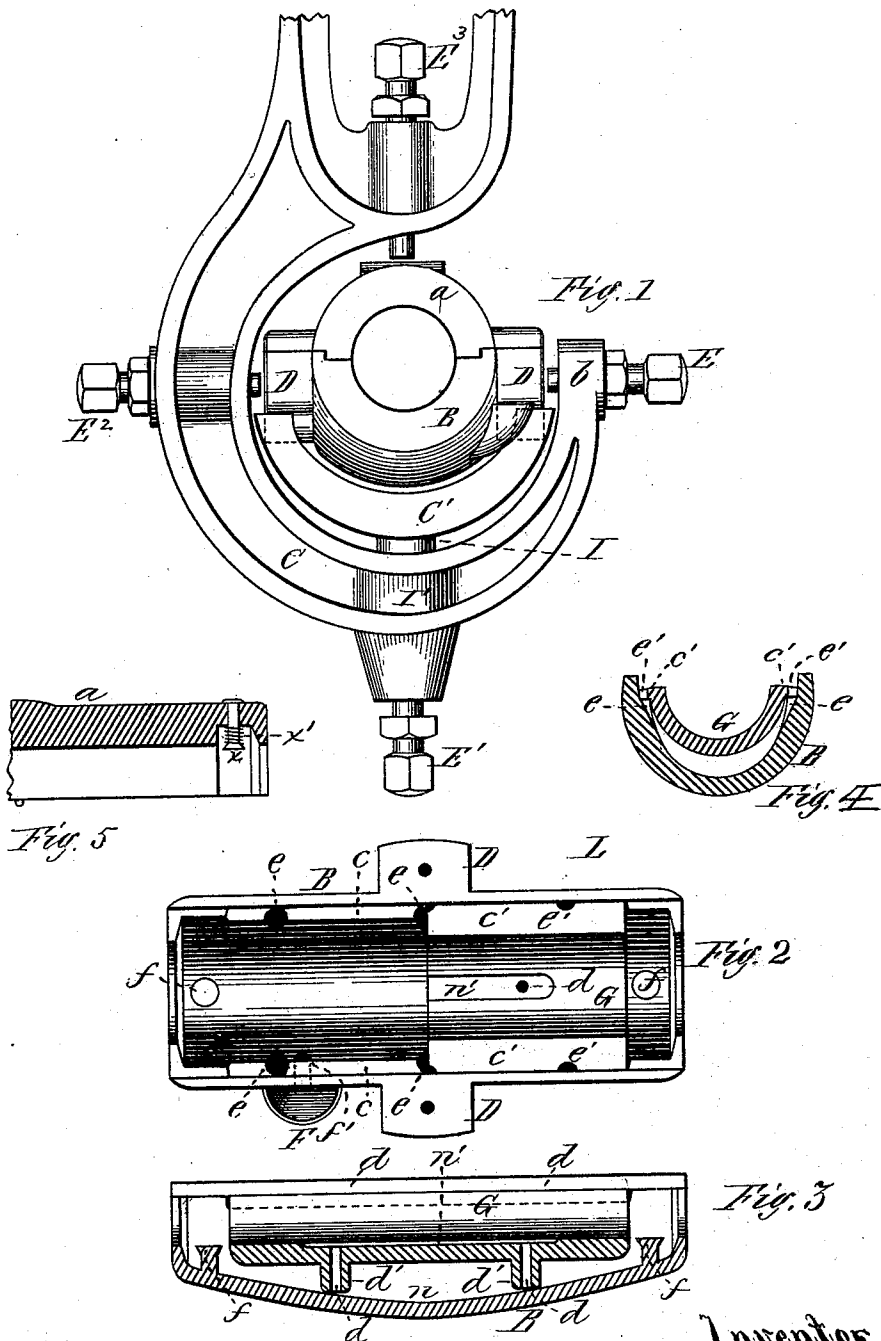


M. H. BOYDEN.
BEARINGS FOR SHAFTING.

No. 177,053.

Patented May 2, 1876.



Witnesses,
C. E. Buckland
W. B. Hall.

Inventor,
Moses H. Boyden,
By T. A. Curtis
his atty.

UNITED STATES PATENT OFFICE.

MOSES H. BOYDEN, OF CHICOPEE FALLS, MASSACHUSETTS.

IMPROVEMENT IN BEARINGS FOR SHAFTING.

Specification forming part of Letters Patent No. **177,053**, dated May 2, 1876; application filed May 19, 1875.

To all whom it may concern :

Be it known that I, MOSES H. BOYDEN, of Chicopee Falls, in the State of Massachusetts, have invented a new and useful Improvement in Shafting-Bearings; and that the following is a full, clear, and exact description thereof.

My invention relates to the journals or bearings for the ordinary shafting used in machine-shops to drive the machinery, its object being to provide a bearing which shall readily adjust itself, or which may be readily adjusted to the line of the shafting, or to any variations in it, and to distribute the lubricating-oil from the oil-reservoir upon the shafting at its bearing, and to conduct the oil, after being once used, back to the oil-reservoir, so that it may be used over again, and that continuously, so long as the oil lasts. To this end my invention consists of a box or bearing resting on flanges in an oil-reservoir, and provided with a shallow oil-receptacle along its bottom, and with ducts, through which the oil is drawn from the reservoir up into said receptacle by the friction of the shaft turning in its bearing, and provided also with beveled flanges and recesses, their edges to conduct the oil back to the reservoir after having been used, where, being freed from its sediment, it is ready to be used again.

The oil-reservoir is provided with trunnions, which rest in a swinging yoke, so that the box may be readily adjusted to the variations in the line of shafting by set-screws turned in or out through the hanger against the trunnions or against the stem of the swinging yoke, or against the top of the box itself.

In order that the invention may be fully understood, I will proceed to describe it, having reference to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is an end view of the box suspended in its hanger. Fig. 2 is a half-plan view of the box and half plan of the oil-reservoir. Fig. 3 is a longitudinal section at line O. Fig. 4 is a transverse vertical section at line L, and Fig. 5 is a half longitudinal section of the box-cover at the center line.

C represents a hanger, in the lower part of which is made a vertical hole to receive the stem I of a yoke, O', so that said yoke may turn freely therein, its lower end resting upon

the upper end of the set-screw E', turned up against the stem from beneath. The upper ends of the yoke are recessed to receive the trunnions D, made upon the oil-reservoir B, so that, the trunnions having a firm bearing in said recesses, the oil-reservoir is free to tilt therein. This oil-reservoir is made with a depression, *n*, about midway its length, with an interior shoulder, *c*, extending along its length on each side, and with recesses *e* at suitable distances apart, the use of which will be explained hereafter. Within this oil-reservoir B is the box or journal G, provided with a flange, *c'*, on each side, which flanges have a firm bearing upon the interior shoulders *c*, to support the box in place; and these flanges are recessed at *e'*, at suitable distances apart, and are slightly beveled on top, as shown clearly in Fig. 4. The box G is also provided with protuberances *d'*, which extend down to the bottom of the oil-reservoir at points a little distant each way from the deepest part of the reservoir, through which are made holes or ducts *d*, as shown clearly in Fig. 3; and the reservoir is provided near each end, and outside each end of the box, with cut-offs *f*, the inner ends of which extend into the plane of the interior of the box, as shown in Fig. 5.

Two set-screws, E and E², are turned in through the hanger against the ends of the trunnions D of the oil-reservoir, and one, E³, is turned down through the hanger against the top of the cover *a* of the reservoir. The cover *a* of the reservoir is provided with cut-offs *x*, having a spring, *x'*, between the lower enlarged end and the interior surface of the box-cover, to keep the lower end of the cut-offs always in contact with the shaft.

The operation of my invention is as follows: The oil-reservoir, with the box or journal G arranged therein, is placed with its trunnions in the recesses in the yoke O', and the shafting being placed therein, the cover *a* is put in place, and the whole properly adjusted to the line of shafting by turning the set-screws E, E¹, E², and E³ either in or out, so that the inner end of the screws may impinge against the trunnions and cover, the inner end of the screw E¹ impinging against the lower end of the stem I of the yoke.

After the bearing is properly adjusted, oil is poured into the reservoir through the hole *z*, filling the reservoir until the oil appears in the filling-pan *F*, made on the outside of the reservoir.

As the shafting is put in motion the friction of the shaft in the journal *G* draws the oil up from the reservoir through the duct-tubes *d'*, and thoroughly lubricates the shaft at its whole bearing, keeping a small quantity of oil constantly in the shallow recess or receptacle *z'* in the bottom of the box *G*, in close contact with the shaft along the entire length of the box. The outer ends of the cut-offs *f* rub against the shaft as it revolves, and prevent the oil from collecting upon the shaft beyond them, and the oil is forced back into the reservoir. The oil also collects upon the flanges *e'*, (which are beveled back to the edges of the reservoir,) and the oil runs down through the recesses *e'* and *e* into the reservoir again. All the sediment which may have collected in the oil by use settles into the deepest part *n* of the reservoir, and when the oil is again drawn up through the duct-tubes *d'* upon the shaft it is clean and comparatively pure.

It will thus be seen that the oil in the reservoir may be used over and over again without

material diminution, and the shaft be lubricated a long time, and the journal be so adjusted that the shaft will have an equal bearing throughout the box, and receive lubrication at all its bearing-points.

To prevent dust and dirt from entering the bearing, I deem it best to make an annular flange, *g*, of nearly the same internal diameter as the bearing-surface of the box *G*, by which the shaft is nearly inclosed.

As fast as the shaft becomes worn away the inner ends of the cut-offs *x* are forced in against the shaft by the spring *x*, which causes said cut-offs to follow up the wear of the shaft and keep them in constant contact with it.

Having thus described my invention, what I claim as new is—

The combination of the swinging yoke *O'*, the oil-reservoir *B*, provided with the trunnions *D*, shoulders *e*, and recesses *e*, the cover *a*, the journal-box *G*, the duct-tubes *d'*, flanges *e'*, recesses *e'*, and the oil-vessel *n'*, all constructed and arranged substantially as described.

MOSES H. BOYDEN.

Witnesses:

P. W. SMITH,
A. R. MARTIN.