

Feb. 24, 1925.

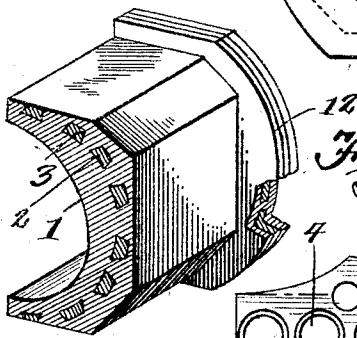
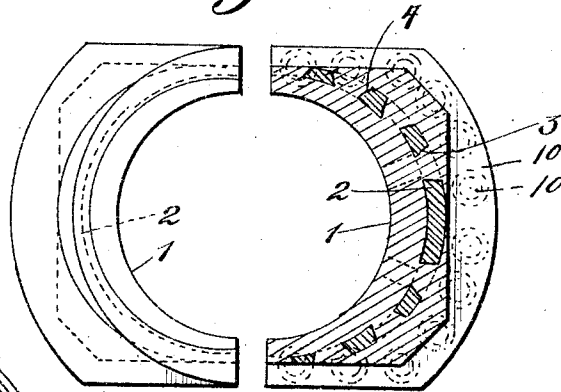
H. G. MARTIN ET AL

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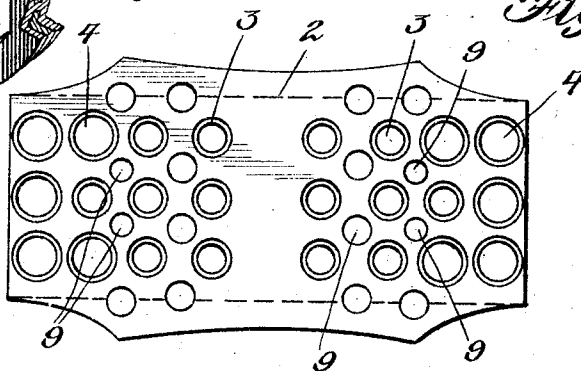
BEARING BRASS

Filed Nov. 14, 1921

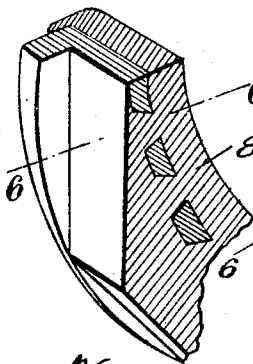
*Fig. 3.*



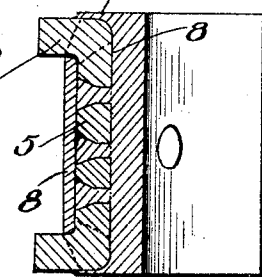
*Fig. 1.*



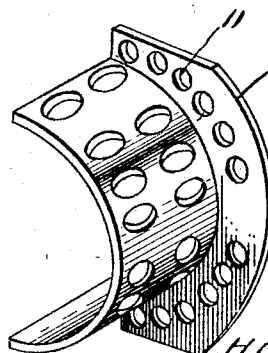
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



*Fig. 2.*

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## UNITED STATES PATENT OFFICE.

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## BEARING BRASS.

Application filed November 14, 1921. Serial No. 515,074.

*To all whom it may concern:*

Be it known that we, HAROLD G. MARTIN and MICHAEL H. NEWGIRG, citizens of the United States of America, residing at Philadelphia-Baltimore, respectively, in the counties of Philadelphia-Baltimore, respectively, and States of Pennsylvania-Maryland, respectively, have invented certain new and useful Improvements in Bearing Brasses, of which the following is a specification.

This invention relates to an improvement in bearing brasses, and particularly in those brasses designed for use at the rear end of the main connecting rod of a locomotive. In such uses, the ordinary brasses, owing to the continual thrust of the connecting rod in opposite directions, are of comparatively short life, being broken ordinarily at substantially the center of such brasses.

The present invention is directed to providing a reinforce for brasses of this and other types, particularly with a view of overcoming the liability to breakage, and, generally speaking, consists in casting in the brass proper a reinforce section particularly formed to provide maximum strength at the desired point, and formed beyond this point to insure a substantially integral formation of the brass and reinforce.

In the drawings,

Fig. 1 is a broken sectional perspective showing a brass with the reinforce therein.

Fig. 2 is a perspective view of the reinforce as the same as shown in Fig. 1.

Fig. 3 is a view in end elevation partly in section showing cooperating bearing brasses with the reinforce in position.

Fig. 4 is a developed plan of a slightly modified form of reinforce.

Fig. 5 is a sectional perspective of a brass having the modified form of reinforce.

Fig. 6 is a section through the brass on line 6—6 of Fig. 5.

In the present invention, brass 1, otherwise of ordinary construction and material, is interiorly provided, preferably in casting with a reinforce strip or section 2. This reinforce section is, in the preferred form illustrated, of substantially the full width of the brass between the edge flanges and also of substantially the same circumferential length as the brass.

The reinforce is made substantially integral with the brass proper by forming holes in the reinforce thru which the brass finds

its way in casting, to thereby fix the reinforce in proper relation to the brass. One feature of the present invention is the particular arrangement of these holes or openings. As previously stated, connecting rod brasses are particularly liable to breakage at the central line due to the rod thrust in such line, and it is therefore important that thruout this particular area, the maximum brass or bearing be afforded and at the same time the maximum reinforce strength. To secure this result, the improved reinforce is, thruout this central portion of the brass, constructed of maximum thickness and is entirely imperforate. Immediately beyond this point of desired maximum strength and bearing, the reinforce, which is gradually of less thickness in both directions from the central point, is formed with a comparatively few, and comparatively small holes 3, thru which the brass flows in casting. Beyond the holes 3, that is, toward the ends of the brass and reinforce, the reinforce is formed with a series of larger holes 4 for the passage of the brass therethru.

Thus, at the point of maximum wear and strain, the reinforce is completely unbroken and the brass of maximum thickness and wear resisting qualities, while immediately beyond this point the reinforce is formed with a series of comparatively small holes, to minimize reduction in strength while still affording an inter-connection of the brass and reinforce, and beyond these small holes the reinforce is formed with larger holes to afford the maximum strength of connection between the brass and reinforce. Thus the improved reinforce brass is given the maximum strength and wearing quality at the points desired, and the maximum strength of connection beyond such wear and strain resisting area.

By this arrangement, the maximum life is given the brass, as the reinforce is completely effective at the point of greatest strain for its full maximum strength, while at the same time, by the provisions of the holes in the reinforce beyond this point of maximum strength, in increasing size toward the point of minimum strain, insures that intimate connection of the reinforcing brass which prevents their separation in use.

In connection with the form of reinforce shown in Figs. 1, 2, and 3, it is to be particularly noted that the edges of the reinforce,

indicated at 10, are bent laterally and formed with a series of holes 11, through which the brass material of the marginal edge or flange 12 of the brass flows during the formation of such flange. Thus, the flange of the brass is materially reinforced by a wholly embedded lateral projection of the reinforce proper.

In Figs. 4, 5, and 6 there is shown a slightly modified form in which the reinforce, indicated at 5, while otherwise of the form and construction described, has its marginal edges outwardly turned to form flanges 6 to provide substantially the full flanges 7 of the usual brass, here indicated at 8. In this instance, the reinforce is substantially the flange of the brass, and is of course materially thicker than the reinforce projection 10 of the preferred form. This type is designed more particularly for that class of brass or bearing in which the flanges are subjected to considerable strain.

If desired, and as preferred, the brass may be formed at appropriate intervals with holes 9, leading to and terminating at the reinforce. These holes serve to direct the heat of the brass directly to the reinforce, where thru the nature of the latter material, such heat is more readily conveyed from the brass.

It is preferred that the holes 3 and 4 be countersunk at the ends remote from the brass in order that the maximum holding effect be afforded.

#### 35 Claims:

1. A bearing brass having a reinforce,

of maximum thickness and imperforate throughout the central portion of the brass, said reinforce formed wholly beyond such central portion with openings to receive the brass material in casting to thereby form an interlock between said material and reinforce, said openings being of increased diameter from the central portion to the ends of the reinforce, the reinforce having marginal flanges serving to define the marginal flanges of the brass proper, said marginal flanges of the reinforce being also formed with openings through which the material of the brass flows in casting.

2. A bearing brass having a reinforce, of maximum thickness and imperforate throughout the central portion of the brass, said reinforce formed wholly beyond such central portion with openings, to receive the brass material in casting to thereby form an interlock between said material and reinforce, said openings being of increased diameter from the central portion to the ends of the reinforce, the reinforce having marginal flanges serving to define the marginal flanges of the brass proper, said marginal flanges of the reinforce being also formed with openings through which the material of the brass flows in casting, said brass material being formed with heat passages leading to and terminating at the reinforce.

In testimony whereof we affix our signatures.

HAROLD G. MARTIN.  
MICHAEL H. NEWGIRG.