No. 724,976. PATENTED APR. 7, 1903.

W. L. WEBSTER.

SHAFT BEARING.

APPLICATION FILED JULY 23, 1902.

NO MODEL.

FIG. 2.

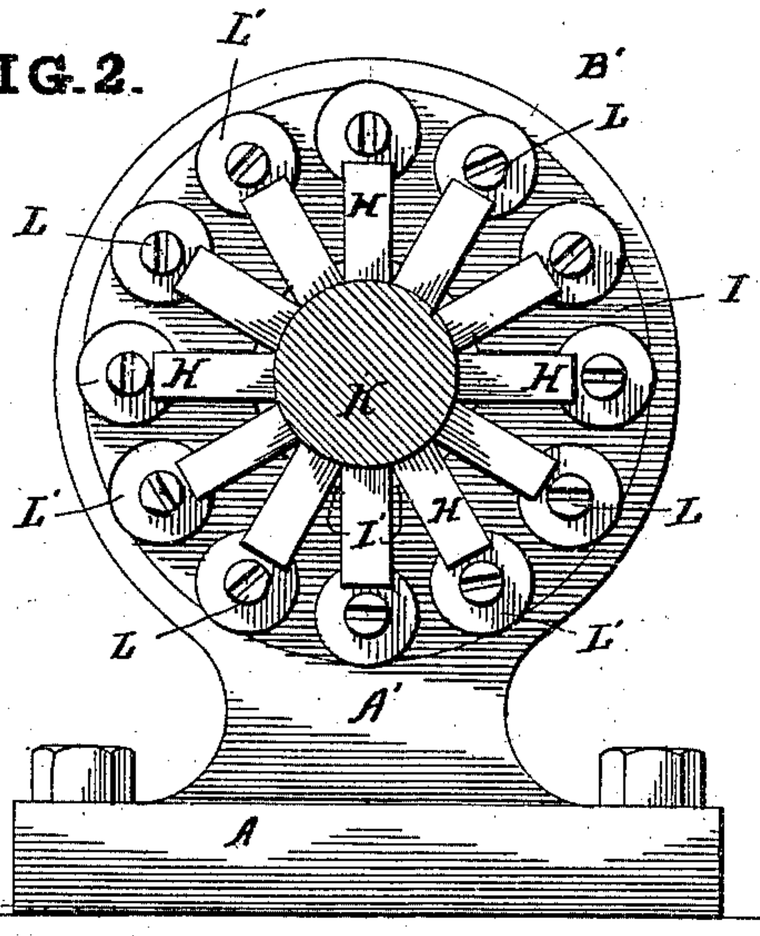


FIG. 3.

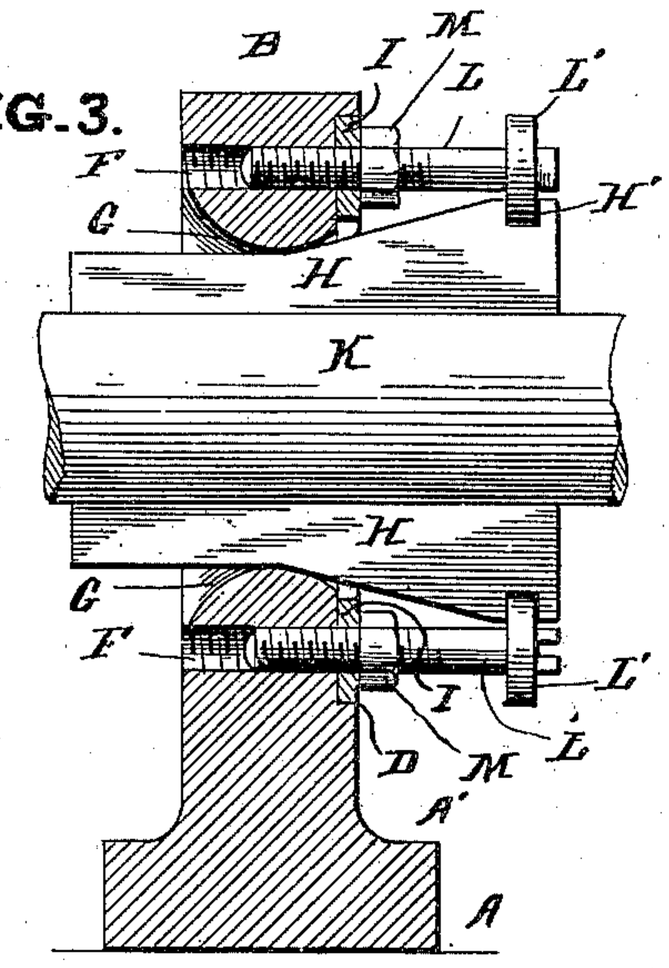


FIG. 5.

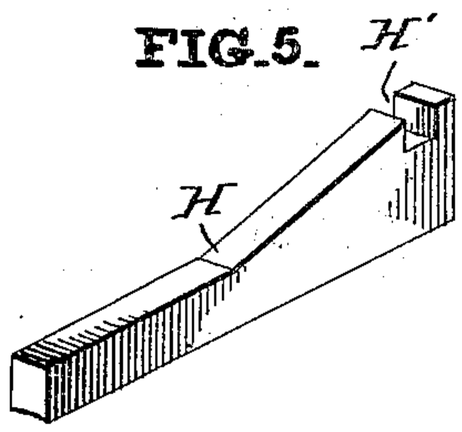


FIG. 1.

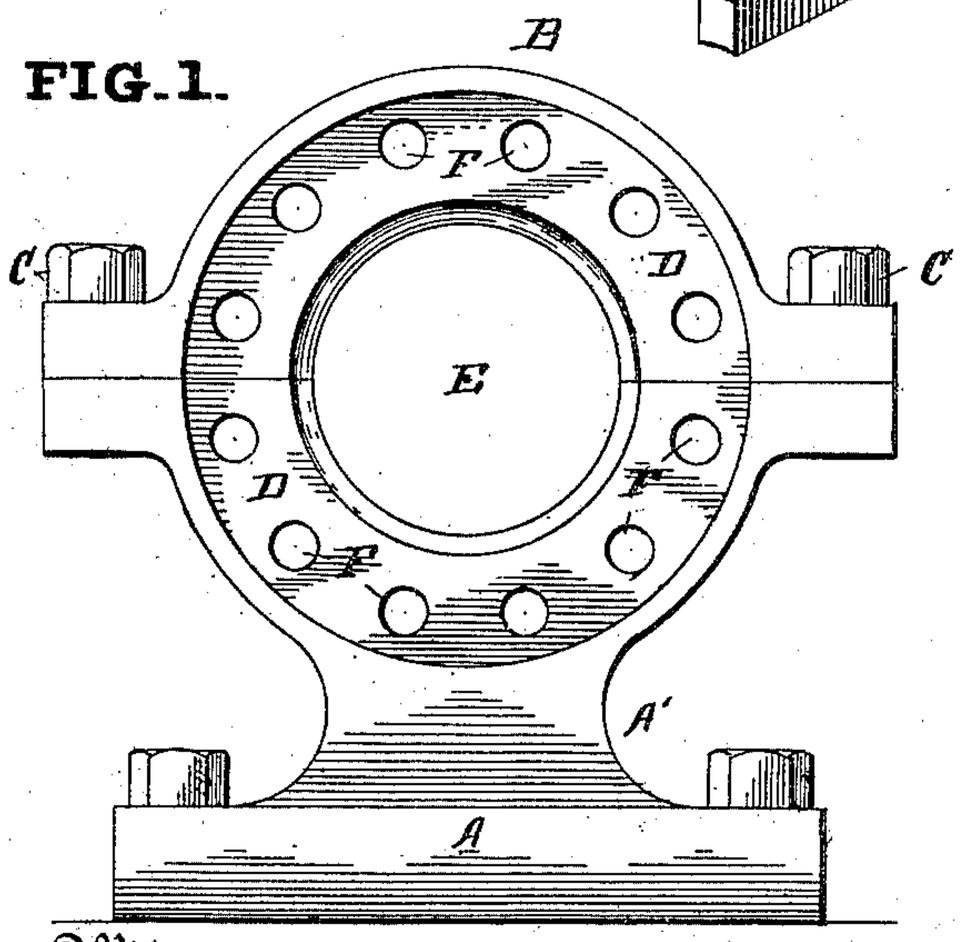
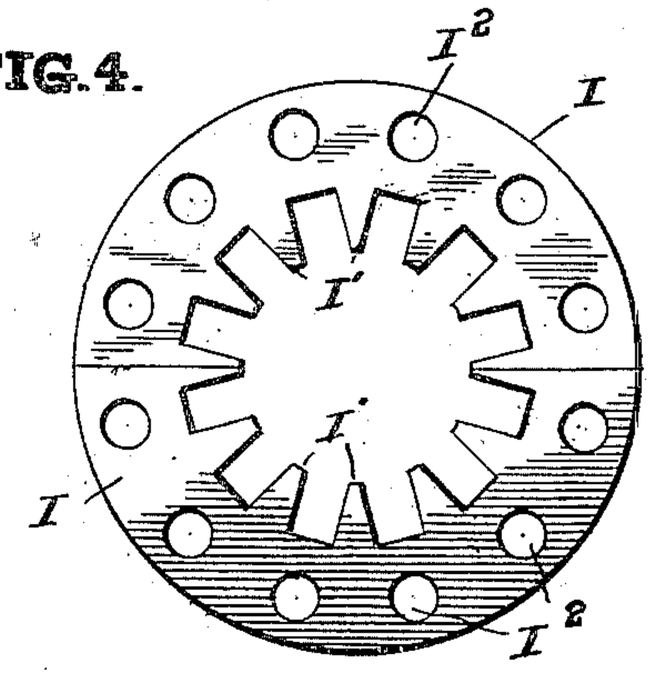


FIG. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM LLOYD WEBSTER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ALBERT CROMWELL, OF NEW YORK, N. Y.

SHAFT-BEARING.

SPECIFICATION forming part of Letters Patent No. 724,976, dated April 7, 1903.

Application filed July 23, 1902. Serial No. 116,658. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LLOYD WEBSTER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Shaft-Bearings, of which the following is a specification.

This invention relates to adjustable sectional bearings for shafts, plunger-rods, and the like.

The object of the invention is to produce an improved bearing for a shaft, which shaft may either rotate or reciprocate; and the invention consists in certain improved constructions and combinations of elements, substantially as hereinafter enumerated in the claims hereunto annexed.

Figure 1 is an end elevation of a divided bearing-box to which the bearing may be applied, showing the screw-holes surrounding the shaft-passage. Fig. 2 is an end elevation of a solid bearing-box, showing end view of sectional wedges, ends of adjusting-screws, and shaft in section as applied to the bearing-box. Fig. 3 is a vertical central section of the mechanism shown in Fig. 2, the broken shaft being shown in elevation. Fig. 4 is an elevation of a guide-plate by which the wedges are spaced. Fig. 5 is a perspective view of one of the wedges or bearing-sections.

Let A indicate the base of a bearing-block, and B the cap therefor. The cap B may be screwed to the base by screws or bolts C C in manner usual for holding the cap on a shaft-bearing. In the end of the bearing-block there is an annular recess D and a shaft-passage E. Holes F enter the body of the block, and these holes are screw-threaded and preferably arranged in a circle about the shaft-passage E. The inner edge of the shaft-passage is rounded in the direction of the length of the shaft, as indicated at G, Fig. 3.

The bearing proper is formed on the inner edges of a number of wedges or bearing-sections H. The inner faces of all these wedges are so shaped as to give the proper support to a shaft placed between such wedges or sections, being usually concave, as shown. The outer edges of these wedges rest against the inner rounded face G of the bearing-block.

An annular plate I rests in the chamber D in the end of the block. This plate I has internal projections or teeth I′, which projections space and separate the wedges H and cause such wedges to present their inner bearing edges to the shaft K, which shaft is inclosed between such wedges. Plate I has holes I^2 corresponding to holes F in the box and cover. Each wedge H has a notch H′ near its wide end. A screw L passes through the proper hole in plate I and enters one of the screw-threaded holes F in the bearing-box. An annular head or flange L′ on the screw enters notch H′ in the wedge, which is in alinement with such screw and which extends between two of the projections I′ of the plate I and has its outer edge resting against the rounded surface G of the bearing-box.

Screws L are adjustable by means of any suitable tool applied in usual manner. When a screw L is screwed into the bearing-box, its head L′ in notch H′ forces the wedge in direction of its length, and the inner edge of the wedge resting against the shaft is tightened thereon by the wedging action of its outer edge bearing against the rounded surface G of the bearing-block. A reversal of such movement loosens and withdraws the wedge.

Set-nuts M on the screws L may be used to hold the plate I in place in chamber D in the bearing-block.

When the shaft cannot conveniently be entered lengthwise into its bearing, the cap B′ must be made removable, as in Fig. 1, and the plate I must be made in sections, so as to be applied to the shaft; but where the shaft is a plunger-shaft it is generally feasible to make the bearing-box in one piece, the cap B′ being solid with base A′, as in Fig. 2. In either case the coöperation of elements constituting the bearing will be the same.

The inner edges of wedges H are preferably concaved to conform to the shape of the shaft they inclose.

The sectional bearing-pieces or wedges H can all be adjusted to take up wear in shaft or bearing, or they can be separately adjusted to rectify centering or alinement of the shaft. As these pieces take substantially the entire wear due to the movement of the shaft, they are made of material suited to the purpose to which they are applied, whether the

same be metal, wood, or composition. The wedges can be readily replaced when worn.

Any usual and desirable arrangement for lubricating the shaft may be made.

Plate I is readily removable and replaceable and the number of teeth or projections is according to the conditions required.

It is not essential that all the wedge-pieces H be present, so the shaft has sufficient support at opposite sides. The width of these wedges is a matter of convenience, so that they correspond to the notches in plate I.

The notched annular guide-plate will preferably be made in sections, as shown in Fig. 4, for convenience in applying to shafts. It is quite feasible that the plate be in one piece, however, as in Fig. 2, when the shaft can be applied to the bearing by lengthwise movement.

The wedges preferably do not bear at their outer edges against guide-plate I, but bear on the rounded surface G of the bearing-block. The wedges are thus able to assume a position with their inner bearing-faces in line with the surface of the shaft, whether such surface be exactly in line with the bearing-box or not. The bearing thus becomes practically self-alining.

What I claim is—

1. In a bearing for shafts, the combination of a bearing-block having a recess, a notched annular plate in said recess, and a series of wedges in the notches in the plate, presenting their inner edges as a shaft-bearing.

2. In a bearing for shafts, the combination of a bearing-block having a recess in one end, a notched annular plate in said recess, a series of wedges in the notches in the plate and presenting their inner edges as a shaft-bearing, and a series of screws entering the threaded recesses in the bearing-block, and having their heads bearing against the wedges to force the same in the direction of the length of the shaft.

3. The combination with a bearing-box, of a notched annular guide-plate secured at one end thereof, a series of wedges in the notches in said plate forming a shaft-bearing at their inner edges, and means for moving the wedges lengthwise, to increase or diminish the diameter of the space between the wedges.

4. The combination with a bearing-box, of an annular guide-plate having internal projections or teeth, screws passing through the guide-plate and engaging threads in the bearing-box, nuts on said screws by which the plate is held, and wedges in the spaces between the teeth of the guide-plate, adjustable by the screws which have heads engaging the wedges.

5. The combination with a bearing-box having its inner opening rounded in the direction of the length of the shaft-opening, of a series of wedges in said opening having their outer edges against the rounded surface of the box, and means for adjusting said wedges lengthwise.

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

WILLIAM LLOYD WEBSTER.

Witnesses:
JOHN D. BROWN,
FRED J. STARR, Jr.