J. M. ROHLFING.

JOURNAL BOX BRASS.

APPLICATION FILED AUG. 2, 1909.

962,166. Patented June 21, 1910.

Fig. 1.

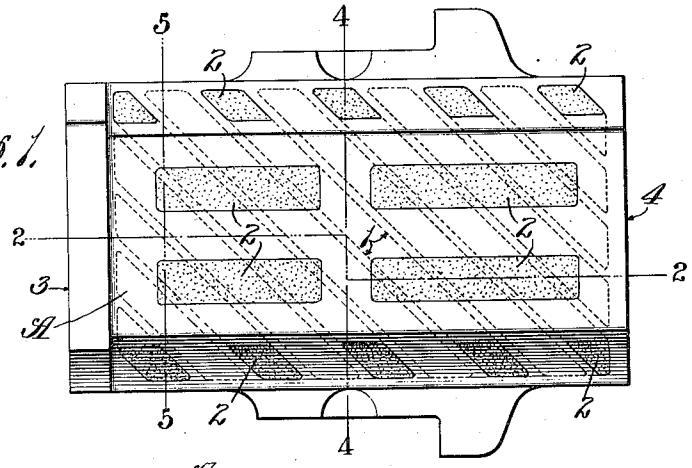



Fig. 2.

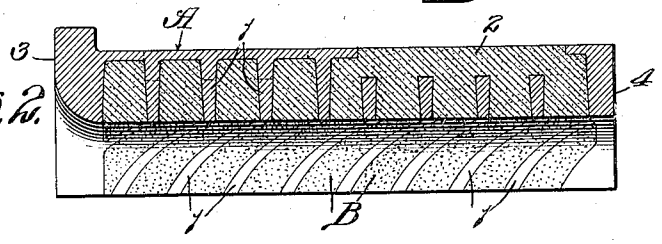



Fig. 3.

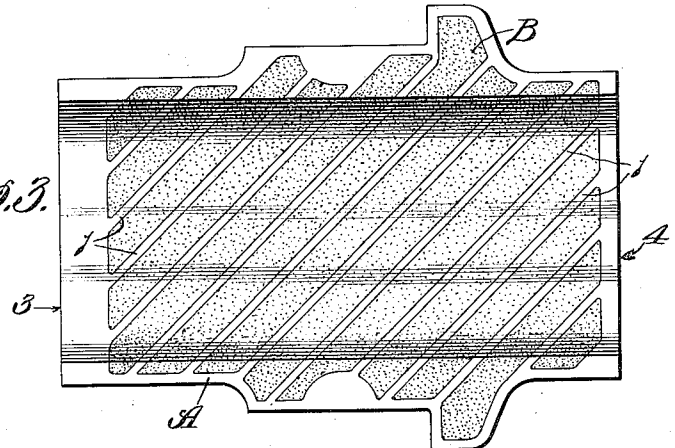



Fig. 4.

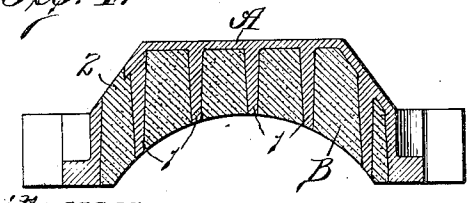
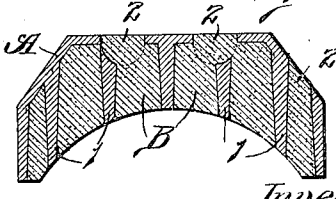



Fig. 5.




Witnesses:
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Wells L. Church.

Inventor:
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By Paul Bakewell Atty.

# UNITED STATES PATENT OFFICE.

JOHN M. ROHLFING, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO ROBERT E. FRAME, OF ST. LOUIS, MISSOURI.

## JOURNAL-BOX BRASS.

962,166. Specification of Letters Patent. Patented June 21, 1910.

Application filed August 2, 1909. Serial No. 510,782.

*To all whom it may concern:*

Be it known that I, JOHN M. ROHLFING, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Journal-Box Brasses, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to journal bearings, and particularly to journal bearings of that type which consist of a cast metal body portion provided with a filling of alloy.

One object of my invention is to provide a journal bearing of the type referred to that will conform to the requirements of the M. C. B. Association and which is provided with a bearing surface that consists partly of an alloy or inexpensive metal and partly of a harder or tougher metal than said alloy arranged in a novel manner.

Another object is to provide a journal bearing which is so constructed that the lubricating medium will be distributed uniformly over that surface of the bearing which engages the journal or shaft on which the bearing is mounted.

Another object is to provide a journal bearing of the type referred to which is so designed that no cores have to be used in the operation of casting the shell or body portion of the bearing. And still another object is to provide a journal bearing of the type referred to that is light, strong and inexpensive to manufacture.

Figure 1 is a top plan view of a journal bearing constructed in accordance with my invention; Fig. 2 is a vertical longitudinal sectional view of same taken on lines 2—2 of Fig. 1; Fig. 3 is a bottom plan view of the bearing; and Figs. 4 and 5 are cross sectional views taken, respectively, on the lines 4—4 and 5—5 of Fig. 1.

Referring to the drawings which illustrate the preferred form of my invention, A designates the shell or body portion of the bearing which is made of cast metal, preferably brass, and 1 designates a plurality of ribs or webs that extend continuously from one wall of the shell to the other wall so as to tie said walls together and thus produce a strong and rigid body portion of substantially skeleton construction. These ribs 1 are preferably inclined longitudinally of the bearing, and the spaces between same are filled with an alloy B which is poured into said spaces while in a molten state, thus producing a journal bearing whose under side or bearing surface is composed of alternately arranged strips or pieces of alloy and brass that extend continuously from one side wall of the bearing to the other side wall. The under surface or bearing face of the bearing which rests upon the journal or axle on which the bearing is used, is of concave shape so as to partially surround the journal and the exterior shape of the bearing conforms to the requirements of the M. C. B. Association.

To overcome the possibility of the alloy dropping out of the shell or body portion of the bearing I prefer to form openings or cut-out portions in the shell A so that the alloy can flow into said openings and thus form anchorage members or portions that tie the shell and the filling of same together. In the construction herein shown, the top wall and also the side walls of the shell are provided with openings that are filled by portions 2 of the alloy, the portions which fill the openings in the top wall of the shell extending across the ribs 1, as shown in Fig. 2, so as to positively prevent the alloy from dropping out of the shell even if it should work loose from the ribs 1 and other portions of the shell with which it contacts. I do not wish it to be understood, however, that my broad idea is limited to the specific construction herein shown for, if desired, the bond between the alloy and the shell could be obtained in various other ways without departing from the spirit of my invention.

The front and rear end walls 3 and 4, respectively, of the shell are made comparatively thick so as to impart sufficient strength and rigidity to the bearing but the top and side walls of the shell and also the ribs 1 are made comparatively thin so that a greater quantity of alloy can be used in the construction of the bearing and thus reduce the cost of manufacture. The ribs 1 are preferably made tapered or wedge-shaped in cross section so as to facilitate drawing the pattern that is used to form the impression of the shell in the sand mold, and this slight taper in the ribs 1 also produces wedge-shaped spaces between the ribs which tend to strengthen the bond between the alloy and shell owing to the fact that the

alloy is forced more tightly into said spaces whenever it is subjected to pressure.

While I have herein shown my invention embodied in a one-piece bearing it will, of course, be obvious that the bearing could be formed in two pieces; namely, a backing made of malleable iron or some other suitable metal and a facing piece made of an alloy and a relatively harder metal, as herein shown and described.

One of the chief advantages of my improved journal bearing is that the surface of same, which rests upon a journal or axle, is composed of an alloy and a comparatively harder material, such, for example, as brass. A journal bearing of this construction will wear much longer than one in which the bearing face consists entirely of an alloy, and as the shell is comparatively thin a large proportion of the bearing can be made of alloy, thus reducing the cost of manufacturing same. Another advantage of my construction is that the inclined parallel ribs and strips of material which constitute the bearing surface extend continuously from one side wall of the bearing to the other side wall so that they tend to distribute the lubricating medium uniformly over said bearing surface and also cause foreign substances which collect on said bearing surface to work toward one end or the other of same. The shell A is so designed that no cores have to be used in the operation of casting same, and as the inclined ribs 1 are integrally connected to the end, top and side walls of the shell a very strong and rigid construction is produced.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A journal bearing consisting of a shell or body portion having inclined ribs formed on the underside of the top wall thereof, said top wall having openings which said ribs cross or intersect, and a filling of alloy arranged between said ribs and extending over the ribs that extend across the openings in the top wall of the shell.

2. A journal bearing consisting of an outer shell provided with an opening, ribs on the interior of said shell that form part of the journal-engaging surface of the bearing, some of said ribs extending across the opening in the shell, and an inner lining for said shell consisting of an alloy that fills the spaces between said ribs and also extends up into said opening and across the ribs that intersect the same.

3. A journal bearing consisting of an outer shell provided with recesses or openings, parallel ribs on the inner face of said shell that extend diagonally across the face thereof, some of said ribs extending across the openings or recesses in the shell, and an alloy filling the spaces between said ribs and also extending over the ribs that intersect the recesses or openings in the shell.

4. A journal bearing consisting of a cast metal shell having top and side walls in which openings are formed, a plurality of diagonally arranged ribs that extend continuously across the under side of the bearing, said ribs extending parallel to each other and some of said ribs being so arranged that they intersect some of said openings, and an alloy filling the spaces between said ribs and also the openings in said shell which the ribs intersect, thereby producing a structure in which the alloy is supported directly by the ribs.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this thirtieth day of July 1909.

JOHN M. ROHLFING.

Witnesses:
WELLS L. CHURCH,
GEORGE BAKEWELL.