(No Model.) 2 Sheets—Sheet 1.

S. VESSOT.

CAR AXLE LUBRICATOR.

No. 382,246. Patented May 1, 1888.

Fig. 2

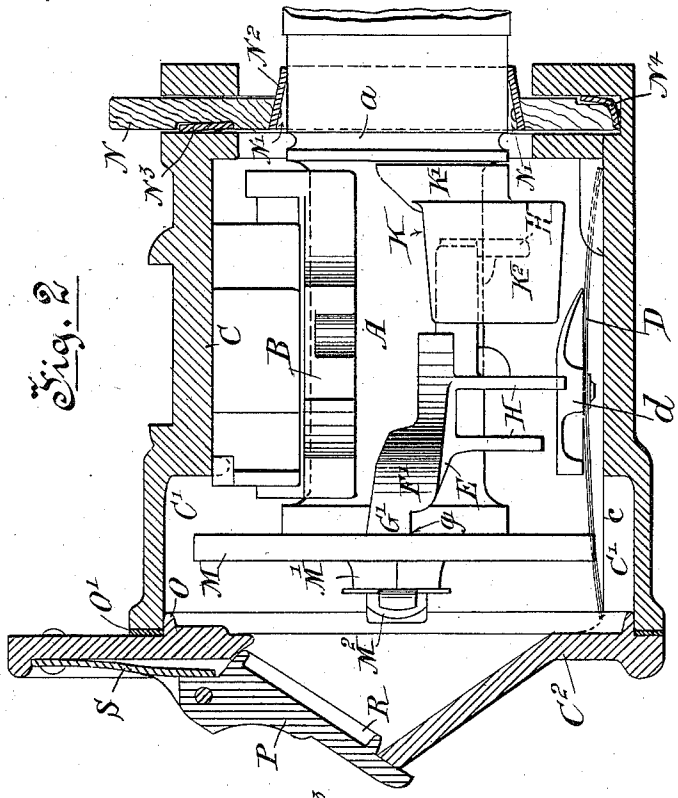
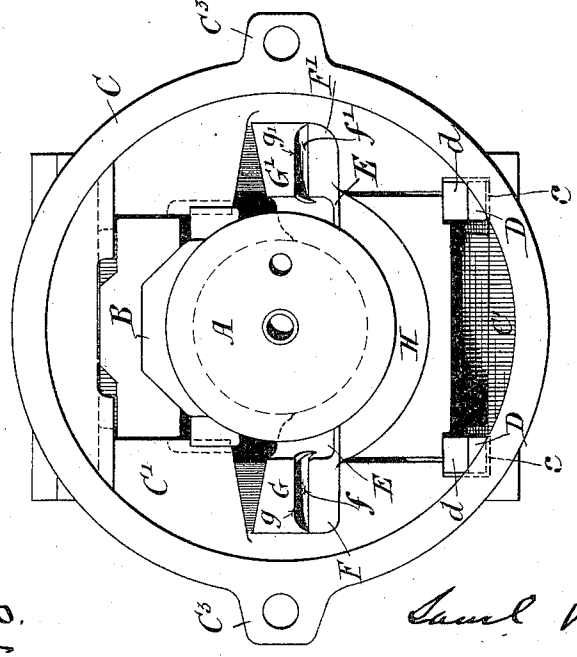


Fig. 1



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

S. VESSOT.

CAR AXLE LUBRICATOR.

No. 382,246. Patented May 1, 1888.

Fig. 3

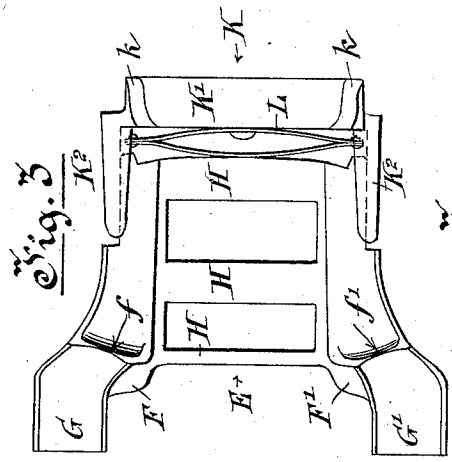


Fig. 4

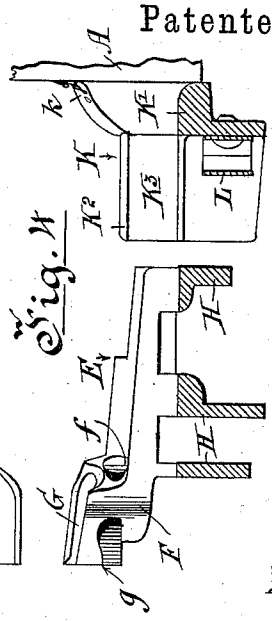


Fig. 5

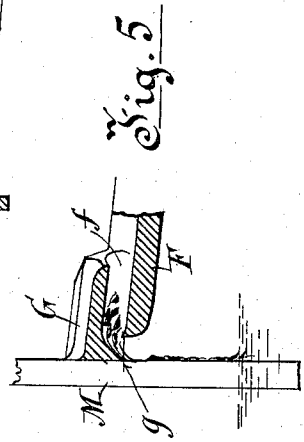


Fig. 7

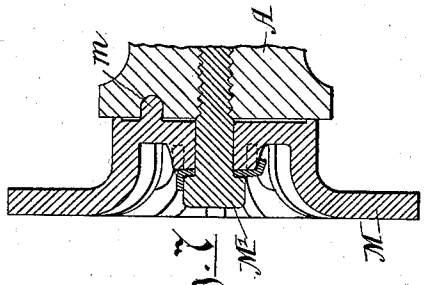


Fig. 8

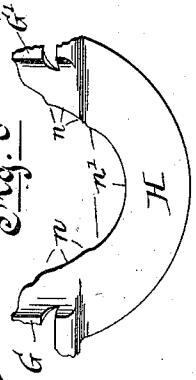
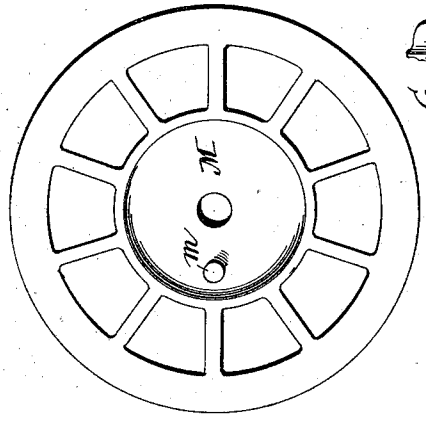


Fig. 6



Witnesses.

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UNITED STATES PATENT OFFICE.

SAMUEL VESSOT, OF JOLIETTE, QUEBEC, CANADA.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 382,246, dated May 1, 1888.

Application filed December 8, 1887. Serial No. 257,308. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL VESSOT, of Joliette, in the county of Joliette and Province of Quebec, Canada, have invented certain new and useful Improvements in Axle-Lubricating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has reference to the means used for automatically lubricating car-axles where hydrocarbon alone is used without "waste," and has for its object to provide for that purpose a device not connected to the box, but free to follow any movement of the axle in the direction of its length, and also a special guard to prevent any loss of the lubricant, and at the same time keep out dust and foreign substances.

I propose to secure on the end of the axle a disk preferably open to allow of inspection of the brasses, &c., and of sufficient diameter to dip into the lubricant in the bottom of the box and raise it. This necessitates an enlargement of the front portion of the axle-box, and I propose to make it circular in cross-section to correspond with the disk. I place on the bottom of the box and at both sides of it loose springs having blocks on them, which serve as beds to carry the lubricator proper and to raise and keep it pressed against the axle, according as the box lowers by the wearing of the brasses. This lubricator or oiler consists of two frames—front and back—with a spring between, the front one sliding in the back and both pressed together between the rear face of the disk and the shoulder of the axle. The front frame is formed of two side channels with covered front ends immediately in contact with the axle and attached together by curved transverse bars pressed against the axle. Above and slightly beyond the front of each of the side channels is the covered end forming a scraper always in contact with the face of the rotating disk, and which takes off the lubricant brought up by it in its rotation, the cover forming part of frame and serving to direct the lubricant into the side channel. The rear frame is grooved to receive any superfluous oil thrown up on the shoulder of the axle, and provided with a spring pressing against the front frame to keep the scraper always in contact with the disk.

The dust-guard is so constructed as to be always in contact with and encircle the axle, whatever may be the independent movement of the axle-box.

For full comprehension of the invention reference must be had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a front view of the axle and box with front face of box and the disk removed; Fig. 2, a longitudinal vertical sectional elevation taken through axle-box and dust-guard; Fig. 3, a plan of channeled frames, &c.; Fig. 4, a longitudinal vertical sectional elevation of frames, showing them apart; Fig. 5, a vertical longitudinal section through covered end and part of a side channel, showing clearly the operation of disk and scraper; Fig. 6, a back view of disk; Fig. 7, a section of modification of same, and Fig. 8 a front view of one transverse bar of frames.

Similar letters of reference indicate like parts.

A is the axle, and B the brasses, &c., of any ordinary kind.

C is the axle-box, of the usual type, in its rear, but having its front part formed into a chamber, C′, circular in cross-section, and having corresponding front plate, C^2, with flap-door formed in it.

c c are flat ways in the bottom of the box, on which are set the springs D D, with blocks *d d*, of the shape shown in Fig. 2, mounted on and secured to them. Upon these blocks *d d* the frame E, composed of two side pieces, F F′, with channels *f f′* formed in them, rests, the blocks being of sufficient length to allow any lateral motion of the axle with frame E, independently of the box and according to the wear of the brass.

G G′ are covers or shields made in one with side pieces, F F′, channeled on top and having turned-down ends, projecting over the ends of the side pieces proper, bearing against the face of the disk, (to be presently described,) and terminating in sharp edges *g g′*, acting as scrapers. The side pieces, F F′, are connected by curved transverse bars H H, the upper faces of which are in contact with the axle, and, as shown at *n n′*, Fig. 8, formed of a double curve, so as to allow of their fitting the axle closely, even if it is worn.

K is the rear frame, formed of a back rim, K′, (grooved, as shown at *k k*,) half encircling the axle in front of the shoulder and pressing against same.

K^2 K^2 are side pieces, in the grooves K^3 of which the ends of the side pieces, F F′, move freely.

L is a bow-spring secured to K′ and pressing against the rear transverse bar, H.

M is the disk, with a square elevation, M′, at its center, of the same size as the head of the screw M^2, by which it is secured on the end of the axle A, kept from turning loose by a projection, *m*, setting into a corresponding recess in the axle. This disk is, as shown in Fig. 6, open, so as to allow of inspection of the brasses, &c., simply by opening the door in the front, C^2, of the axle-box.

The screw which secures the disk on end of axle is kept from getting loose by an ordinary pliable metal washer, one side of which is turned over the edge of one side of the square elevation M′, and the other side is turned up against one side of square head of screw M^2.

In some cases side projections from the truck, causing depressions in the sides of the axle-box, will restrict the depth (longitudinally) of the chamber C′, so that it will become necessary, in order to allow of the use of the disk, to make such disk as shown in Fig. 7, its construction being otherwise the same.

N is the dust-guard, (of wood, as usual,) N′ being a circular opening in it, through which the axle passes, and of somewhat larger diameter than the same, the opening in the axle-box being, as usual, oval. The opening N′ is lined with a strip of sole-leather, N^2, projecting somewhat beyond the side of the guard and conforming to the axle. The strip N^2 is wet and stretched before nailing it to the opening, and the projecting part is turned into the opening to allow the guard to be put into place. The projecting part is then turned out and set to dry on the axle, or on a form of same diameter as it. Having been wet and stretched, the small quantity of oil that may reach the strip will soften it, make it act like rubber, and in spite of its wear it will continue to fit closely to the axle, its ends being joined together by a belt-cramp. A horizontal strip, N^3, of leather at or near the top and a doubled-up similar strip, N^4, under the bottom edge of the guard, together with strip N^2, effectually prevent any entry of dust or outflow of oil.

The operation of the invention will be easily understood from the above and from Fig. 5 of the drawings; but I may further add that the lubricant taken up by the disk M in its rotation is taken off it by either one of the scrapers *g* or *g′*, (according to the way in which the axle is rotated,) and striking the under side of the cover G (or G′, as the case may be) falls into channel *f*, and is thereby conducted to the axle and from thence to journal. Any oil not taken off by the scraper will fall into the channel on the top of G′ or G, and thence in the regular course find its way to the journal; and if any oil is thrown toward the rear of the box it will be scraped off the shoulder by rim K′, and the small quantity that might pass the shoulder will be intercepted in its course by the groove *a* in the axle and thrown from it by centrifugal force to the body of the lubricant in the box.

The construction of the double frames E and K with the bow-spring L between them is to keep the front scrapers continually pressed against the disk and the rear scrapers (formed at the mouths of grooves *k k*) against the shoulder of axle, and also to compensate for any wear of any of the several parts, while the construction of the dust-guard with leather rim N^2 and strips N^3 N^4 will prevent the entrance of any foreign substances or escape of the lubricant, whatever may be the independent movement of axle and box.

The front plate, C^2, is adjusted to the front end of the axle-box by means of a rim, O, projecting into the chamber C′, thus making it solid, and holding in place a rubber washer, O′, if desired, which serves as a packing. It is secured to the box by two bolts and nuts in any ordinary or desired way, passing through corresponding lugs, C^3, on plate and box, the nuts being locked in place in like manner to screw M^2, holding the disk in place. The removal of plate C^2 leaves the whole front end of the box open, the beneficial results of which will be apparent.

The opening in plate C^2 for the flap door P is made in such manner that the oil cannot escape by it, the door being made with an inwardly-projecting rim, R, which hinders the escape of oil in the event of sudden jerks, and any usual spring, S, being provided to keep it closed tightly.

What I claim is as follows:

1. In an axle-lubricating apparatus, and in combination, the axle, a disk secured on end of same, loose springs carrying blocks and resting on bottom of axle-box, and a frame carried on such springs, said frame consisting of channeled side pieces with curved transverse bars connecting them, and cover-pieces on front ends with turned-down scraping-edges for taking the lubricant from the disk and discharging it into the channels in side pieces, as set forth.

2. In combination with a railway-car axle with disk mounted on its end and axle-box C, the frames E and K and compression-spring between them, all held between said disk and the shoulder of the axle, and loose springs introduced and resting on the bottom of the box to carry said frames and press them against the axle, as herein set forth.

3. The combination of the axle-box having chamber C′, axle having groove *a*, disk mounted on end of axle, and channeled side frames supported on loose springs, all substantially as herein set forth.

4. In combination with a car-axle and axle-

box, the combination of a dust-guard with beveled circular opening, a curved strip of leather having its longest side nailed round said beveled opening and forming a conical projecting rim of somewhat smaller diameter than the axle and conforming closely thereto, and a belt-clamp joining the ends of the said strip of leather, the whole in combination with leather strips above and below opening, all as herein set forth.

SAMUEL VESSOT.

Witnesses:
EDWARD FISKE,
JOSEPH PRÉVILLE.