(No Model.) 2 Sheets—Sheet 1.

H. HAVELL.

CAR AXLE BOX.

No. 493,026. Patented Mar. 7, 1893.

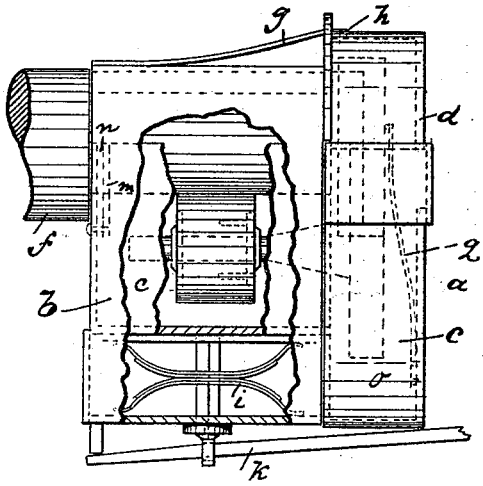

Fig. 1.

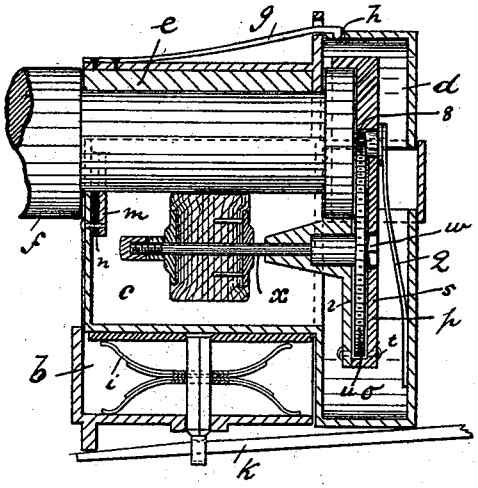

Fig. 2.

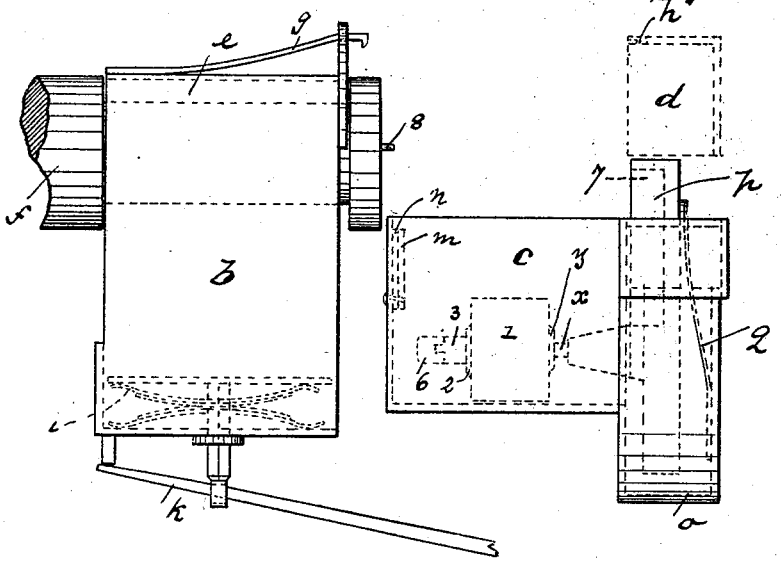

Fig. 3.

WITNESSES: INVENTOR:

Wm. D. Bell.

D. Robertson.

Henry Havell

BY Gartner & Co

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

H. HAVELL.

CAR AXLE BOX.

No. 493,026. Patented Mar. 7, 1893.

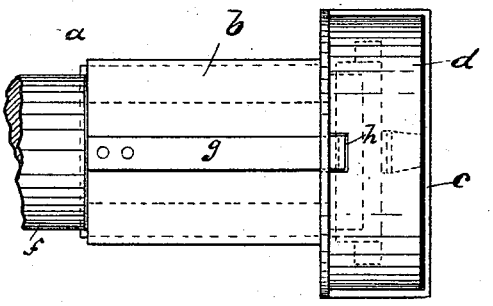

Fig. 4.

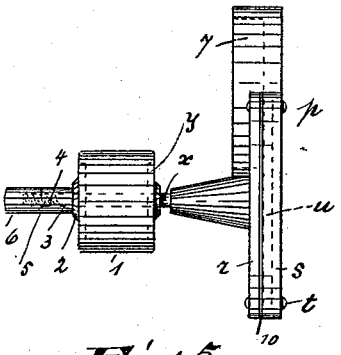

Fig. 5.

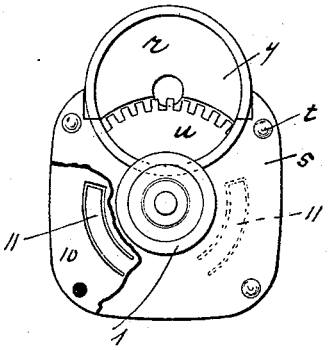

Fig. 6.

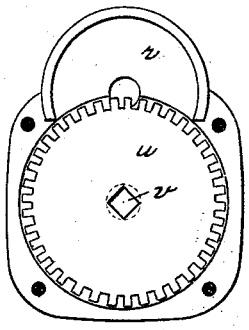

Fig. 7.

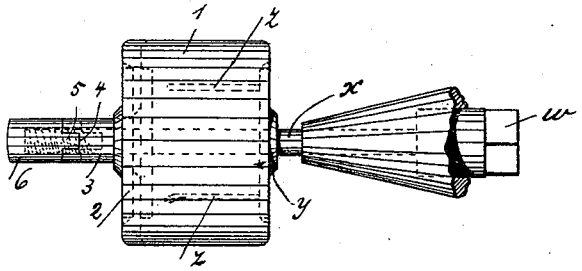

Fig. 8.

WITNESSES:

Wm. D. Bell.

D. Robertson

INVENTOR:

Henry Havell

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ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY HAVELL, OF NEWARK, NEW JERSEY, ASSIGNOR TO ALEXANDER DEVOE, OF SAME PLACE.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 493,026, dated March 7, 1893.

Application filed July 21, 1892. Serial No. 440,767. (No model.)

To all whom it may concern:

Be it known that I, HENRY HAVELL, a citizen of the United States, residing at Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Car-Axle Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a box for car-axles, simple and durable in construction, reliable and automatical in operation and of great efficiency.

The invention consists in the improved separable box for car-axles, its oil chamber and automatically operating lubricator wheel, its locking mechanism, and the combination and arrangements of the various parts thereof, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claims.

Referring to the accompanying drawings, in which like letters and numerals of reference indicate corresponding parts in each of the several figures: Figure 1. is a side elevation of my improved box, attached to an axle; only part of the latter being shown. Fig. 2. is a longitudinal central section of Fig. 1. Fig. 3. is a similar view to Fig. 1, the various portions of the box being separated. Fig. 4. is a top plan view of Fig. 1, more fully illustrating the locking mechanism; and Figs. 5 to 8 inclusive are detail views of the lubricator wheel and its operating mechanism.

In said drawings *a* represents the box, consisting of the chamber *b*, the oil chamber *c* and the top or cover *d*. The chamber *b* is provided at or near its top with the bearing *e* receiving the reduced portion of the axle *f*, and also with the hooked end locking spring *g*, the latter engaging an opening or recess *h* in the top or cover *d*. Within said chamber is arranged a series of flat or spiral springs *i*, adapted to hold (when in normal position) the oil chamber *c* in the chamber *b*. Said springs are controlled and operated by a lever *k*, or in any desired manner.

The oil chamber *c* is provided at one end with an additional metal plate *m*, and an intermediate cushion *n*, made of leather, rubber, or any suitable material. This portion of the oil chamber serves also as the underneath bearing for the axle. At the opposite side of said oil chamber is arranged an extension or projecting box *o*, adapted to receive the lubricator wheel operating mechanism *p*, which latter is held in position by a flat spring *q*, as clearly shown in Figs. 2, 3 and 4 of the drawings.

The lubricator wheel operating mechanism, consists of the disks *r* and *s*, which are securely fastened together by screws or rivets *t*, or in any desired manner. Between said disks, and operating in a circular recess, is arranged a toothed wheel *u*, provided at its center with a squared opening *v*, receiving the squared portion *w*, of shaft or spindle *x*, as shown in Figs. 7 and 8. Between said wheel and between the disks is arranged a thin metal plate 10, provided with stamped out portions 11, bearing against the said wheel, and adapted (by their spring power) to hold said wheel in position. To this spindle is secured a disk *y* provided with a series of pins *z*, to which is secured the lubricator wheel 1, made out of felt, wool or any suitable material. The opposite end of the lubricator wheel is provided with a disk 2, to which is secured a collar or sleeve 3, having oppositely arranged recesses 4, engaging corresponding projections 5 of cap or sleeve 6, the latter being secured to the end of the spindle *x* in any desired manner. These sleeves and their respective projections act as a clutch or locking mechanism for the lubricator wheel, which, being made of felt, wool &c., is to a certain extent elastic. The upper portions of the disks *r* and *s* form a circular recess 7, adapted to receive the end of the car axle, which again is provided with a pin 8, arranged eccentrically, and adapted to engage the teeth of the wheel *u*, as will be manifest.

The operation of my improved box is as follows—the box being in locked or normal position (Fig. 1 or 2). When the car axle is re-

volving, its pin 8 engages the teeth of the wheel *u*, thus causing the lubricator wheel to rotate slowly. (The speed can be controlled or regulated by or depends on the number of teeth, cut in the wheel.) As said lubricator wheel is permanently held in closed contact with the axle, the oil from the oil chamber *c* is transferred thereto continuously. If it is desired to refill the oil chamber—or to open the box for inspection or other reasons, the lever *k* is pressed downward, thus releasing the oil chamber *c* from the pressure, exerted by the springs *i;* the hooked end spring *g* disengages its respective opening *h*. The top or cap *d* can then be removed—and if necessary the oil-chamber *c*, along with the lubricator wheel and its operating mechanism, can also be taken out of the chamber *b*, as shown in Fig. 3.

The great advantage of the so constructed car axle box, rests in the facility, with which the various parts can be handled and operated,—in the continual and thorough lubricating of the bearing of the axle, according to its speed—and furthermore in the great saving of oil, due to the almost impossible leakage from the specially constructed box.

I do not intend to limit myself to the construction shown and described, as various changes can be made, without changing the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A car axle box consisting of a chamber, provided at or near its top with the bearing for the axle, a removable oil chamber, arranged in said chamber, springs holding said oil chamber in normal position, means for controlling and operating said springs, a top arranged on said oil chamber and provided with a recess, and a hooked end spring secured to the axle chamber and adapted to engage the said recess of the top, all said parts substantially as described and for the purposes set forth.

2. A car axle box consisting of a chamber, provided at or near its top with the bearing for the axle, a removable oil chamber, arranged in said chamber and provided with an extension or projecting chamber, springs controlling said oil chamber, a top or cover arranged on said oil chamber, means for securely fastening said top to the oil—and axle chamber, a lubricating wheel arranged in the oil chamber and means for transmitting the motion from the axle to said lubricating wheel, all said parts substantially as described and for the purposes set forth.

3. In a car axle box, the combination with the box and axle, of a pin secured eccentrically to the end of said axle, an oil chamber removably arranged in said box, a lubricating wheel arranged in said oil chamber and provided with a toothed wheel, said toothed wheel being adapted to engage said pin and means for holding all said parts together, substantially as described and set forth.

4. In a car axle box, the combination with the axle and box, of a lubricating wheel arranged in said box, a spindle carrying said wheel, a toothed wheel arranged on said spindle, and a pin secured eccentrically to the end of the axle, and adapted to engage the teeth of said wheel, thus transmitting the motion of the axle to the lubricating wheel, all said parts substantially as described.

5. In a car axle box, the combination with the axle and box, of a spindle arranged in said box, a disk secured to said spindle and provided with a series of pins, a lubricating wheel secured to said pins and provided at the opposite end with a disk, a sleeve secured to or made integral with said disk and adapted to slide on said spindle, said sleeve being provided with a series of grooves or recesses, a cap secured to the extending end of the spindle and provided with corresponding projections, adapted to engage the recesses of the sleeve, and means for transmitting the motion from the axle to the said spindle and lubricating wheel, all said parts being arranged and adapted to operate substantially as described and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of July, 1892.

HENRY HAVELL.

Witnesses:
ALFRED GARTNER,
CHARLES KIENER.