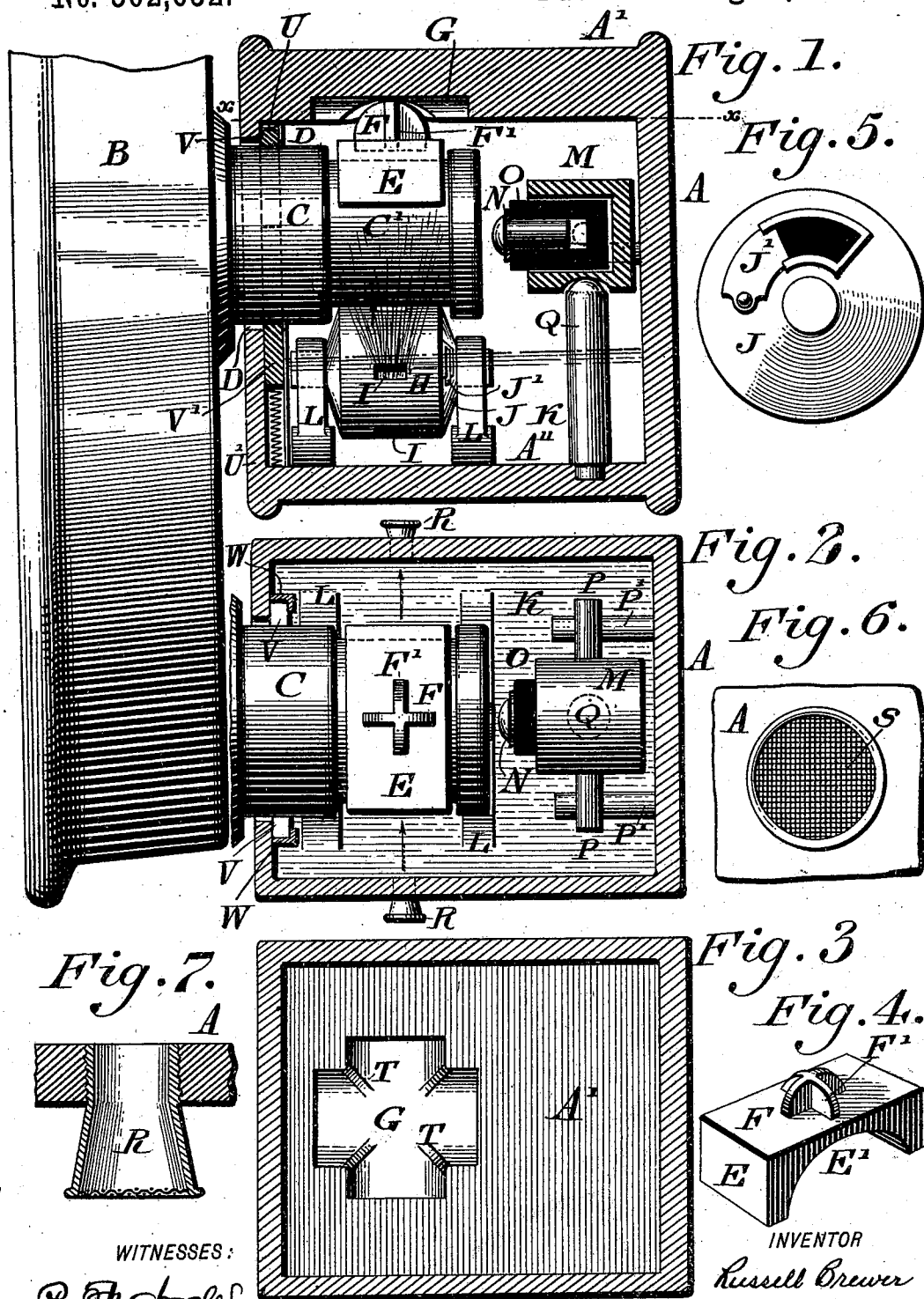


(No Model.)

R. BREWER.
CAR AXLE BOX.

No. 502,652.

Patented Aug. 1, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RUSSELL BREWER, OF CHICAGO, ILLINOIS.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 502,652, dated August 1, 1893.

Application filed June 28, 1892. Serial No. 438,316. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL BREWER, a citizen of the United States, late of Philadelphia, Pennsylvania, but now a resident of Chicago, Illinois, have invented certain Improvements in Car-Axle Boxes, of which the following is a description, reference being had to the annexed drawings, making part hereof.

The nature of my invention will fully appear from the following description and claims.

In the drawings:—Figure 1, is a broken elevation of a car wheel and journal and vertical longitudinal sectional view of the box; Fig. 2, a transverse horizontal sectional view of the box on the line X X of Fig. 1; Fig. 3, a similar view, showing the top removed by the plane of the cut, turned over; Fig. 4, a perspective view of the upper concave journal bearing-block, showing the doubly curved piece for permitting universal oscillating motion; Fig. 5, an end view of the revolving hollow lubricating cylinder showing an opening and slide to permit the introduction of a cooling agent; Fig. 6, a broken view of part of one of the sides of the box, showing a gauze covered air draft hole; Fig. 7, a broken sectional view of part of one of the sides of the box showing the funnel for the introduction of air.

A is the axle-box; B a car wheel; C one of the car wheel journals; C' the narrow neck of the latter; D an opening in the inside shell of the box, slightly larger than journal C and through which the latter projects; E a journal bearing block longitudinally concave, at E' beneath, to set upon and partially around the neck C'; F F' two transversely crossed semicircular ribs, which would form a cross in horizontal section; these ribs set in the correspondingly crossed concave depressions G in the under side of top A' of the box A. The radii of these two concavities are greater than those of the curved ribs F F'; whereby the ribs may rock freely in any direction in the concavities without sliding from place against the top A'.

H is a hollow revolving lubricating cylinder. This cylinder is provided with trun-

nions which set in long vertical slots in the standards L L, in which slots springs, setting up against sliding blocks, are placed; these blocks with their springs constitute spring bearings for the trunnions and are not shown because the device is old and well known in the arts. The surface of this cylinder is provided with V shaped depressions I I which enable the cylinder, as it revolves in response to the revolution of the journal neck C', to pick up the oil K, in which it is partially immersed, and throw it against the said neck C', thoroughly lubricating the latter; by which the oil is carried around to and lubricates the concave bearing block E.

J is the outer end of hollow cylinder H, and is pierced with an opening and provided with a slide J' to open and close the same. Through this opening the cylinder may be provided internally with a cooling agent, to preserve the parts from heating in long runs or in hot weather.

M is a hollow cylindrical box open at the end toward the axle journals and provided with a similarly shaped rubber cylinder spring O, which sets within it and projects beyond its open end. Into the open end of this rubber cylinder sets the bolt shaped bar N, a large washer around the neck of which prevents its head from being pushed into the opening in the rubber. It will be observed that the bolt is not so long as the hollow in the spring O; whereby, the outer end of the latter is given an opportunity to be compressed by pressure against the head of the bolt.

P P are trunnions resting on bars P' P'. There are duplicate bars (not shown) similar to bars P' P' which pass closely above the trunnions to prevent the bumper box M from jumping up out of place. These bars are set rigidly in the inside of the front face of the box A.

Q is a standard, rigidly set in the bottom of the box A, and it is provided above with a rounded head or terminus, which engages freely in a large concavity in the middle of the lower face of bumper box M. The bumper is thus allowed to rock upon standard Q and its trunnions P P, and also to oscillate in

either direction laterally upon the head of standard Q as a pivotal point; it is rendered capable of a general oscillating motion.

R R are funnels to gather and guide air through gauze covered openings S into the interior of the box A. The air entering one opening S will pass out of the other, whether the car is moving forward or backward. Thus a constant current of cool air is kept active in cooling the parts. It will thus be seen that, no matter what the inequalities of the road may be, the journal C will oscillate freely in any direction in the box A. The oscillating spring bumper will, by setting against the outer end of the journal C, prevent the latter from jumping its bearings, and will accommodate itself to the angle at which the end face of the journal comes into contact with it, whether in rounding curves, or traveling over inequalities in the rails, or road bed. V V' are two plates sliding in guides W, and forming collars around the journal C within the box A to closely envelop the latter, and close the opening in the inner end of the box through which the journal enters the latter, whereby dust and dirt are excluded. Plate V is held down by spring U and plate V' is sustained by spring U'. There is a space between each of the side edges of plates V V' and its guide so as to permit lateral motion of the journal C. These plates do not reach to the bottom or top of the box A, but are held against the journal by the springs U U', thus permitting vertical motion of the journal C.

T T are check points, or projections cast in the top A' setting into the cavity G, so as to set between the wings of the ribs F F' to check the latter from curving too far. The gauze cover opening S excludes dust and the collar

V V' not only excludes dust but restrains the oil from flying out when sudden jars occur to the car wheels.

What I claim as new is—

1. In a car-axle box the combination of an upper bearing block E for the axle journal, provided with crossed curved ribs F F'; top A' of the box provided with concavity G in its lower face and checks T T, in which concavity the ribs F F' set, all arranged and operating substantially as described.

2. A car axle box provided interiorly with a bumper M, spring O, and bar N, arranged and operating substantially as described.

3. A car axle box, provided with a bumper M, spring O, said bumpers setting by a cavity beneath, upon a round headed standard Q; whereby the bumper is permitted to oscillate, substantially as described.

4. A car axle box provided with a bumper M, spring O, said bumper setting by a cavity beneath upon a round headed standard Q, and provided with side projections or trunnions P P, supported on guides or bars P' P'; whereby said bumper may oscillate in various directions, substantially as described.

5. A car axle box, provided interiorly with a hollow, revolving, lubricating cylinder, setting against the axle journal, and provided with trunnions setting in supports, and with an orifice adapted to be opened and closed at will; whereby the interior of the cylinder may be provided with a cooling agent, substantially as and for the purposes described.

In witness that the above is my invention I have hereunto set my hand.

RUSSELL BREWER.

Witnesses:

GEORGE E. BUCKLEY,
ANDREW ZANE.