R. C. BROWN.

Car-Axle Box.

No. 209,546. **Patented Nov. 5, 1878.**

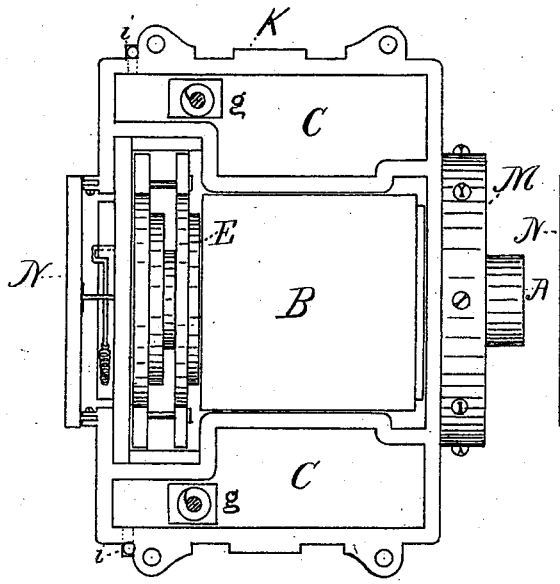

Fig. 1.

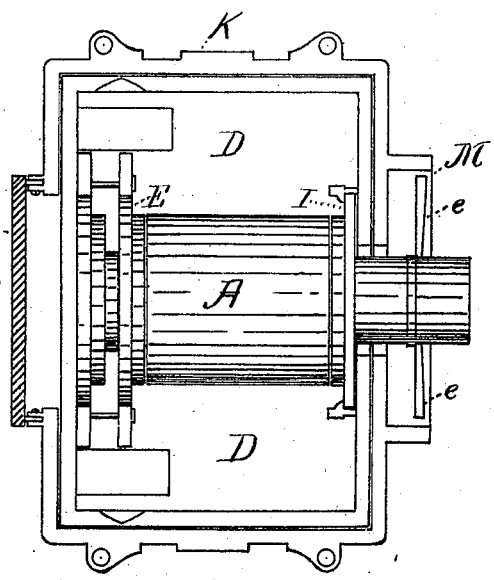

Fig. 2.

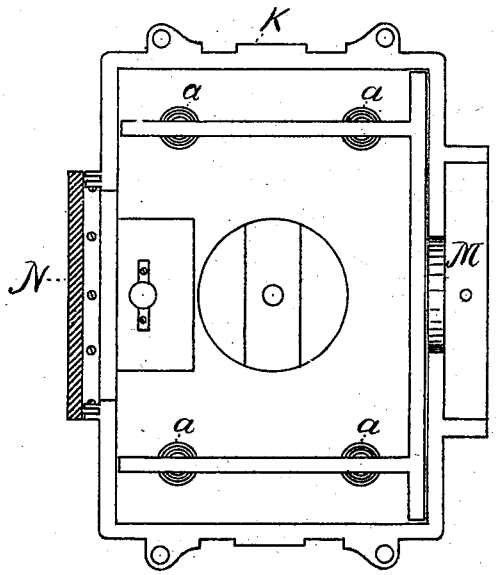

Fig. 3.

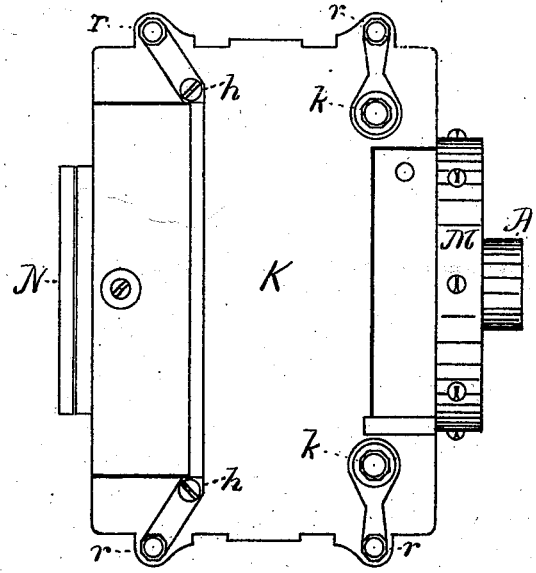

Fig. 4.

Witnesses.

Thomas Nelson Strong

Frederick Robinson Strong

Inventor

Robert Charles Brown

R. C. BROWN
Car-Axle Box.

No. 209,546. Patented Nov. 5, 1878.

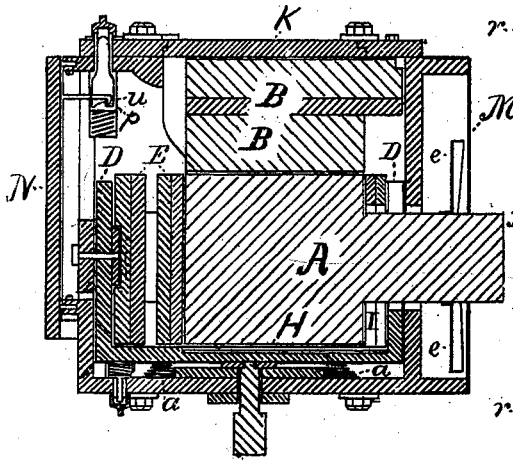

Fig. 5.

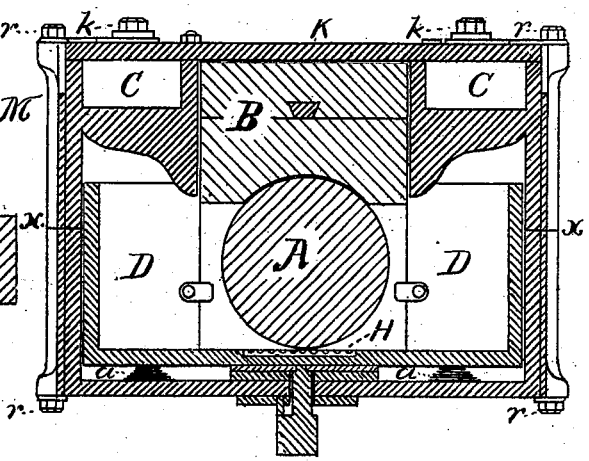

Fig. 6.

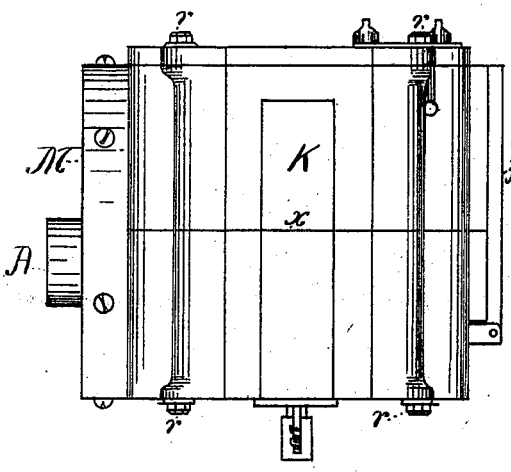

Fig. 7.

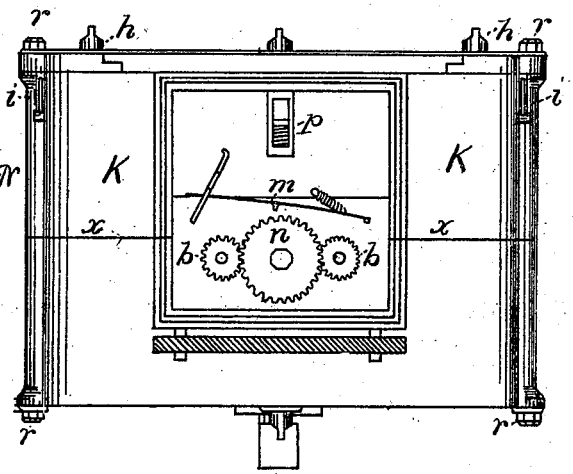

Fig. 8.

Witnesses.

Thomas Nelson Strong

Frederick Robinson Strong

Inventor.

Robert Charles Brown

UNITED STATES PATENT OFFICE.

ROBERT C. BROWN, OF PORTLAND, OREGON.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **209,546**, dated November 5, 1878; application filed September 16, 1878.

To all whom it may concern:

Be it known that I, ROBERT CHARLES BROWN, of the city of Portland, Multnomah county, State of Oregon, have invented an Improved Axle-Box and Bearings for the Axles of Railroad or other Cars, of which the following is a specification:

The object of my invention is to dispense with the packing now employed, and to provide an improved axle-box and bearings for the axle of railroad or other cars. This I accomplish by the combination, in an axle-box, of an interior box, D D, supported upon springs *a a a a*, and containing the upper bearings, B B, and lower bearings, H, and the thrust-blocks E E and I, with the oil-receptacles C C, the dust-chamber M, the fans *e e*, the setting-screws *b b*, and the openings, valves, gages, and other devices, hereinafter more particularly described.

The machine is illustrated in detail in the drawings.

Figure 1 is a plan view of the axle-box, the top only being removed. Fig. 2 is a plan view of the same, the upper half of the axle-box and the upper bearings, B B, being removed, but with the interior box, D, and axle A in position. Fig. 3 is a plan view of the same with the interior box, D, removed. Fig. 4 is a plan view of the top of the axle-box. Fig. 5 is a side section, Fig. 6 an end section, and Fig. 7 a side view, of the entire mechanism of the box when in running order. Fig. 8 is a view of the outside end of the axle-box, the door N only being removed.

The axle-box is of substantially the shape and form given in the drawings, and is made of any suitable metal, in two principal parts—the upper and lower. These principal parts are held together by the bolts *rrrr*, or other suitable device, and the division-line between them is represented in Figs. 6, 7, and 8 by the line *xx*. As a part of or in the upper part of the axle-box are made the oil-receptacles C C, of any desired shape or capacity, but so constructed that the upper bearing, B B, the door N being opened, may be withdrawn or replaced without removing the top of the axle-box. The lower part of the axle-box is provided with suitable openings to allow of the escape of refuse oil.

The interior box, D, is so constructed as to fit closely into the lower portion of the axle-box, and moves freely up and down within it, but in no other direction. The interior box, D, rests upon springs *a a a a*, attached to or projecting from the bottom of the axle-box. By these springs the entire interior box, D, is constantly pressed upward.

In the bottom of the interior box, D, is inserted the lower bearings, H, of any suitable metal. The bearing H, being about on a level with the bottom of the interior box, D, is constantly kept in contact with the axle A by the upward pressure of the springs *a a a a*.

The upper bearings, B B, support the weight of the car, and are held in position by the sides of the oil-receptacles C C and the sides, top, and door of the axle-box, as represented in the drawings.

The thrust endwise of the axle is received by the outside thrust-blocks, E E.

k k, in Figs. 4 and 6, show the opening in the top of the axle-box by which oil or other lubricating fluid is passed into the oil-receptacles C C. When not in use these openings are closed by a nut or other equivalent device.

g g show the openings for the passage of the oil or other lubricating fluid from the oil-receptacles C C to the inside of the interior box, D. *g g* are kept closed by valves, and are opened and shut at pleasure by means of the rods *h h*. (Represented in Figs. 4 and 8.) *h h* project through the top or sides of the axle-box, and are covered and protected by a nut or other equivalent device. When the valves are opened the oil or other lubricating fluid passes into and distributes itself over the lower bearing, H, and the bottom of the interior box, D, and is caught up and carried by the revolving axle to all the bearings requiring lubrication. *i i*, in Figs. 1 and 8, are glass tubes or gages suitably protected and placed in any desired position on the outside of the axle-box. They are connected directly with the oil-receptacles C C, and serve to indicate the amount of oil or other lubricating fluid in the receptacles C C.

M is a dust-chamber, that may be made of any desired shape to correspond with the box. It is attached to the outside of the axle-box, as represented, around the point of entrance of the axle-shaft A. Attached to the axle, inside

of dust-chamber M, are the fans or wings *e e*, of the proper size and shape. As these revolve with the axle A they cause a current of air outwardly and prevent the incoming of the dust.

N is the lid or door by which access is had to the interior of the axle-box and bearings when in use. It is evident that it may be placed in almost any desired position on the outside end of the axle-box. In Figs. 5 and 8 it is represented as hinged at the bottom, and kept shut by a hook or clasp, *u*, fastening into the spring *p*.

The heads of the setting-screws *b b*, by which the end-play of the axle is regulated, are shown in Fig. 8. The cog-wheel *n* is geared into the heads of the setting-screws *b b* in such a manner as to move them equally forward or back when turned, and they are kept locked in any desired position by the spring and catch *m*, or by any other equivalent device.

The opening into the axle-box and dust-chamber M at the point of entrance of the axle is made oval, or otherwise so constructed as to allow for the wear of the upper bearings, B B.

The axle A is represented in the drawings as having a metal collar keyed upon it to increase the surface of the journal-bearings; but this is no part of my claim, as it is evident that the mechanism here described will apply to the ordinary axle.

What I claim as my invention is—

1. The combination, with an axle-box for railroad or other cars, substantially as described, of the dust-chamber M and fans or wings *e e*.

2. The combination, substantially as described, in an axle-box for railroad or other cars, of the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, and the gages *i i*.

3. The combination, substantially as described, in axle-boxes for railroad or other cars, of the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, and the gages *i i* with the interior box, D, the springs *a a a a*, the bearings B and H, the thrust-blocks E, and the setting-screws *b b*.

4. The combination, substantially as described, in axle-boxes for railroad or other cars, of the dust-chamber M, the fans or wings *e e*, the oil-receptacles C C, the openings *g g* and *k*, the rod *h*, the gages *i i*, the interior box, D, the springs *a a a a*, the bearings B and H, the thrust-blocks E, and the setting-screws *b b*.

ROBERT CHARLES BROWN.

Witnesses:
THOMAS NELSON STRONG,
FREDERICK R. STRONG.