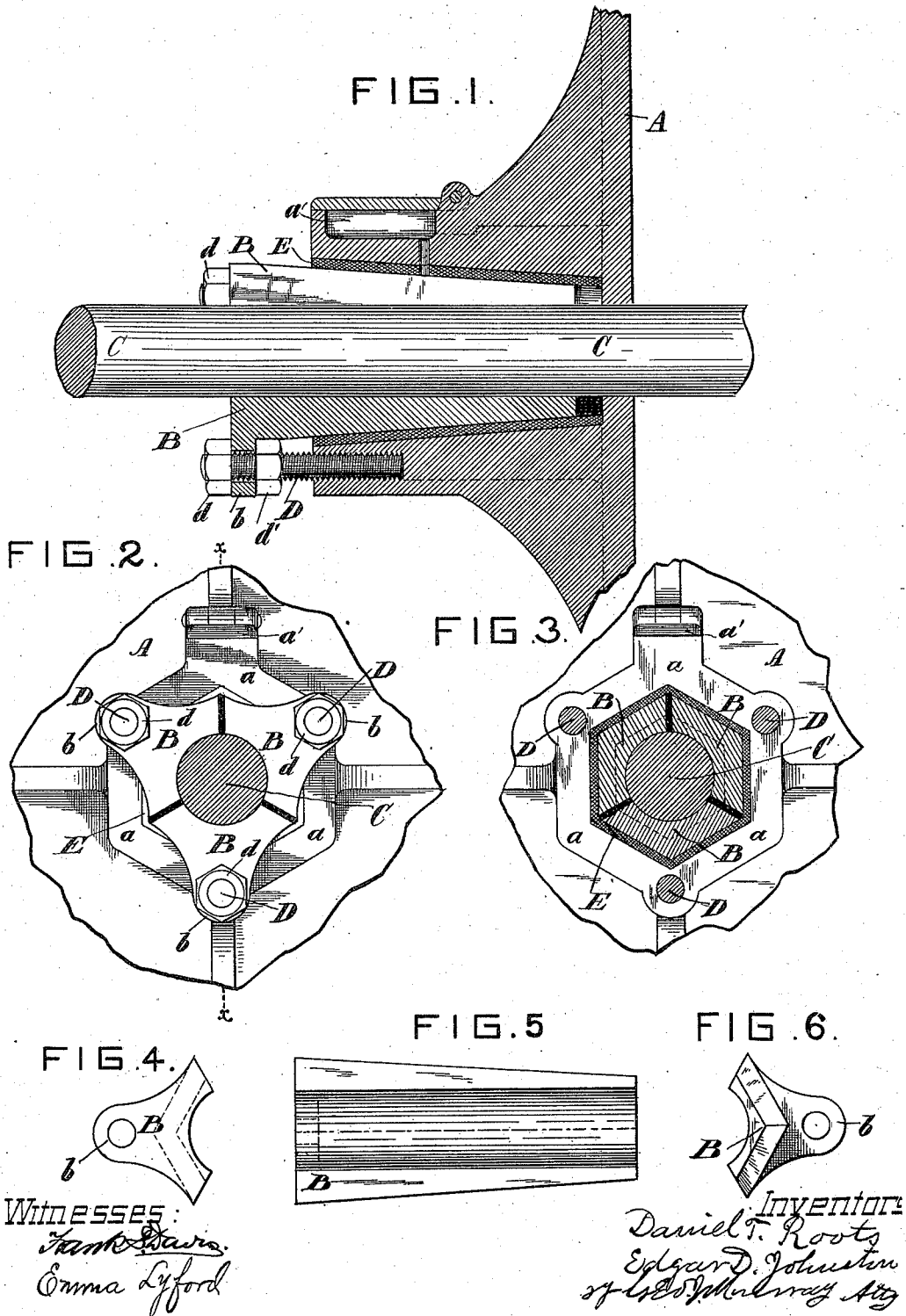


(No Model.)

D. T. ROOTS & E. D. JOHNSTON.
JOURNAL BEARING.

No. 575,312.

Patented Jan. 12, 1897.



UNITED STATES PATENT OFFICE.

DANIEL T. ROOTS AND EDGAR D. JOHNSTON, OF CONNERSVILLE, INDIANA,
ASSIGNORS TO THE P. H. & F. M. ROOTS COMPANY, OF SAME PLACE.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 575,312, dated January 12, 1897.

Application filed March 10, 1894. Serial No. 503,098. (No model.)

To all whom it may concern:

Be it known that we, DANIEL T. ROOTS and EDGAR D. JOHNSTON, citizens of the United States, and residents of Connerville, in the county of Fayette and State of Indiana, have invented certain new and useful Improvements in Journal-Bearings, of which the following is a specification.

Our invention is an improved journal-bearing and is especially designed for the piston-shafts of rotary blowers.

It consists in the peculiar combination and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly referred to and pointed out in the claims hereto annexed.

Referring to the drawings, Figure 1 is a longitudinal sectional view with so much of the end plate of a blower with our improved bearing attached as is necessary to illustrate the invention, the section being taken on line *xx* of Fig. 2, which figure is an end elevation with the gear-wheel or driving-pulley removed and the piston-shaft shown in section. Fig. 3 is a transverse sectional view taken through line *yy* of Fig. 1, looking toward the blower end. Fig. 4 is an outer end elevation of one of the sectional bearings. Fig. 5 is a longitudinal inside elevation of the same. Fig. 6 is an elevation looking at the inner end of the bearing.

Referring to the parts, A represents a part of one of the end plates of the Roots blower-case, both ends of the case being alike and provided with two outwardly-extended bosses, as *a*. These bosses have tapered recesses extending from the outer case to near the inner wall of the case end to receive the sectional bearings B. The recesses are formed in molding by employing hexagon cores, and the end wall is centrally bored to pass the piston-shaft C.

The sectional bearings B, of which there are three for each bearing, are dressed true interiorly to fit the shaft C. The exterior surfaces of these bearings are tapered longitudinally, and in cross-section are made on angles of sixty degrees to conform to the angular opening in the bosses *a*. Each of the sectional bearings has a radially-extended perforated lug *b*, and the screw-bolts D, which

are screwed into the ends of the bosses *a*, pass through these perforations and are provided with nuts *d* and *d'* upon each side of the lugs *b*, by which means the sectional bearings are forced inwardly to compensate for wear and are locked in place.

It is preferable to mold the bearings in a single piece, and after they are bored out true to fit the shaft and dressed true exteriorly to then separate them through the angles in three equal sections by a sawing or milling tool of sufficient width to cut away sufficient of the metal to allow the bearings to be forced inwardly, each independently of the other, so that the wear may be taken up upon either one of the bearings its full length.

To form the seat E for the sectional bearings, a blank of the exact shape and size of the bearing before it has been separated, except that its tapered end is extended to reach the bottom of the angular tapered opening in the boss, is placed within the angular recess in the boss *a* and held in true central position by a shaft, as C, or the shaft may be made in the form of the core-front, extending from the blank to enter the circular perforation in the end of the case. Then the seat or lining E, which is preferably of Bab-bitt metal, is poured around the form, and after the form is removed there is a smooth, even surface upon the inside of the lining E for the sectional bearing to slide upon.

The upper side of the boss *a* is provided with an oil-well covered by a hinged cap *a'*, and the bottom of the well is perforated through the boss and seat E to form an oil-duct for the lubricant, which passes through the slots between the upper sectional bearings to the shaft C.

In practice the strain and consequent wear are most upon the lower sectional bearing and upon the lower portion of the upper sectional bearings. On the top there is little wear, unless the driving-pulley should be belted above, which is seldom the case. The sectional bearings B, being exactly the same in contour, are interchangeable, and should the lower one require forcing in to its full limit before the other two should require so much adjustment it may be replaced or inter-changed with either of the others or removed

for a new section, and should the wear be upon the lower side of either of the upper sections they may be changed one for the other and the shaft kept in true alinement until the bearings require replacement.

What we claim as new is—

1. The combination, substantially as here-
inbefore set forth, of the end plate for the ro-
tary blower, having a boss or journal support
formed integral therewith, said boss being an-
gularly recessed and tapered longitudinally,
sectional bearings for the shaft having their
exterior surfaces angularly formed and tapered
counter to the recess in the boss, said
sectional bearings having radially-projecting
perforated lugs, bolts tapped into the ends of
said boss and passing through the lugs, and
tightening-nuts to adjust the bearings within
the recess to compensate for wear.
2. The combination of the end plate of the
blower-case having outwardly-projecting boss
to form a journal-support, said boss being an-
gularly recessed in cross-section and tapered
longitudinally, sectional bearings having
their exterior surfaces angular in cross-sec-
tion, tapering counter to the recess in the boss,
and having radial perforated lugs for each
section of the bearing, a lining-seat interposed
between the walls of the recess and the exte-
rior of the sectional bearings, bolts secured

in the ends of the bosses and passing through the perforated lugs, and the adjusting-nuts upon said bolts and upon opposite sides of the lugs to force the bearings inward to compensate for wear and hold said bearings in position, substantially as shown and de-
scribed.

3. The combination of the blower end, having outwardly-projecting boss to form a support for the journal-bearings, said boss having recesses angular in cross-section and tapering longitudinally, said end being perforated to pass the piston-shaft, sectional bearings, three in number, for the boss, adapted to slide therein and being interchangeable, the lining or seat of Babbitt metal interposed between the inner walls of the recess and the exterior of the sectional bearings, oil-wells at the upper end of the boss, having a duct extending through the shell, the cap covering said duct, and means such as shown to adjust the sectional bearings independent of each other, substantially as shown and described.

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Witnesses:

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