

G. HOULTON.
Car-Axle Boxes.

No. 157,004.

Patented Nov. 17, 1874.

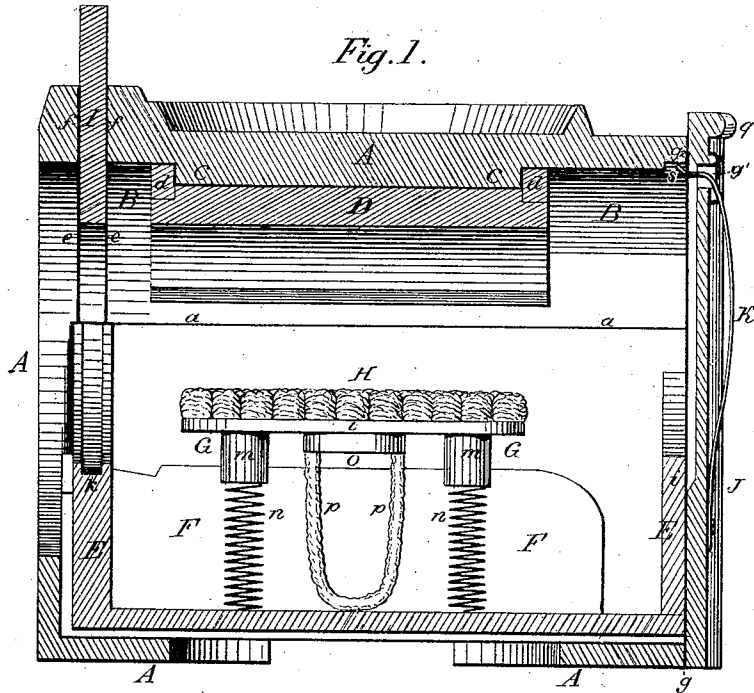


Fig. 2.

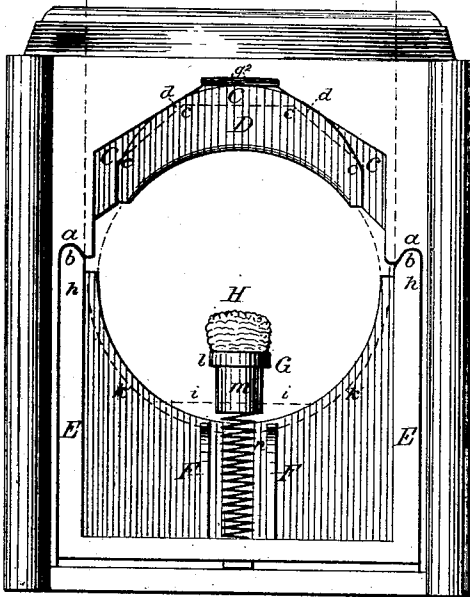
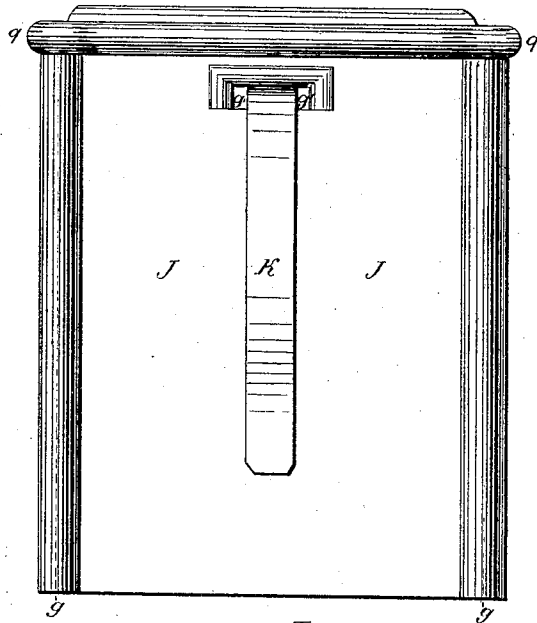


Fig. 3.



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Fig. 4.

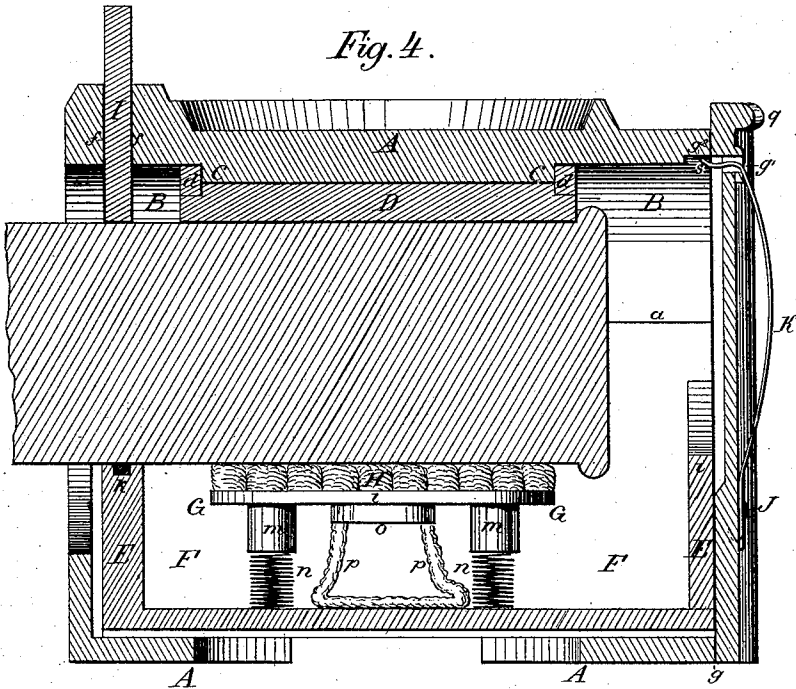


Fig. 5.

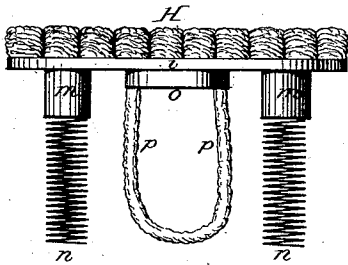
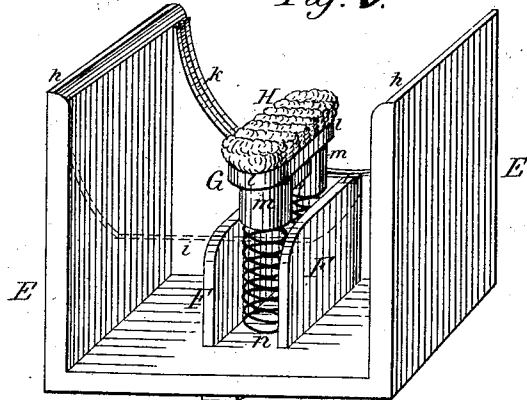


Fig. 6.



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UNITED STATES PATENT OFFICE.

GREENLEAF HOULTON, OF ST. ANDREWS, CANADA.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **157,004**, dated November 17, 1874; application filed November 3, 1874.

To all whom it may concern:

Be it known that I, GREENLEAF HOULTON, of St. Andrews, in the Province of New Brunswick and Dominion of Canada, have invented a new and useful Improvement in Car-Axle Boxes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is such an improvement in automatic-lubricating car-axle boxes as will make the same more simple in construction, more convenient and economical in use, and more effective in result; and my invention therein consists in a metal drawer of a peculiar construction; in combining with the same a peculiar lubricating device; also, in combining with the same the upper loose journal-bearing, so that the same is fitted in place without any slack, and without the use of a wedge; and, finally, in the means whereby the drawer is held in place, all as more fully hereinafter described.

In order to enable those skilled in the art to make and construct my axle-box, I proceed to describe the same in connection with the drawings and the letters of reference marked thereon, in which drawings—

Figure 1 is a vertical longitudinal section of my device; Fig. 2, an elevation of the inner end of same; Fig. 3, a front elevation of the outer end of same. Fig. 4 is a vertical longitudinal section; Fig. 5, a separate view of the oiling apparatus, and Fig. 6 a separate view of the drawer.

Similar letters denote corresponding parts in each figure.

The shell proper of the box, shown by the letter A, is a casting which has nothing peculiar in its external configuration, but on its interior is cut away in the walls on each side at points *a a*, near the top thereof, the cut-away portions extending to the bottom of the box, so that when the drawer (hereafter to be described) shall be in place, its side walls shall fill such cut-away portions. At the points *a a*, moreover, the shoulder is made with a groove, *b*, upward, which groove may be rectangular or circular, to correspond with the similar shape of the upper edges of the side

walls of said drawer. The upper part B of the interior of the box is semi-cylindrical in cross-section; and has cast with it a semi-hexagonal projection, C, which occupies the central portion of said upper part of the box, and is designed to receive and hold the "brass" or upper movable journal-bearing *o*. This journal-bearing, with a proper curvature on its under side to conform to the outline of the journal, has its upper side *c* semi-hexagonal, with three faces, to correspond, in all respects, with, and fit closely to, the semi-circular faces in the projection C. At the ends of this journal-bearing are lips *d*, which fit over the ends of the projection C, and hold such journal-bearing firmly in place longitudinally. At the inner end of the box A is a groove, *e*, extending down its side walls, and in a line with the same, and in extension thereof, a slot, *f*, up through the inner end of said box, adapted for a slide, (preferably of wood,) hereafter to be mentioned; and at the outer end of said box are grooves *g*, extending the entire depth of the box, for the reception of the front slide. At the extreme front of the box, and at the center of the upper of the inside, there is a portion, *g'*, cut straight across, for the passage of the front-slide spring, and immediately back of this a groove, *g''*, for the reception of the end of such spring. The drawer E is, preferably, a rectangular casting; but may be made of sheet metal, fitting closely into the box and extending its whole length, with the top of its side walls *h* fitting into the grooves *b*. Its front or outer end *i* is cut away, as shown in the drawings, and its inner end also cut away in circular form, has a packing-groove, *k*, for the reception of leather or other proper packing. From this inner end *j* two partitions, F, arranged in parallel lines, extend toward the forward end of such drawer, but do not reach quite up to it. These partitions do not extend vertically above the lower parts of the cut-away portions of the end of the drawer, and they serve as boxes and guides for the wick-holder or lubricator G. This lubricator is composed of a metallic frame having a top piece, *l*, which may be channeled to receive and hold the wick more securely, with cylindrical shells *m* to receive and hold the upper ends of spiral springs *n*, and, with a cen-

tral spring, *o*, to permit the passage of a portion, *p*, of the wick which extends to the bottom of the drawer.

The wick *H*, which may be any of the proper wicks now in use, but is preferably made of woolen fabric, and strips of coarse blankets or other coarse woolen cloths have been found best in use, is folded back and forth upon the frame or top piece *l*, so as to have an uniform width and height, and the loose ends or any other loose portion *p* extends down into the oil, which is taken up by capillary attraction into the body of the wick, and keeps the same constantly and continually saturated.

In putting the box on for the first time, all the loose parts being removed, the box is slipped on over the journal. It is then raised sufficiently to allow the brass or loose journal-bearing to be slipped into place, and the box, by its own weight, will hold the same in proper position. The wick being first saturated with oil, and a small quantity of oil being poured into the drawer, the wick being depressed by hand to allow of its passage under the end of the journal, the drawer is inserted into the box, it being understood that its inner groove has been previously packed with leather or other suitable material. Nothing now remains to be done, except closing the open ends of the box.

Upon the inner end of the box a slide, *I*, preferably of wood, and fitting closely into the slot *f* and groove *e*, is pushed down upon the journal, the lower end of such slide conforming to the outline of said journal and reaching down to the top of the packing-groove upon the inner end of the drawer, said slide and such packing-groove completely and closely encircling such journal, and preventing the escape of oil and the intrusion of dust or dirt.

The front or outer slide *J* is a casting of a proper form to fit into the grooves *g*, having a head, *q*, which limits its passage down said grooves, and a spring, *K*, to hold it from rising vertically in said grooves. This spring is a single leaf secured at its lower end *r* upon the outside of the slide; then bent outwardly, so as to form a handle by which to raise the slide; then bent inwardly and passing through a proper slot near the top of said slide, and its upper end *s* curved upwardly. When the slide is inserted in its grooves and pushed downwardly, the curved end *s* striking the top front of the box is pressed outwardly,

and thus passes down over the front of the box and over the part *g*¹, and then springs in under such part and engages in the groove *g*², which thus holds such slide down in place.

When the slide is raised, the outwardly-curved center of the spring being grasped as a handle, by the act of grasping withdraws the inner end of the spring from its holding-groove, and disengages the slide. At the same time the inner curved end of the spring, by reason of its upward curve, cannot be drawn through the slot in the slide.

The particular advantages claimed for my device are its simplicity of construction, in which no unnecessary or cumbrous attachments are found to the annoyance of the train-hands, and in which no screws or other fastenings are found, requiring tools for their manipulation; also, in the great economy of its use in the saving of oil, of which it uses the minimum, and wastes absolutely none; also, in its efficiency, the work of removing, replacing for repair, examination, and for oiling being very easy, and requiring no particular skill, and the lubrication being automatic, regular, and sufficient, and finally in avoiding the ordinary and expensive use of cotton waste, woolen rags, and wool, which are costly and wasteful of oil.

Having thus described my device and its manner of use, and some of its advantages, what I claim as new therein and my own invention is—

1. The metal drawer *E*, having longitudinal partitions *F* and upper side walls adapted to fit into and be secured within a cut-away portion of the inner walls of the axle-box, substantially as described and shown.

2. In combination with the drawer *E*, the wick-holder *G* and wick *H* *p*, substantially as described and shown.

3. In combination with the slide *J*, the leaf-spring *K*, placed upon the outside of said slide, and curved outward centrally to serve as a handle, substantially as described and shown.

4. In combination with the drawer *E*, the upper loose journal-bearing, having lips *d*, substantially as and for the purpose set forth.

This specification signed and witnessed this 3d day of November, 1874.

GREENLEAF HOULTON.

Witnesses:

JNO. W. DANENHOWER,
GEO. L. DYER.