(No Model.)

M. GALE.

ANTI FRICTION BEARING.

No. 344,573. Patented June 29, 1886.

Fig. 1

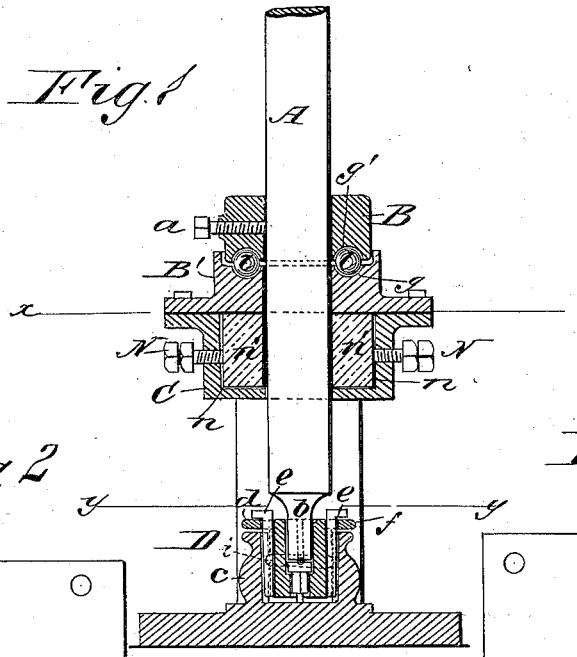


Fig. 2

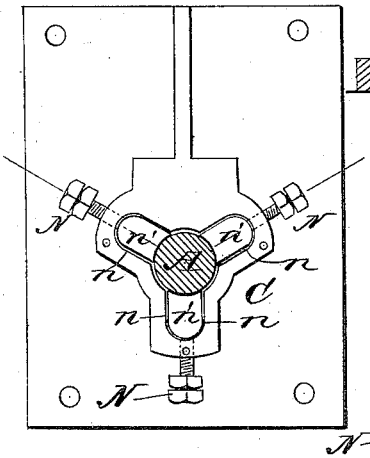


Fig. 3

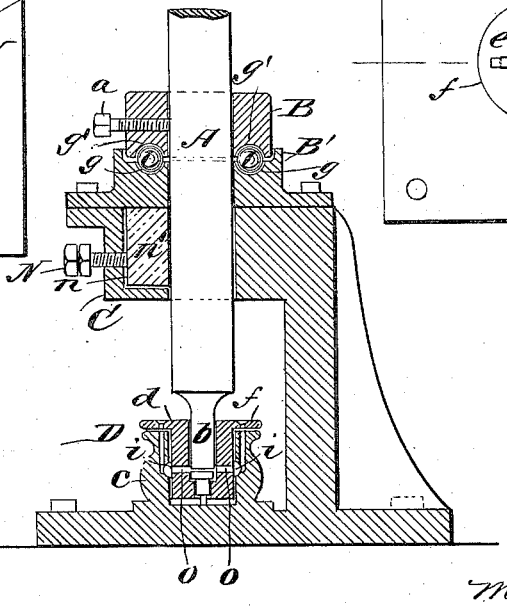
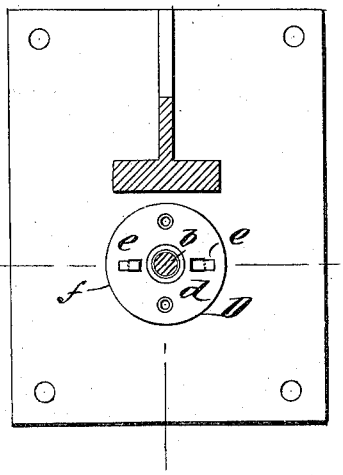


Fig. 4



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UNITED STATES PATENT OFFICE.

MORGAN GALE, OF NEAR SANTA ROSA, SAN SALVADOR, CENTRAL AMERICA.

ANTI-FRICTION BEARING.

SPECIFICATION forming part of Letters Patent No. 344,573, dated June 29, 1886.

Application filed November 19, 1885. Serial No. 183,277. (No model.)

To all whom it may concern:

Be it known that I, MORGAN GALE, of near Santa Rosa, Republic of San Salvador, have invented a new and useful Improvement in Anti-Friction Bearings, of which the following is a full, clear, and exact description.

My invention relates to the construction of bearings for vertical shafts that revolve at a high rate of speed, and are required to support considerable weight.

The invention consists of certain details of construction and combinations of parts, as will be hereinafter described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all figures.

Figure 1 is a vertical sectional elevation of the combined devices. Fig. 2 is a horizontal sectional view taken on line *x x* of Fig. 1. Fig. 3 is a sectional elevation at right angles to Fig. 1 and Fig. 4 is a sectional plan view taken on line *y y* of Fig. 1.

Referring to the specific construction of the step and bearing illustrated in the drawings, A is a vertical shaft, to which is secured a collar, B, by means of set-screws *a a*, or other suitable means of attachment.

Below the collar B the shaft A projects through a pillow-block, B′, and a box, C to be more specifically explained, and finally terminates in a step, D, the shaft being reduced in diameter, as shown at *b*. This step D consists, essentially, of a hollow casting, *c*, within which the shaft-guiding cup or socket *d* fits, being held in the desired position by keys *e e*, which pass through apertures formed in the flange *f* of the socket *d*, and enter grooves formed in the side walls of the casting *c*. This casting is so formed that there is an annular oil-chamber, *i*, about the socket *d*, which chamber is fed by proper oil-ducts leading thereto. About in a line with the bottom of the shaft A are the two oil ducts *o o*, leading from chamber *i* to the interior of the socket *d*.

The weight of the shaft A, and any load it may carry, is taken up by a series of anti-friction balls, *l l l*, that rest within a groove, *g*, formed on the upper side of the pillow-block B′, a corresponding groove, *g*, being formed on the under side of the collar B, so that the step D merely acts as a guide for the lower end of the shaft A and not as a weight-supporting device.

The box C, to which the pillow-block B′ is bolted, is provided with three or more converging slots, *n n*, in which there are fitted bearing-blocks *n′ n′*, made from any of the well-known anti-friction bearing metals. These blocks *n′ n′* are adjusted to or from the shaft, as the necessities of the case require, by the adjusting-screws N N, that engage with threaded sockets formed in the box C.

By such an arrangement as has been described, the shaft A may be revolved at a high speed, and may be made to carry quite a weight, as is required in the case of the vertical shaft of an amalgamating pan, and by the provision made by the adjusting devices of the box C it becomes almost immaterial whether the weight carried by the shaft A is equally distributed on all sides or carried by one side alone.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the vertical revolving shaft A, of a collar, B, pillow-block B′, anti-friction balls *l l l*, box C, bearing-blocks *n′ n′*, and the adjusting-screws N N, substantially as and for the purpose set forth.

2. The combination, with the vertical revolving shaft A, of a collar, B, pillow-block B′, anti-friction balls *l l l*, the box C, bearing-blocks *n′ n′*, adjusting-screws N N, and a foot-guiding step, D, substantially as described.

MORGAN GALE.

Witnesses:
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