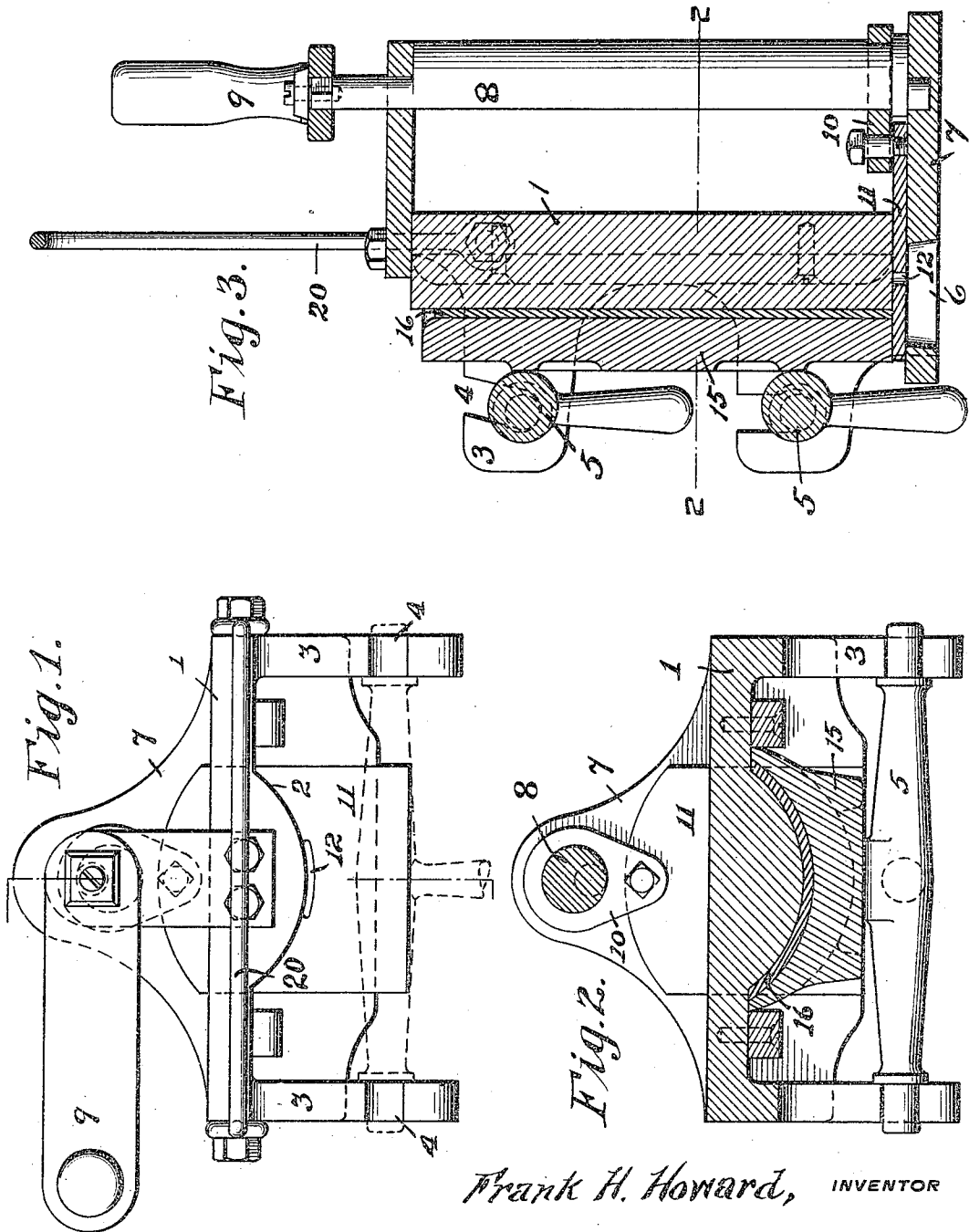


F. H. HOWARD.
 PROCESS OF LINING JOURNAL BEARINGS.
 APPLICATION FILED AUG. 16, 1909.

960,328.

Patented June 7, 1910.



WITNESSES
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FRANK H. HOWARD, OF READING, PENNSYLVANIA.

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Specification of Letters Patent.

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Application filed August 16, 1909. Serial No. 513,101.

To all whom it may concern:

Be it known that I, FRANK H. HOWARD, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Processes of Lining Journal-Bearings, of which the following is a specification.

This invention relates to improvements in the process of lining journal bearings.

Heretofore journal bearings have been lined with soft metal, but in pouring them, one of the most objectionable occurrences has been the formation of blow holes, due to the gases forming therein and having no means of escape. In my present process I overcome this feature by admitting the molten metal with which the lining is formed, only at the bottom of the bearing, with the bearing standing on end, thus allowing all gases or air to escape at the top, which is open.

My invention is more fully described in the following specification, and clearly illustrated in the accompanying drawing, which shows a preferred form of apparatus for the carrying out of my improved process.

In the drawing; Figure 1 is a plan view of the holder, with the sluice gate in forward position, showing the feed opening. Fig. 2 is a cross-section thereof, showing a bearing in position in the holder and filled or lined. Fig. 3 is a vertical central sectional view of the holder with a bearing in position, lined, and the feed opening closed.

The numeral 1 designates the holder which is formed with its inner surface 2 of substantially the same contour as the inner surface of the journal bearing, and of the exact contour of the shaft or axle on which the bearing is to be used. This holder is provided with two pairs of arms 3, each of which is slotted at 4 to receive the ends of a pair of eccentric clamps 5 for securing the bearing in the holder. The holder has an opening 6 in its bottom and is formed with a rearward extension at this point, 7, in which is mounted a vertical, eccentric, rod 8 provided with an operating crank 9 at its top. This eccentric rod has a cam 10 secured thereto at the bottom, which is in turn pivoted to a sluice gate 11 adapted to slide on the upper surface of the extension 7 and to close the opening 6. This gate has an

opening 12 therein, which, when the gate is at its closed or innermost position, registers with the space between the inner surface of the bearing and the inner surface 2 of the holder, that is, with the space that is to be filled with the molten metal to form the lining of the bearing 16.

The numeral 15 designates the journal bearing. This bearing is placed in vertical position in the holder and the clamps 5 are turned to secure it therein, as shown in Fig. 3. The crank 9 is then turned to the position shown in Fig. 1, thus allowing the opening in the sluice gate to register with the space between the inner face of the holder and the inner wall of the bearing. The holder, which is provided with a suitable handle 20, is then immersed in a mass of molten metal to the desired depth, that is, to a depth slightly less than the length of the bearing to be lined, and the said metal will enter the opening 12 in the bottom and find its way up in the bearing, forcing out any gas or air that may be formed, at the top. When the bearing has been filled, the crank 9 is turned in the reverse direction, thus closing the sluice gate at the bottom of the holder and the holder is lifted out of the molten metal and when sufficiently cooled, the bearing is removed from the holder and replaced by another and the process continued.

It is evident that with my improved process, a lining is formed with a smooth and perfect surface, as all the gases or air bubbles have been allowed to escape from the top during the process of filling the bearing.

While I have shown an apparatus with which the bearings are filled by immersion and gravitation, it is quite evident that the same process of lining bearings by admitting the fluid metal to the lowermost point of the bearing may be accomplished by admitting the metal under pressure instead of immersing the bearing in the metal as just described.

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

The process of lining journal bearings which consists in securing the bearing in a holder in such manner as to allow a space between the inner surface of the bearing and the holder; submerging the holder in a mass

of molten metal to a depth less than the
length of the bearing; allowing sufficient
molten metal to entirely fill said space to en-
ter the bearing only at its lowermost point;
5 retaining the metal so entered by mechan-
ical means and removing the holder from
the mass of molten metal.

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

FRANK H. HOWARD.

Witnesses:

ED. A. KELLY,
J. O'R. KELLY.