H. M. PLAISTED.

JOURNAL BEARING SUPPORT.

APPLICATION FILED JULY 22, 1920.

1,368,050. Patented Feb. 8, 1921.

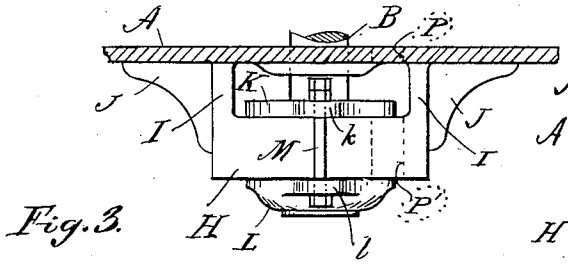


Fig. 3.

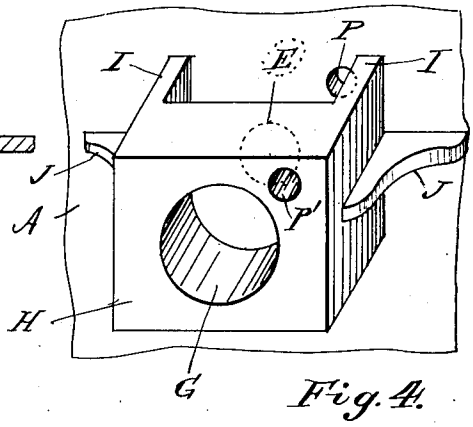


Fig. 4.

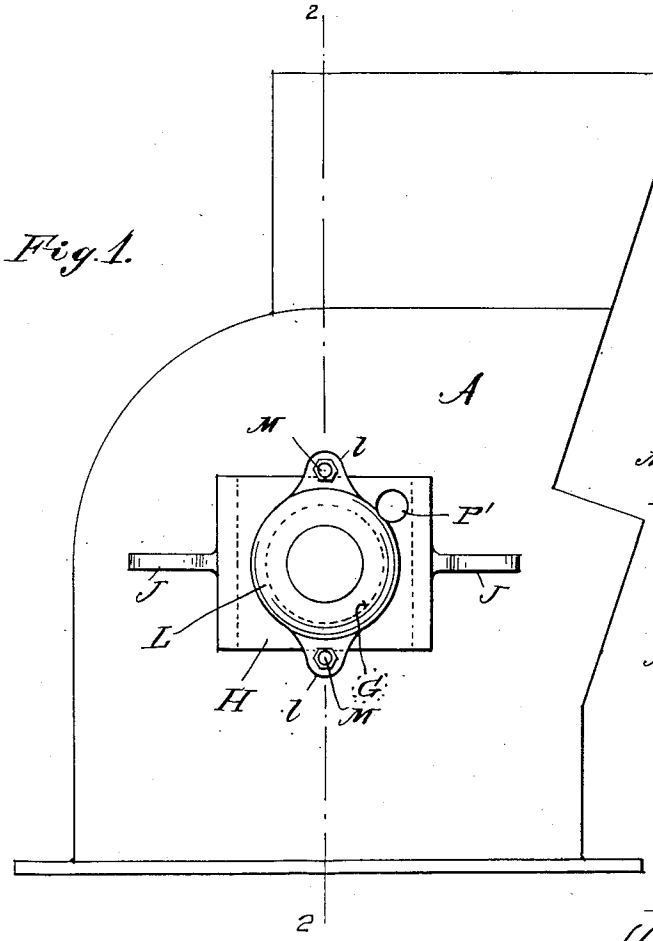


Fig. 1.

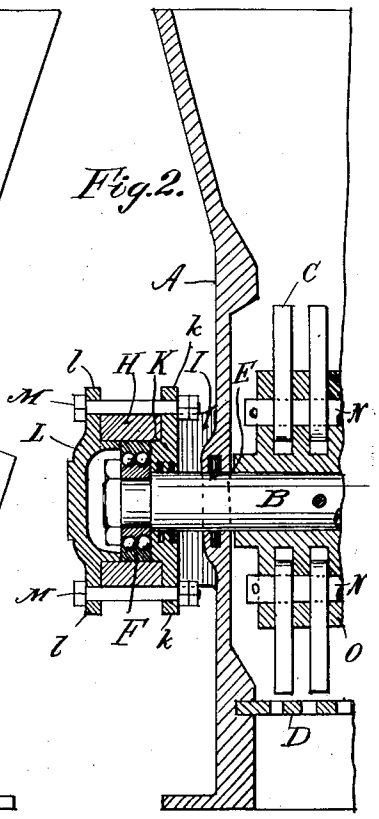


Fig. 2.

Inventor,
Harold M. Plaisted.

UNITED STATES PATENT OFFICE.

HAROLD M. PLAISTED, OF ST. LOUIS, MISSOURI, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO WILLIAMS PATENT CRUSHER AND PULVERIZER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

JOURNAL-BEARING SUPPORT.

1,368,050. Specification of Letters Patent. Patented Feb. 8, 1921.

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To all whom it may concern:

Be it known that I, HAROLD M. PLAISTED, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Journal-Bearing Supports, of which the following is a specification.

This invention relates to certain new and useful improvements in journal bearing supports the peculiarities of which will be hereinafter described and claimed.

The main object of my invention is to provide a simple, effective support for a journal bearing such as that of the ball bearing type, that will maintain the shaft in proper position, allow air space between the side of the casing and bearing, and will reduce the cost of manufacture.

In the accompanying drawing on which like reference letters indicate corresponding parts, Figure 1 represents a side elevation of a mill exemplifying my invention; Fig. 2, a vertical section on the line 2—2 of Fig. 1; Fig. 3 a plan view of my journal bearing support integral with the side casing shown in section; and Fig. 4 a perspective of the same.

The letter A designates the side casing of a mill or other machine to which my invention is applied; the letter B. a rotor shaft carrying hammers C, and D a coöperating cage. The shaft B passes through an opening E, Figs. 2 and 4, in the side casing and is carried by suitable journal bearings such as the ball bearing F, that is mounted in a cylindrical opening G passing horizontally through a block H, offset from the casing side so as to leave a space between the block and the side. This block is supported or connected to the casing by vertical, or otherwise disposed webs I, spaced apart from each other as shown in Figs. 3 and 4, and preferably vertical so that any oil escaping from the bearing may pass downward in the open space and escape without entering the mill. Suitable braces J horizontally disposed, assist in making a rigid integral connection between the side casing and the offset block H, so that the horizontal opening G, when axially formed with regard to the rotor shaft and the casing side opening E, will maintain the bearing in proper position.

Since the opening G in the offset block passes straight through said block in the preferred form, the bearing F is maintained in its proper position and the endwise thrust of the rotor is taken up, by means of an inner gland K and outer gland L, having circular portions projecting into the opening G and fitting against opposite sides of the bearing F as shown in Fig. 2. The glands also have ear lugs *l*—*k* respectively, through which horizontal bolts M pass by means of matching holes in said lugs that project past the offset block H so that the said bolts pass above and below, or outside of the block, as shown in Figs. 2 and 3, and maintain the glands in their fastening position without any danger of their turning.

The hammers C are mounted on hammer rods N carried by disks O secured to the shaft B, and in order to remove said hammer rods endwise I provide a hole P, Fig. 4, in the side casing of the mill opposite the cylindrical plane of said rods, and also a similarly located hole P′ in the offset block H. Figs. 1 and 4. The rods may then be rotated to a position opposite said hole and withdrawn endwise through the holes P and P′, for replacing the hammers C within said mill.

The shaft B is slipped endwise through the side opening E and the opening G, and through the disks O which are then keyed thereon. The inner glands K are located in axial position and the shaft is slipped through them. The outer glands L, one of which is perforated on the pulley side (not shown) is then bolted to the corresponding inner gland, and the bearing is thus fixed in its pre-determined position without danger of getting out of alinement or of shifting its axial adjustment.

I claim—

1. The combination with the side casing of a mill, a rotor shaft, and a journal bearing, of a journal bearing support comprising an offset block having an axial opening for the journal bearing and having vertical and horizontal webs integrally connecting it at the ends with the side casing and forming a clear air space, a gland at the outside of said block, and a matching gland at the inside of said block between the block and side casing thereby spacing and securing the bearing against axial movement in said opening, and means to maintain the glands in their matching position.

2. The combination with a side casing of a mill, and a rotor shaft mounted therein, of a journal bearing support consisting of an offset vertically disposed block integrally connected to the casing by spaced webs and having a horizontal cylindrical opening concentric with the axis of the shaft, a bearing located in said opening, an inner gland embracing the shaft and located between the said spaced webs and fitting against one side of said bearing, an outer gland fitting against the other side of said bearing,—said glands having lugs with matching holes that project beyond said offset block, and bolts passing through said matching holes of the glands and outside of said block, substantially as shown and described.

3. An improved mill casing provided with an offset block integrally supported from the side of the casing and having an opening axially disposed with regard to the rotor shaft, and a pair of openings in line with each other parallel to and eccentric to the shaft opening, substantially as shown and for the purpose described.

In testimony whereof I have affixed my signature.

HAROLD M. PLAISTED.