrical form, the type here illustrated being that commonly used in connection with the journals of electric motors. It is provided with a cylindrical opening 11 in which the journal is to operate and has at one end a flange 12. Between the extremities of the shell is an opening 13 to permit the introduction of a lubricant, and upon the opposite side is shown an opening 14 into which the babbitt may flow and when hardened serve to hold it against movement.

My improved babbitting device, as illustrated, comprises a base or support 15, which may be of cylindrical form and have a downward projection 16 upon which it may rest. Axially of this support extends a central bore or recess 17 through the projection 16, and surrounding this bore and lying in successive parallel planes are two concentric recesses 18 and 19, the latter being uppermost and of greater diameter. In the recess 17 fits a cylindrical end 20 of a mandrel, the main portion 21 of which is preferably of rectangular section, it being here shown as square. It is tapered, its sides converging downwardly or toward the base, and has at its upper end a handle 22. The lower extremity of the square portion of the mandrel is situated within the recess 18, there being a space left about it to receive core-sections 23, 24, 25, and 26. These sections have plane inner sides 27 for contact with the mandrel, while their outer sides are curved at 28. The sections 23 and 24 are situated opposite one another and preferably have square edges 29 lying in the planes of the adjacent walls of the mandrel. The sections 25 and 26 are situated between the previously-mentioned sections and have tapered edges 30, which overhang the squared portions of their companions, forming a continuous cylindrical surface and furnishing a substantially unbroken core. Each section is tapered oppositely to the mandrel and to the same extent to secure this cylindricity. They fit within the recess 18, being in contact with its outer wall, and are thus maintained firmly in coaction with the sides of the mandrel. Extending from points near the centers of adjacent edges of the sections 23 and 25 are ribs 31, which converge outwardly to the opposite edges, these serving to form channels in the babbitt to permit the passage of a lubricant. When the parts are thus assembled, the bearing-shell may be applied to the base, its smaller or unflanged end fitting the recess 19 and the inner surface of its opening 11 being held concentric with the exterior of the core. The bearing is so positioned that the opening 13 is in alinement with the space between the ribs 31 to provide for the communication of the channels they form with such opening. A cap 32 is then applied to the top of the shell, it being circular and having a flange 33 fitting the outside of the flange 12, and an axial opening 34, into which fit the core-sections. This completes an annular channel between the core and shell which is to receive the babbitt and maintains the concentric relation of these elements at the end opposite the base. To permit the pouring of the molten metal, an opening 35 is formed in the cap at one side of the core, it being preferably surrounded by a raised lip 36, which will direct said metal

into the opening. As illustrated, the core-sections extend somewhat above the cap at 37ª, furnishing an abutment against which the ends of the lip terminate. A second opening 37 may also be provided to facilitate the escape of air from the channel as the material is introduced.

A closure for the side openings 13 and 14 is provided which includes a band preferably formed in two opposite curved sections 38 and 39, substantially conforming to the curvature of the exterior of the shell. These sections are shown as hinged together at 40 and have at their opposite ends projections 41 and 42, extending parallel to one another. The projection 41 is slotted at 43 and has its end rounded or inclined at 44. Upon the opposite projection is hinged a screw or threaded securing member 45, upon which operates a contact member 46, preferably of some such wear-resisting material as steel and having projecting from it a handle 47. The section 39 is shown as having a handle 48 situated adjacent to the hinge. Between the ends of the sections, so located that they will come over the shell-openings, are pads 49 and 50, conveniently of sheet metal and preferably faced at 51 with some such yieldable and heat-resisting material as asbestos. From the pad 49 extends a pin or projection 52, adapted to enter the opening 13 and being tapered, it converging outwardly from the pad. Its end is concave at 53 to conform to the curvature of the interior of the core.

It will be seen that when the core and shell are mounted upon the base and the cap applied they will be maintained in a true concentric relation to one another, leaving a channel of the desired width to receive the anti-friction metal. The band is then applied over the opening in the shell and clamped in position by drawing the contact member over the rounded end of the adjacent projection by means of the handles, the threaded support of the contact member making it possible to adjust the relation of the elements to secure the proper tension. The molten metal is now poured through the opening 35 in the cap until it fills the channel and the shell-opening 14, the air escaping through the vent-opening. When the metal is set, the securing device may be released and the band removed, the taper of the pin 52 facilitating its withdrawal from the opening 13. The cover is taken off and then the mandrel is lifted from its position between the core-sections by its handle, its taper permitting this to be readily accomplished. This allows the core-sections to be collapsed, those numbered 23 and 24 first being moved toward one another and withdrawn, when their companions may be removed in a similar manner. This movement of the sections into the space previously occupied by the mandrel enables the ribs forming the lubricant-channels in the metal to be separated without difficulty. These operations leave the babbitted shell free for removal.

While I have used the terms "babbitt" and "babbitting" throughout the specification to designate the metal with which the bearing is to be lined and the operation of applying said metal, I desire it understood that these words are employed in a generic sense and are intended to cover the use of any antifriction or other suitable metal.

Having thus described my invention, I claim—

1. A babbitting device comprising a mandrel, separable sections adapted to contact with the mandrel, and a support having a recess to receive a portion of the mandrel and a recess which the sections may enter, both the mandrel and sections fitting the recesses.

2. A babbitting device comprising a rectangular mandrel provided with a cylindrical end portion, sections having plane faces for contact with the mandrel and external curved faces, and a support having cylindrical receses to receive the end portion of the mandrel and the adjacent ends of the sections, both the mandrel and sections fitting the recesses and serving to hold the contacting faces of these elements in their correct relation.

3. The combination with a support, of a bearing carried thereby, a mandrel, and separable sections adapted to contact with the mandrel, said bearing, mandrel, and sections being held by the support against lateral movement.

4. The combination with a support, of a bearing carried thereby, a mandrel, separable sections adapted to contact with the mandrel, said bearing, mandrel and sections being held by the support against lateral movement, and a cap for the bearing contacting with the sections.

5. The combination with a support, of a bearing carried thereby, a mandrel, separable sections adapted to contact with the mandrel, said bearing, mandrel and sections being held by the support against lateral movement, and a cap resting upon the bearing and contacting with the sections.

Signed at Hydepark, in the county of Norfolk and State of Massachusetts, this 7th day of January, 1905.

FRANK G. HEAD.

Witnesses:
FRED A. RICH,
MABEL H. RICH.