Nov. 23, 1954 F. LEISTER 2,695,201

PILLOW BLOCK

Filed June 12, 1951

Fig. 1.

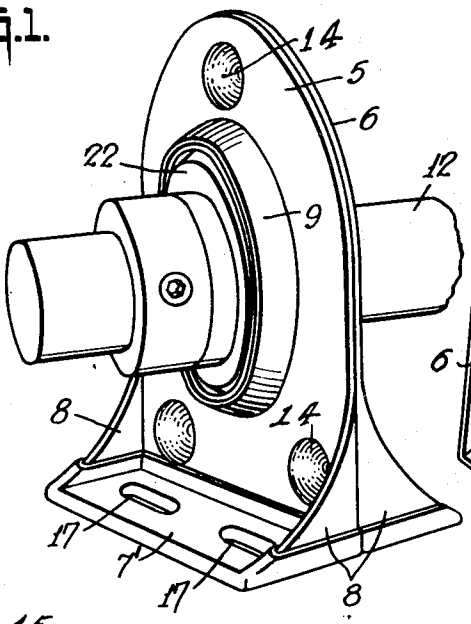


Fig. 4.

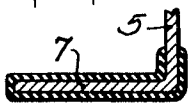


Fig. 5.

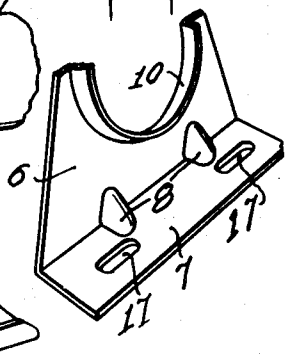


Fig. 2.

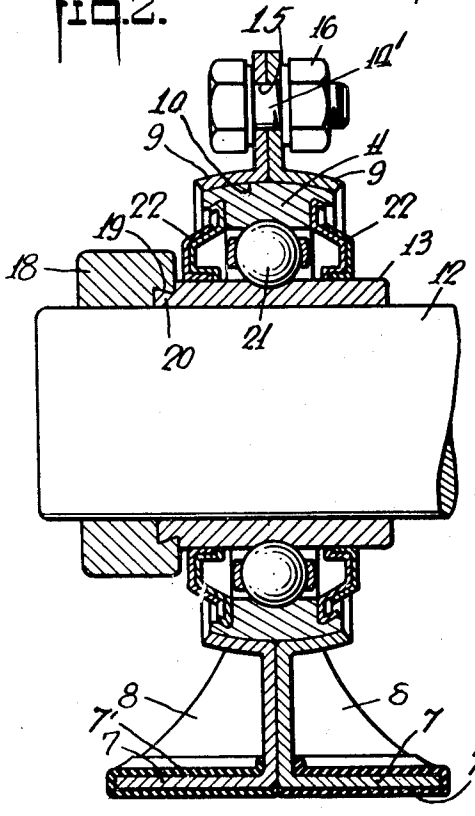
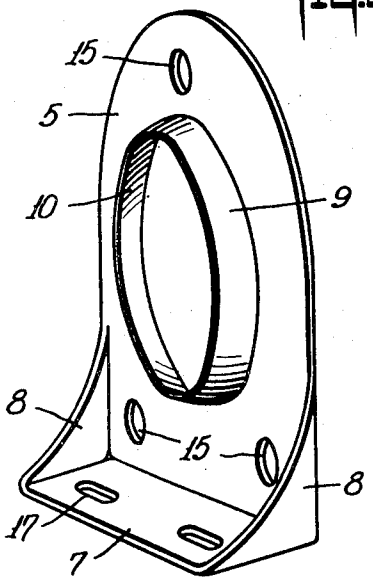


Fig. 3.



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PILLOW BLOCK

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Application June 12, 1951, Serial No. 231,163

5 Claims. (Cl. 308—72)

My invention relates to a pillow block and more particularly to the housing portion of the pillow block.

It is an object of the invention to provide an exceedingly simple, sturdy, inexpensive pillow block, which may permit substantial misalignment of a shaft.

It is another object to provide improved details of construction.

A further object is to provide a pillow block of the character indicated which will be relatively quiet in operation.

In the drawings which show, for illustrative purposes only, preferred forms of the invention—

Fig. 1 is a perspective view of a pillow block illustrative of the invention and showing a shaft in place;

Fig. 2 is a vertical, central, sectional view through the pillow block of Fig. 1 but illustrating bolts for holding the housing plates together instead of rivets as shown in Fig. 1;

Fig. 3 is a perspective view of one-half of a complete pillow block housing;

Fig. 4 is a fragmentary sectional view of a modified detail;

Fig. 5 is a fragmentary perspective view of a housing part illustrating a modified stiffening means.

The improved pillow block housing is preferably formed of a pressed steel or other metal, and is so arranged that two duplicate housing parts when brought together and secured form a complete pillow block housing for housing and holding an antifriction bearing.

As illustrated, the housing parts or plates **5—6** are symmetrical and are or may be duplicates of each other. Each housing part comprises a flat plate extending vertically, as shown in the drawings, and a right angularly extending flange **7** at the lower edge so as to provide a part of a base or foot of the complete pillow block. During the pressing operations, the flange **7** is formed, and integral gusset flanges **8—8** may be formed so as to give great strength and rigidity to the housing part so that there is no danger of the upstanding flange portion being bent one way or the other relatively to the foot flange **7** secured to a base. The upstanding plates or flanges **5—6** are each provided with an outwardly projecting annular flange **9**, the inner surface of which is preferably of spherical form, as indicated at **10** to receive the generally spherical surface of the outer ring **11** of an antifriction bearing carried by the housing. When the two plates **5—6** are brought together face to face over the outer bearing ring **11**, the latter will be held in the generally spherical housing formed by the respective flanges **9—9**, and before as well as after the plates are rigidly secured together the outer ring may self-align itself in the housing to accommodate any misalignment of the shaft **12**, which passes through the inner ring **13** of the antifriction bearing, such as the ball bearing shown. There are many well known ways of securing together metal plates such as the housing plates **5, 6**, including welding, stitching, riveting and bolting. By way of example, the plates in Fig. 1 are rigidly and permanently secured by rivets **14** passing through apertures **15** and the plates of Fig. 2 are rigidly secured by bolts **14'** and nuts **16**.

The feet **7** are preferably apertured as at **17** for the passage of bolts, lag screws or the like (not shown) for securing the pillow block to a support. In Fig. 5 I have shown a modified form of stiffening for the plates, in the form of integral ribs **8'** struck from the plates and

base flanges **7**. Such ribs may be in lieu of or in addition to the gussets **8**. Stiffening means such as the gussets and ribs **8, 8'** will be very useful where only one of the plates **5, 6** is provided with a foot **7**. In order to lessen noise and vibration I prefer to cover or coat the base flanges **7, 7** with sound deadening material such as rubber **7'** or **7''** (Fig. 4) when only one foot is provided. The coating preferably covers the inside of the apertures **17** so the entire pillow block is sound insulated.

The inner bearing ring **13** may be secured to the shaft **12** as by means of a locking collar **18**, which has an eccentric counterbore **19** fitting over an eccentric cam end **20** on the inner bearing ring. When the inner bearing ring **13** and the locking collar **18** are rotated slightly relatively to each other, the eccentric locking surfaces jam and the inner ring **13** is firmly locked to the shaft.

The bearing consisting of the outer ring **11**, the inner ring **13** and interposed balls **21** may be sealed as by the labyrinth seals **22—22** and the bearing may be lubricated for life.

It will be seen that I have provided a very simple pillow block, consisting of two very simple housing parts formed of pressed metal, which will have great strength and yet will be light and inexpensive to manufacture. Furthermore, the bearing will be permitted substantial self-alignment. The pillow block may be made sound deadening when desired by means of the rubber covered feet.

My improved pillow block has wide application and will provide the many advantages of a self-aligning, antifriction bearing pillow block at very moderate cost.

While the invention has been described in considerable detail and a preferred form illustrated, it is to be understood that changes and modifications may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a pillow block, a pair of housing plates mounted in face to face abutting relationship, means for holding said plates thus together, each plate having a right angularly and outwardly extending base flange constituting a base or foot for the pillow block, said plates and flanges having generally triangular integral gusset stay flanges joining them together, said base flanges having openings for securing bolts, each plate above said base having an annular outwardly extending flange of generally spherical form, said annular flanges on said two plates constituting together a generally spherical bearing housing, a bearing in said housing and comprising outer and inner bearing rings with interposed antifriction bearing members, said outer bearing ring having a generally spherical outer surface to fit said bearing housing, whereby the bearing will be self-aligning in said bearing housing.

2. In a pillow block, a pair of housing plates mounted in face to face abutting relationship, means for securing said plates together, said plates having laterally and oppositely directed annular flanges of generally spherical form to form a generally spherical housing for a bearing, a bearing in said housing and having a generally spherical surface to fit said generally spherical housing, whereby said bearing may self align itself in said housing and be secured in said housing, said plates having angularly extending foot flanges provided with apertures to receive means for securing said pillow block to a support, said foot flanges having a coating of sound-deadening material unitarily secured thereon.

3. A pillow block bearing, comprising a housing formed of a pair of rigidly connected one-piece pressed metal members, one of said members having a flat body portion, mounting pad means for said member, a pair of generally triangular bracing webs extending outwardly from opposite edges of said flat body portion to said mounting pad means, the other of said members having a flat body portion in face contact with the body portion of said first mentioned member, said flat body portions having peripherally flanged aligned openings collectively forming an annular bearing seat for a bearing.

4. A pillow block bearing, comprising a housing

formed of a pair of substantially identical, rigidly connected one-piece pressed metal members, each of said members having a flat body portion, mounting pads on the said body members and extending at right angles thereto, and generally triangular bracing webs extending outwardly from opposite edges of said flat body portions to said mounting pads, said flat body portions having aligned openings defined by oppositely and outwardly extending flanges collectively forming an annular bearing seat for a bearing.

5. A pillow block bearing, comprising a housing formed of a pair of identical, rigidly connected one-piece pressed metal members, each of said members having a flat body portion, a pair of mounting pads, and a pair of bracing webs extending outwardly from the opposite edges of the flat body portions to the mounting pads, said flat body portions having peripherally flanged, aligned openings, said flanges being of arcuate cross-section and extending axially outwardly in opposite directions from the flat body portions to collectively provide an annular bearing seat, and an antifriction bearing unit mounted in said seat.

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