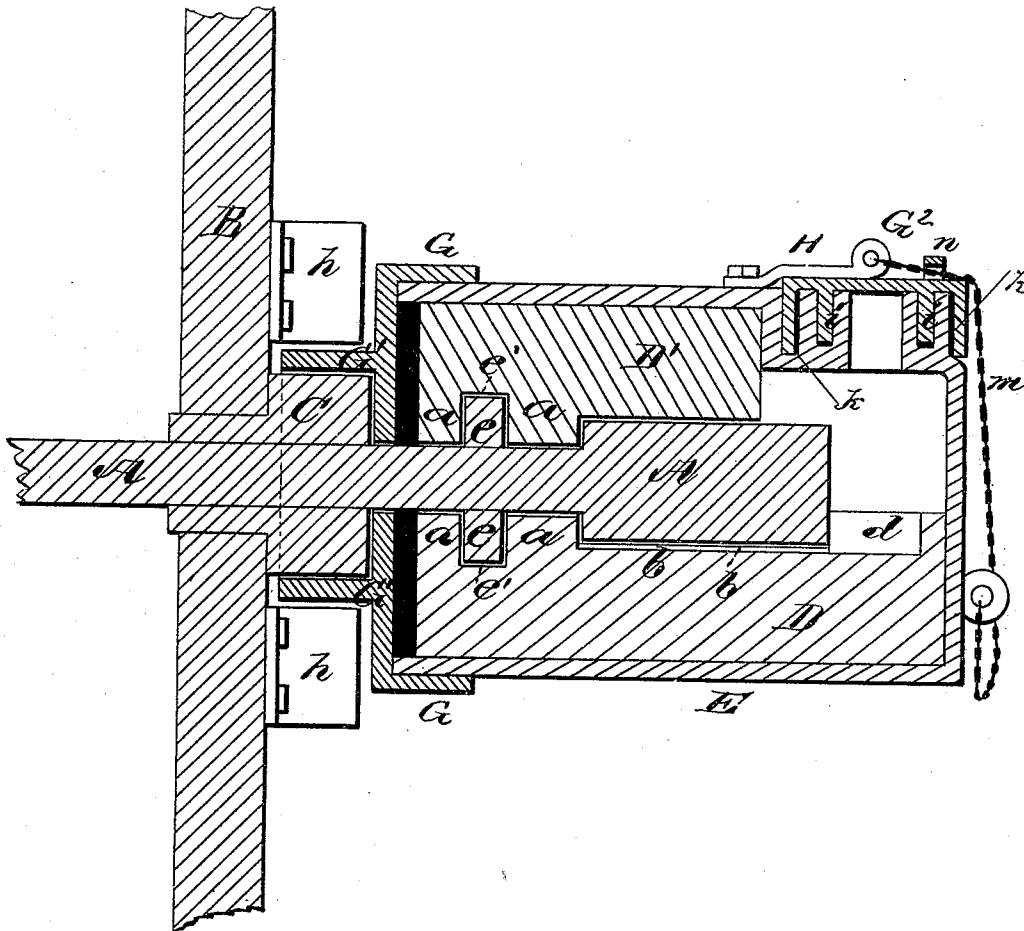


W. M. WATSON.
CAR-AXLE JOURNAL-BOX.

No. 175,534.

Patented March 28, 1876.



WITNESSES

E. H. Bates
Geo. E. Upshaw.

INVENTOR.

William M. Watson.
Gilmore, Smith & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM MEDD WATSON, OF TONICA, ILLINOIS.

IMPROVEMENT IN CAR-AXLE JOURNAL-BOXES.

Specification forming part of Letters Patent No. **175,534**, dated March 28, 1876; application filed March 4, 1876.

To all whom it may concern:

Be it known that I, WILLIAM M. WATSON, of Tonica, in the county of La Salle and State of Illinois, have invented a new and valuable Improvement in Car-Axle Journal-Boxes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawings is a representation of a longitudinal vertical section of my oil-box.

My invention relates to car-axle journal-boxes; and it consists in the construction and arrangement of parts whereby the box is rendered dust-tight, as will be hereinafter more fully set forth.

In the annexed drawing, A represents the axle, and B the wheel, of ordinary construction. C is a sleeve of steel, heated and shrunk onto the axle and hardened. The journal-box is made in two parts, D D', with interior shoulders *a* to correspond with the thickness of the sleeve, and in the bottom part D of the box is a groove, *b*, to allow the oil to flow the full length of the bearing. At the end of this part of this box is also a reservoir, *d*, for the oil. On the axle is further secured a collar or ring, *e*, to catch or exclude the dust, and a corresponding trough, *e'*, is formed in the box for the collar to turn in, the whole so arranged as to catch and hold the waste oil after passing from the axle; or the collar can be used without the trough.

In place of this collar a small fan may be substituted for the purpose of blowing a current of air out of the box to prevent the dust from entering.

The box D D' is inclosed in a frame or support, E, on the end of which is a hoop or band, G, passing over the outside hub of the car-wheel, and making almost a close fit with the joints, all made tight with or without packing. The waste oil passing from the axle and out of the hoop or band next to the car-wheel, the oil keeps the stationary hoop G and the hub of the wheel lubricated, so that, if any dust enters at the end of the hoop, the oil will catch and hold it. *h h* represent fans attached to

or cast with the wheel B, to drive the dust away from entering the box. In the end of the frame or support E is an aperture for the admission of oil into the oil-reservoir *d*, said aperture being closed by a cover, G², provided with one or more flanges, as shown. The flange of the cover G² enters a recess or trough, *i*, which may have a small quantity of oil or other liquid substance in it, so that the bottom of the flange will enter, and thus form a dust-lute and prevent the dust from passing through; or, if desired, the lute may be made by placing a small quantity of cotton, sponge, wool, or other suitable substance in the bottom of the grooves in the lid and recess, or both, to catch the dust and prevent it from entering the box. I also use packing *k*, of rubber, leather, or other suitable substance, either on the flange of the lid or on the trough, to form an additional lute to prevent the dust passing, and, when found sufficient, the other lutes are dispensed with.

The cover G² is held in its place by means of a pivoted catch, H, which is connected with the frame E by a chain, *m*, passing through an eye, *n*, or short chain or spring on the cover, said chain being long enough to allow the cover to be lifted out of the grooves, and heavy enough to keep the fastening from turning by the jarring of the cars, and keep the cover from being jarred off when the cars are in motion.

The hoop, fan, cover, and trough may be attached to the present boxes and wheels on cars now in use.

When a small fan is used instead of the collar *e*, an air-pipe may be attached, terminating in a case outside of the box-frame, in which is placed sponge, cotton, or other strainer, to strain the air and free it from the dust.

As a substitute for the collar a small elevator may be used to elevate the oil from the bottom of the trough and empty it on the axle, to keep the axle lubricated and wet with oil all the time when in motion, and thus making a better dust-catcher.

In arranging these devices the wheel is first put on the axle; then the end of the box frame is put on and shoved up to the wheel; next, the collar, having been fitted, is heated and shrunk onto the axle in the proper place;

and, last, the steel sleeve is heated and shrunk on and hardened. The journal-box is now put on the axle and slipped into the frame, and the end screwed on tight.

The opening in frame E closed by the cover G² also serves to introduce wool, cotton, or other equally good absorbent, to keep the end and upper part of the axle oiled by capillary attraction, and also to examine the axle, when necessary, in case of heating or otherwise being out of order; and, as time is of great importance in running railroad-trains, the opening of the aperture without unnecessary delay is of very great importance, by allowing time to attend to the heated axle as soon as found, without having to run for a wrench or spend time in unscrewing the usual bolts.

If desired to use this invention to make the car-axle journal-boxes now in use dust-tight, the cover and trough can be attached, and the ring or collar on the axle and the trough for it to turn in can be attached. The ring is made of thin iron, and shrunk on the axle in its proper place. The trough is then put over it and riveted to the inside of the end of the frame, the hoop to pass over the hub being attached to the outside of the same end of frame, and the fans can be attached to the wheels in present use.

What I claim as new, and desire to secure by Letters Patent, is—

1. For car-axle journal-boxes, a dust-lute consisting of a cover, G², provided with one or more flanges adapted to enter a recess or recesses in the frame E, substantially as described.

2. The journal-box D D', provided with shoulders *a*, groove *b*, oil-reservoir *d*, and trough *e'*, for the purposes herein set forth.

3. The fans *h h*, attached to or formed on the side of the car-wheel B, for the purposes set forth.

4. The flanged cover G, constructed substantially as and for the purpose set forth.

5. The recess or trough *i*, constructed substantially as described.

6. The packing K to exclude the dust, substantially as described.

7. The catch H and chain *m*, in combination with the box or frame E and cover G, for the purpose herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM MEDD WATSON.

Witnesses:

ELIAS W. WOOD,
A. E. PRATT.