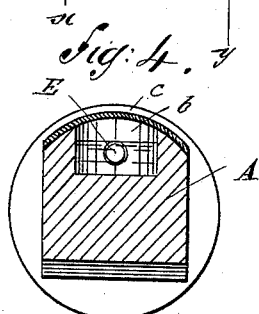
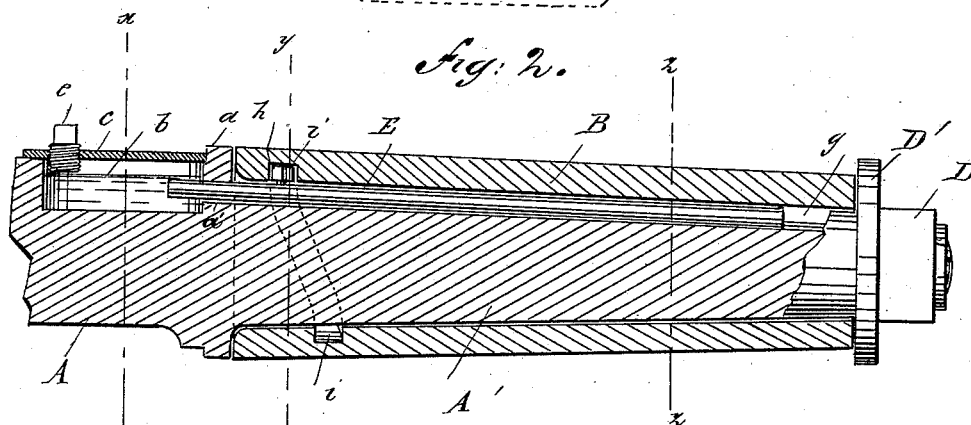
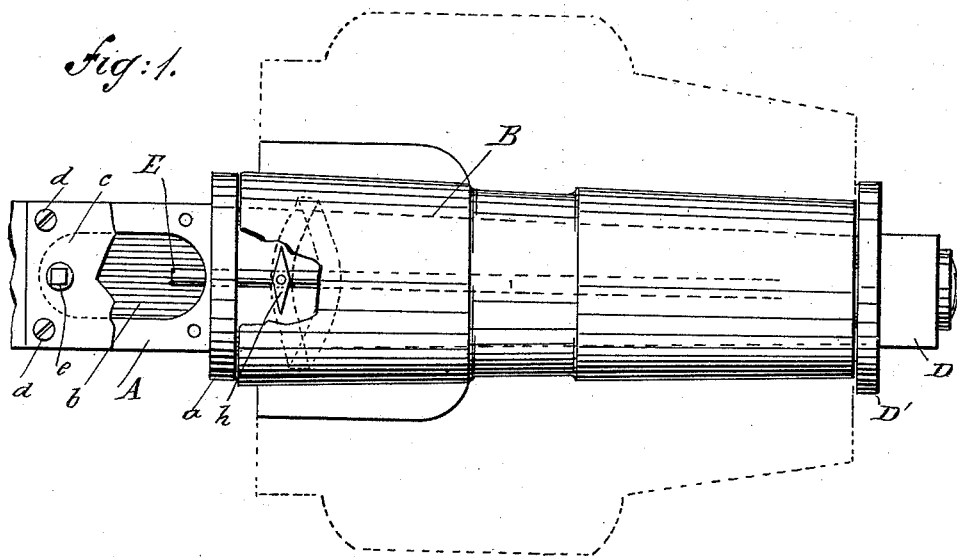


(No Model.)

J. S. PATTEN.  
SELF OILING AXLE BEARING.

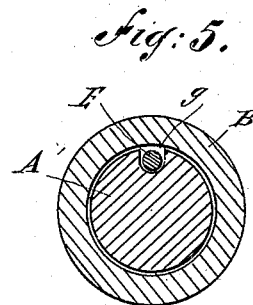
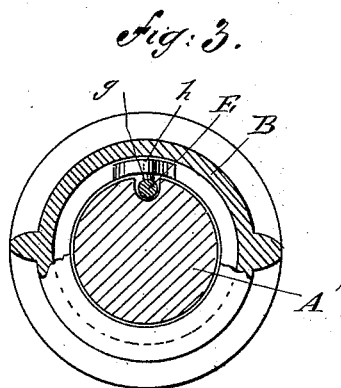
No. 422,150.

Patented Feb. 25, 1890.



WITNESSES:

*Chas. Nida*  
*& Sedgwick*



INVENTOR:  
*J. S. Patten*  
BY *Munn & Co.*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND  
EDWIN HIGGINS, OF SAME PLACE.

## SELF-OILING AXLE-BEARING.

SPECIFICATION forming part of Letters Patent No. 422,150, dated February 25, 1890.

Application filed December 27, 1889. Serial No. 335,124. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES S. PATTEN, of Baltimore, in the State of Maryland, have invented a new and Improved Self-Oiling Axle-Bearing, of which the following is a full, clear, and exact description.

My invention relates to improvements in self-oiling axle-bearings; and the object of my invention is to provide an axle-bearing that will be economical in use, simple in construction, and that will be self-oiling when connected with a reservoir of oil.

My invention is especially adapted for use upon all kinds of vehicles, such as carriages, stages, railway-cars, &c.; but it may be used upon nearly all kinds of machinery, and for light or heavy bearings.

To this end my invention consists of an axle having a sliding rod working in a groove in the face of the axle and projecting through the shoulder at the end of the bearing-surface of the axle to an oil-chamber, said rod being connected by a button with a cam-groove in the face of the axle-box, so that when the axle-box is revolved the button will move in the cam-groove and slide the rod in the groove of the axle, thus pumping the oil from the oil-chamber and diffusing it over the face of the axle-bearing.

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 the figures.

Figure 1 is a plan view of the invention with portions broken away to show the oil-chamber and the sliding rod and button in the axle-box. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a transverse section on the line *yy* of Fig. 2; Fig. 4, a transverse section on the line *xx* of Fig. 2, looking toward the axle-box; and Fig. 5, a transverse view on the line *zz* of Fig. 2.

The axle *A* is provided with the usual shoulder *a*, which separates it from the bearing-surface of the spindle *A'*, and the upper side of the axle near the shoulder *a* is provided with a recessed chamber *b*, which is large enough to hold a considerable quantity of oil, and is provided with a suitable cover *c*, which is attached to the axle *A* by the screws *d*. The cover *c* is provided with a

removable plug *e*, which screws into the top of the cover and which closes the hole through which oil is inserted into the chamber *b*. The bearing-surface *A'* of the axle rests in the axle-box *B*, which is held thereon in the usual manner by a nut *D*, having an annular flange *D'*, which bears against the end of the axle-box. In the top of the bearing-surface *A'* of the axle is a groove *g*, which extends the entire length of said bearing-surface and connects by a hole *a'* through the shoulder *a* with the oil-chamber *b*. A cylindrical rod *E*, which is of about the same length as the axle-box *B*, slides in the groove *g*, and has pivoted to its top, near the inner end of the axle-box, a diamond-shaped button *h*, which enters a cam-groove *i* in the axle-box *B*. The cam-groove *i* is cut in the face of the axle-box and curves spirally outwardly and inwardly thereon, as indicated by the dotted lines in Figs. 1 and 2, so that as the axle-box revolves the button *h* will follow the curves of the groove *i* and impart a reciprocating motion to the rod *E*, to which the button is attached, causing said rod to slide back and forth in the groove *g* of the bearing-surface *A'* of the axle. When the button *h* is in that part of the groove *i* nearest the inner end of the axle-box *B*, the inner end of the rod *E* will be forced inward into the oil-chamber *b*, and when the button is in that part of the groove *i* nearest the outer end of the axle-box the rod *E* will be withdrawn from the oil-chamber into the axle-box, and as it is withdrawn it will bring a small quantity of oil with it, which will be diffused by the rotary motion of the axle-box over the bearing-surface *A'* of the axle, so that by occasionally filling the oil-chamber with oil the nut *D* will seldom need to be removed, as the action of the sliding rod *E* will keep the bearing parts well lubricated.

The axle-box *B* is attached to a vehicle-hub in the usual manner, and if any of the parts become worn they may be easily replaced by new ones.

I have described my invention as applied to the axle of a vehicle; but I do not confine myself to such use, as it may be applied to a great many kinds of machinery.

When my invention is applied to station-

ary machinery, the groove *g* and rod E are placed in the lining of the box-bearing and the cam-groove *i* in the revolving shaft, so that as the shaft revolves it will actuate the button *h* and rod E, which, as in an axle-bearing, will connect with a stationary oil-well, and the parts will be lubricated. It will be readily seen that in the latter case the principle of the invention is the same as if applied to an axle-bearing.

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

1. A self-oiling bearing consisting, essentially, of an axle having a bearing-surface at the end thereof, a shoulder at the inner end of said bearing-surface, a chamber in the top of the axle near said shoulder, a groove in the top of said bearing-surface connecting through said shoulder with said chamber, a rod adapted to slide in said groove having a button pivoted thereto, and an axle-box having a cam-groove in its bearing-face adapted to engage said button and impart a reciprocating motion to said slide-rod, substantially as described.

2. The combination, with an axle having a longitudinal groove in its bearing-surface, said groove containing a slide-rod connecting

with an oil-chamber and having a button attached to its top, of an axle-box adapted to rotate upon the bearing-surface of the axle and having a cam-groove in its bearing-face adapted to engage the button on said slide-rod and impart a reciprocating motion to the rod, substantially as described.

3. The combination, with a spindle having a longitudinal groove connecting with an oil-chamber, and a box for said spindle provided with a cam-groove, of a rod adapted to slide in said longitudinal groove and enter the oil-chamber, and provided with a button engaging the said cam-groove, substantially as shown and described.

4. The combination, with the axle A, having oil-chamber *e*, and bearing-surface A', with groove *g* in the top thereof, of the rod E, button *h*, groove *i*, and axle-box B, substantially as described.

5. The combination, with the bearing-face A', having groove *g*, of the rod E, button *h*, groove *i*, and axle-box B, substantially as described.

JAMES S. PATTEN.

Witnesses:

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