(No Model.)

A. GIESLER.

ANTI FRICTION SHAFT BEARING,

No. 348,392. Patented Aug. 31, 1886.

Fig. I

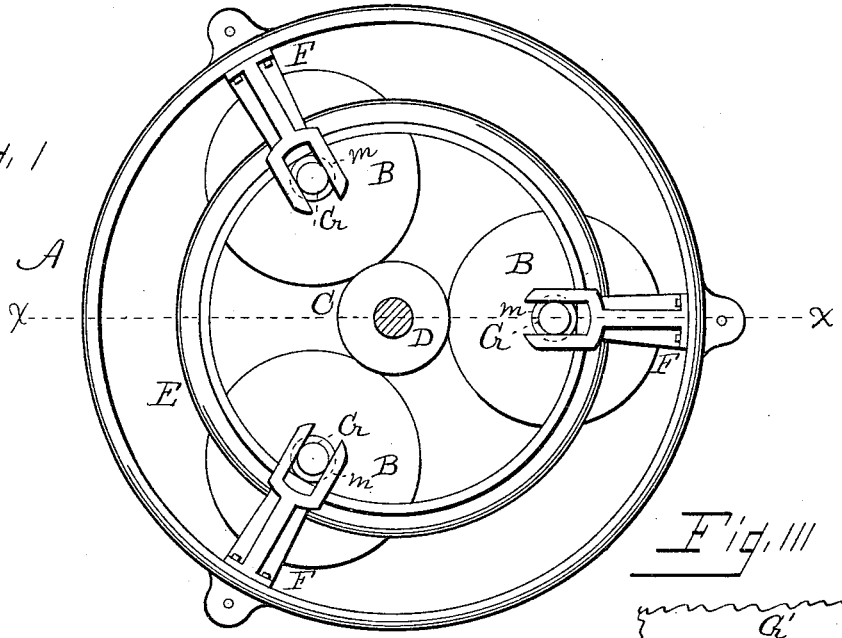


Fig. III

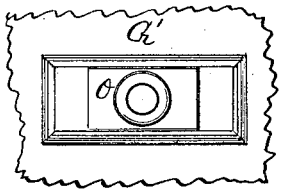
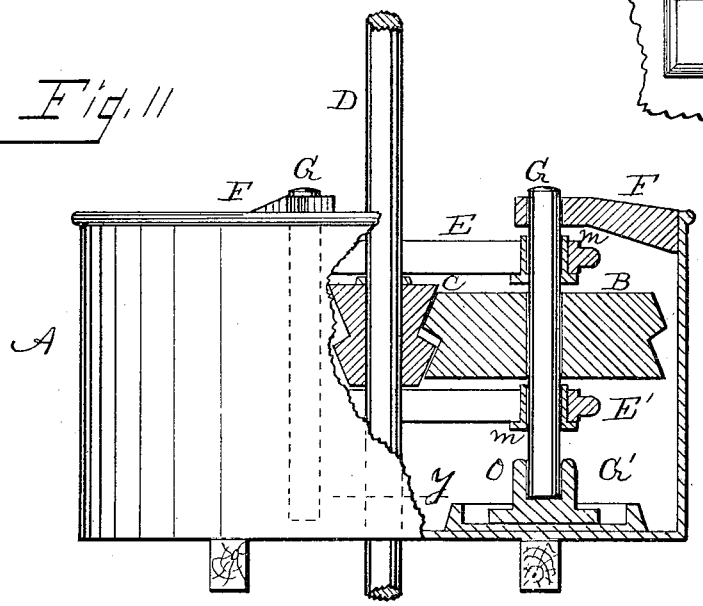


Fig. II



Witnesses
Fred Reibold
Leopold Leibold

Inventor
Arthur Giesler
By his Attorney B. Pickering

UNITED STATES PATENT OFFICE.

ARTHUR GIESLER, OF DAYTON, OHIO.

ANTI-FRICTION SHAFT-BEARING.

SPECIFICATION forming part of Letters Patent No. 348,392, dated August 31, 1886.

Application filed March 27, 1886. Serial No. 196,848. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR GIESLER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a certain new and useful Improvement in Anti-Friction Shaft-Bearings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in an anti-friction shaft-bearing; and it consists of a bearing-block in the form of a double truncated cone with faces downward attached to a vertical shaft, the said bearing-block being supported by three pulleys having corresponding faces to that of the bearing-block, and which are supported in movable bearings or guides on radial lines at the top and bottom of the pulley-shafts. These parts are supported in a hollow frame with arms at the top, and to maintain the position of the series of pulley-shafts two circular rings embrace thimbles on the several shafts, and thereby hold the pulleys in contact with the bearing-block of the shaft, thus forming a frictionless bearing for the shaft. The mechanism is illustrated in the accompanying drawings, in which—

Figure I is a top view or plan of the anti-friction shaft-bearing. Fig. II is a fragmentary vertical section of the same on the line *x*. Fig. III is a portion of the bottom of the case, showing the guide in which the step of the pulley-shaft travels.

Similar letters designate like parts throughout the several views.

A is a circular case with closed bottom other than an orifice for the shaft. Guides G′ are attached to the bottom, and arms F are attached at the top, which serve as guides for the pulley-shafts. The step O, which supports the pulley-shaft, moves freely in a radial direction within said guide. The guide-arms F give lateral support to the upper end of the pulley-shafts. The form of the faces of the three pulleys is that of a truncated cone with the faces pointing upward. On all the pulley-shafts G are attached the flanged thimbles *m*. The circular traveling rings E E′ are supported on these thimbles, and the function of these rings are to hold the surfaces of the three pulleys against the bearing-block C. This bearing-block is of the form of a double inverted truncated cone, and is firmly keyed to the shaft D. This shaft may be provided with a shoulder, against which the bearing-block may be keyed. The case may have a series of ears at the top for attachment to parts of the building, or the attachment may be effected to the timbers through the bottom. When used to sustain a shaft that is driven, the same may terminate at the dotted line at *y;* but when the device is attached to a driving-shaft, as of a turbine water-wheel, the shaft is embraced by said device at any suitable point. The three pulleys have the same relation to the bearing-block, and the construction of these parts and their connection with the case are identical.

The operation is thus: The bearing-block bears against the pulleys, which are held in guides, the pulley-shafts bear against the circular traveling rings, and the pulley-shafts support the entire weight on the steps O, and thus the parts revolve with less friction.

The bearing-block may be constructed as of the form of a single truncated cone, or this form may be multiplied to any extent desirable. By attaching to the shaft two separate truncated cone bearing-blocks, a single traveling ring would only be necessary between the two.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In combination with a vertical shaft, the truncated cone bearing-block C, the three pulleys B, traveling rings E E′, with thimbles on shafts of said pulleys for the support of the said rings, and case A with guide-arms F and step-guides G′, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ARTHUR GIESLER.

Witnesses:
B. PICKERING,
C. A. WALTMIRE.