W. G. BEATTIE.

Car Axle-Boxes.

No. 134,026. Patented Dec. 17, 1872.

FIG. 1.

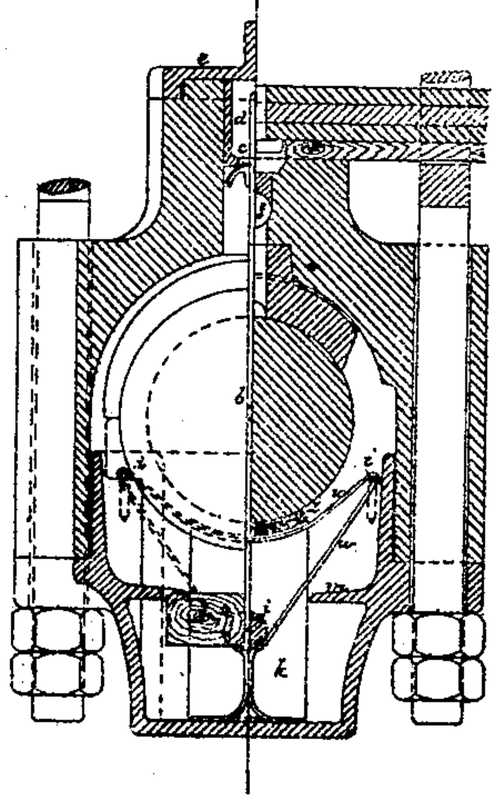


FIG. 2.

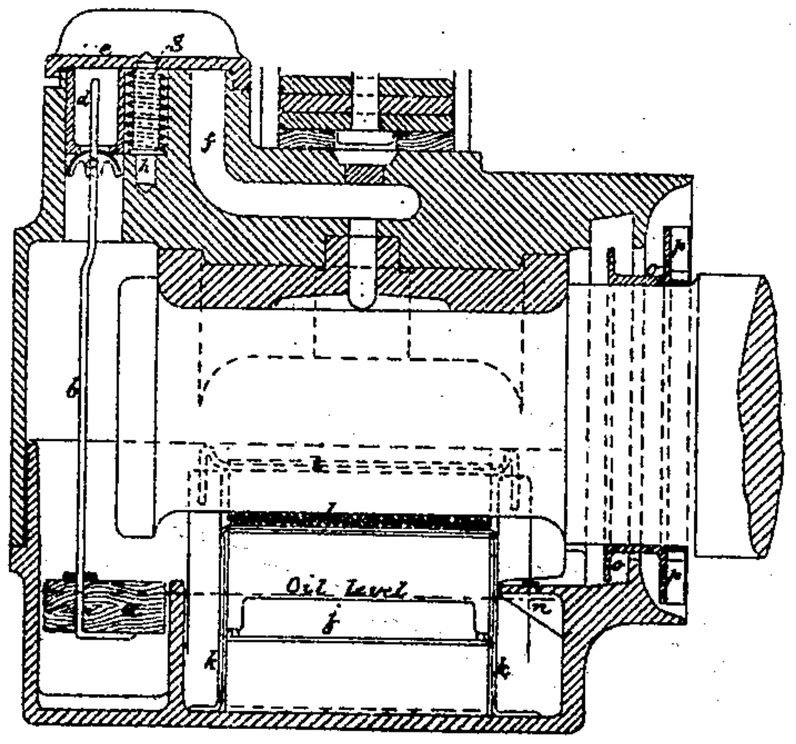


FIG. 3.

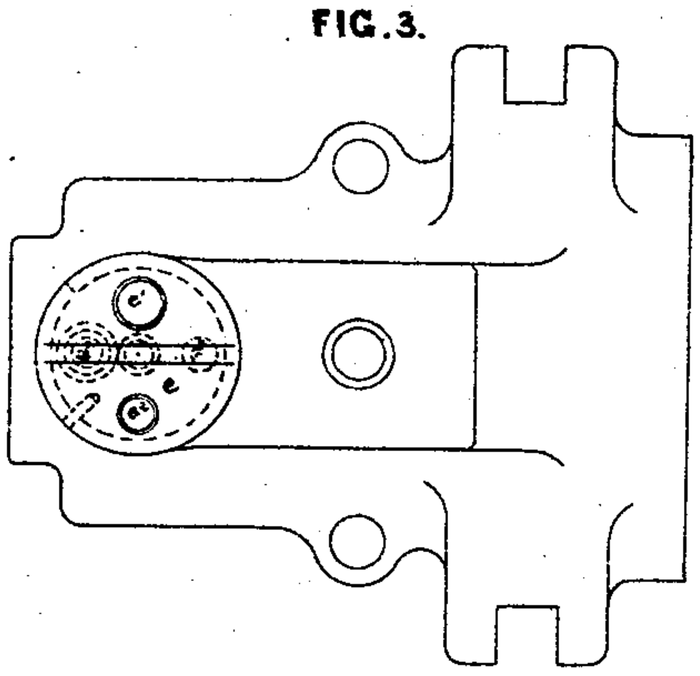


FIG. 4.

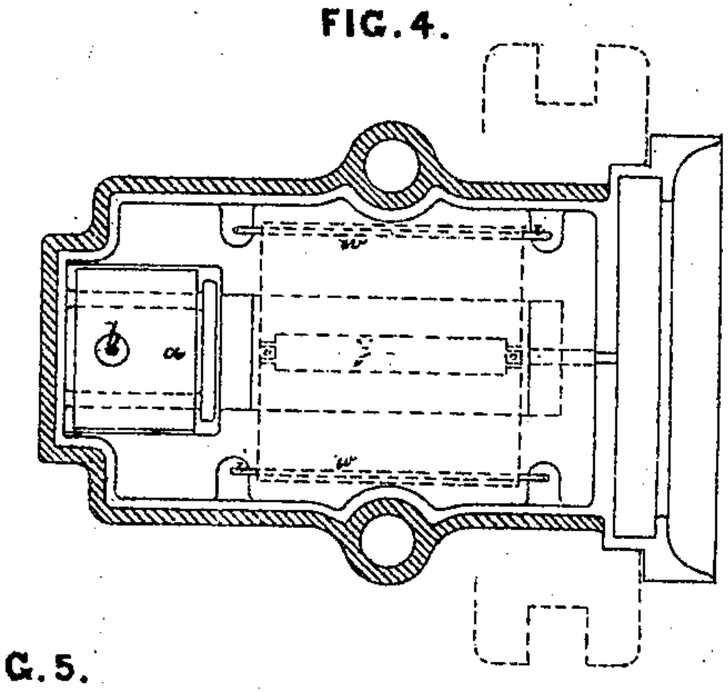
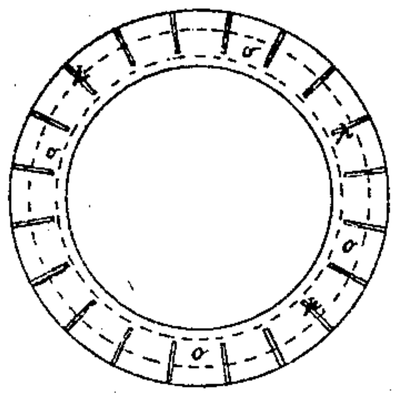


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM GEORGE BEATTIE, OF NINE ELMS, ENGLAND.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **134,026**, dated December 17, 1872.

To all whom it may concern:

Be it known that I, WILLIAM GEORGE BEATTIE, of Nine Elms, in the county of Surrey, England, have invented certain Improvements in Axle-Boxes, of which the following is a specification:

These improvements will be best understood by reference to the accompanying drawing, which illustrates one mode of carrying the invention into effect, Figure 1 being a vertical cross-section partly through the oil-supply chamber and partly through center of an axle-box constructed according to this invention; Fig. 2, a vertical longitudinal section of the same; Fig. 3, a plan; and Fig. 4, a plan of the lower part of the box.

The first part of my invention refers to apparatus for supplying axle-boxes with oil. I place a float, *a*, in the box, to which a rod, *b*, is connected, carrying at its other end a valve, *c*, which has its seat against the bottom of the oil-supply chamber *d*, the float and valve consequently rising and falling as the oil in the box is increased or diminished. I prefer to make the float of cork. The upper part of the box is fitted with a cap, *e*, having apertures e^1 e^2 in it (see Fig. 3) to correspond with the valve-opening in the oil supply chamber *d*, and with an aperture, *f*, leading to the upper part of the axle-bearing. A spring, *g*, is placed round the central spindle *h* of the cap *e*, one end of it being attached to the cap and the other to the box, whereby the cap is always maintained in such a position that the apertures to the interior of the axle-box are closed. If it is desired to inspect the interior to ascertain, for example, if the supply of oil in the box is sufficient or to pour in more oil the cap must be turned round until the apertures e^1 e^2 are brought opposite the apertures at *d* and *f*. On releasing the cap the spring brings it back to its normal closed position. To lubricate the axle the band *w* of cotton or wicking is employed, the same passing over rods *i i*, and having a weight, *j*, to keep the pad *l* in contact with the axle. The ends of the wicks hang in the oil.

The next part of my invention consists in forming projections *m m* round the interior of the bottom oil-chamber above the oil-level, and also in some cases partition or brackets *n*, so that the motion of the oil is restrained, and it is prevented from being thrown out of the box.

The next part of my invention refers to an arrangement for preventing the lubricant from escaping from axle-boxes as well as to an arrangement for preventing dirt or dust from entering. For these purposes I fit a double-flanged collar or shield, *o*, round the axle at a slight distance from the journal, and I form a groove or annular recess in the axle-box in which the flange nearest the journal is contained. The bottom of the groove is inclined downward, as shown, toward the interior of the box, so that any oil that may travel along the journal or may be thrown up against the flange is intercepted and thrown off on the inclined surface of the groove, and so returned. The outer collar flange or shield is partly contained in a recess formed in the back of the axle-box, and is formed with projecting ribs *p p*, as more clearly shown by Fig. 5, which is an end view of the collar, and as the axle revolves a current of air is created by the ribs *p* so as to throw off any dirt or dust which may be thrown against the back of the axle-box.

I claim as my invention—

1. The valve *c* and the float *a* in combination with the oil-supply chamber *d*, oil-box, and journal, substantially as set forth.

2. The cap *e*, with spring *g* and apertures e^1 and e^2, in combination with the apertures at *d* and *f*, substantially as and for the purposes specified.

3. The projections *m* and brackets *n*, severally or in combination, substantially as and for the purposes set forth.

4. The collar or shield *o* upon the axle having two flanges, one inside and the other outside the axle-box, as and for the purposes set forth.

5. The ribs *p* on the collar *o*, substantially as and for the purpose set forth.

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