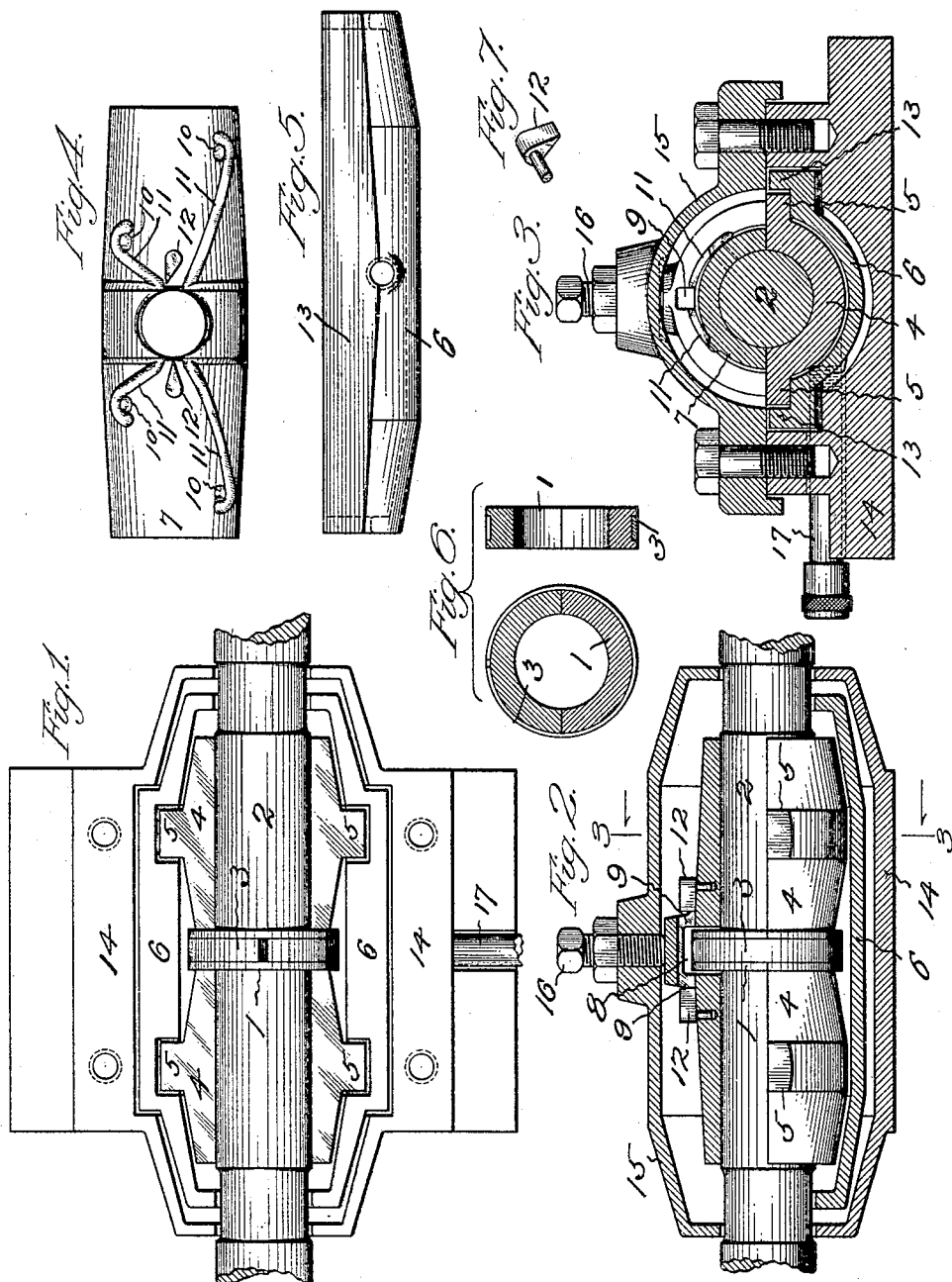


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P. A. WHITNEY.
JOURNAL BEARING.

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Witnesses.

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JOURNAL-BEARING.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PARDON A. WHITNEY, a citizen of the United States, residing at Southington, in the county of Hartford and State of Connecticut, have invented a new and useful Journal-Bearing, of which the following is a specification.

This invention relates to a self-lubricating journal-bearing. This bearing is particularly designed for the journals of grinding, polishing, buffing, and similar machines; but it is also applicable to other machines having rapidly-rotating journals.

The object of the invention is to provide a comparatively simple self-aligning and self-lubricating journal-bearing which is so constructed that the journal is kept efficiently lubricated with a small amount of lubricant, the flow of which can be readily observed and easily controlled.

The journal-bearing which is illustrated as embodying the invention has two self-aligning pillow-blocks supported by a box that rests upon a bed, with a cap above the pillow-blocks that is provided with means for directing the lubricant which is thrown up from the box by a ring that turns with the shaft to several different points along the journal, which means can be readily uncovered to observe the action and can be adjusted to vary the flow of the lubricant.

Figure 1 of the accompanying drawings shows a plan of this journal-bearing with the cover removed. Fig. 2 shows a vertical longitudinal section of the bearing. Fig. 3 shows a vertical transverse section on the plane 3-3 on Fig. 2 looking in the direction indicated by the arrows. Fig. 4 shows a plan of the cap. Fig. 5 shows a side view of the box. Fig. 6 shows two sections of the lubricating-ring, which is fastened on the journal. Fig. 7 shows a perspective view of one of the switches used to control the flow of lubricant on the top of the cap.

The lubricating-ring 1 preferably consists of two sections that are placed on the journal 2 and are held tightly together by the spring-band 3, which lies in a groove in the periphery of the ring. The band clasps the parts together, so that they rotate with the journal, but permit any expansion or contraction of the journal lengthwise under the influence of changes in temperature.

Each side of the ring is a pillow-block 4. These pillow-blocks have outwardly-extending lugs 5, which rest in recesses in the upper

edge of the box 6. These lugs are a little smaller than the recesses, and the lower edges are curved, so that each block may have a slight movement in order to align itself perfectly with the section of the journal it supports.

Above the blocks is a cap 7, which has a central recess 8, through which passes the ring that is fixed on the journal. Passages 9 extend outwardly from the central recess in the cap approximately longitudinally with relation to the journal, and extending on the upper sloping surface of the cap from these passages to perforations 10 through the cap at different localities are ribs 11. Lubricant which is thrown up by the rotation of the ring on the journal flows out through these passages from the central recess and down on the top of the cap and is guided to the several perforations by these ribs. Buttons or switches 12 may be placed on the top of the cap in such manner that they may be turned one side or the other to direct more or less of the lubricant as it is thrown out through the passages to the several perforations through the cap.

The box in the form of bearing shown has flanges 13 on each edge, which rest in recesses in the bed 14. The lower edges of these flanges are inclined so that the box will bear on the center in such manner that it may tip one way or the other for aligning itself to the blocks and journal. A cover 15 is desirably placed over the bearing and fastened to the bed by screws. A set-screw 16, with a clamp-nut, is turned through the cover against the top of the cap for holding the cap in place against the journal.

An opening is made through the box, and an oiling-tube 17, of common construction, is inserted in this opening to permit the filling of the lower part of the recess in the box with lubricant.

A small quantity of lubricant is allowed to flow into the lower part of the box through the oiling-tube. When the shaft rotates, this lubricant is carried up by the ring and is thrown out through the passages from the central opening in the cap, so that it will flow down the inclined walls on the top of the cap. This lubricant tends to flow more freely toward the sides of the cap in the same direction as the rotation of the shaft, and if switches are provided they may be so turned as to counteract this effect and insure a flow of lubricant down both sides of the cap in the

desired quantities. The ribs on the top of the cap direct the lubricant to the various perforations through which it passes to the top of the journal. In this manner the entire surface of the journal is kept thoroughly lubricated by a small quantity of lubricant. The lubricant cannot be filled above the level of the oiling-tube. Consequently there is not enough lubricant to flow out at the ends of the box. Should a small quantity of lubricant be thrown past the ends of the box, it collects in the recess in the bed.

The engagement of the sides of the ring with the ends of the pillow-blocks prevents any endwise movement of the journal. The pillow-blocks are self-aligning in the box, and the box is self-aligning in the bed. The cover can be quickly removed at any time for observing the flow of lubricant on the top of the cap, and when the cover is removed the cap can be lifted from place and either or both of the blocks can be removed, if desired. This permits the condition of the bearing to be observed at any time and the flow of oil to be noted and regulated.

This bearing can be readily used as a hanger by merely changing the shape of the bed and arranging it so that it can be supported from above instead of resting it on something below.

The invention claimed is—

1. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

2. The combination with a journal of a lubricating-ring a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, and a bed supporting the box, substantially as specified.

3. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a re-

cess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, a bed supporting the box, and a cover secured to the bed, substantially as specified.

4. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, movable buttons on the top of the cap adjacent to the passages, and a box supporting the blocks, substantially as specified.

5. The combination with a journal of a lubricating-ring formed in sections and held to the journal by a spring-band, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

6. The combination with a journal of a lubricating-ring a pillow-block each side of the ring, a cap having inclined upper surfaces over the pillow-blocks and having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

7. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, a bed supporting the box, a cover fastened to the bed, and a screw extending through the cover for holding the cap down to the journal, substantially as specified.

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