

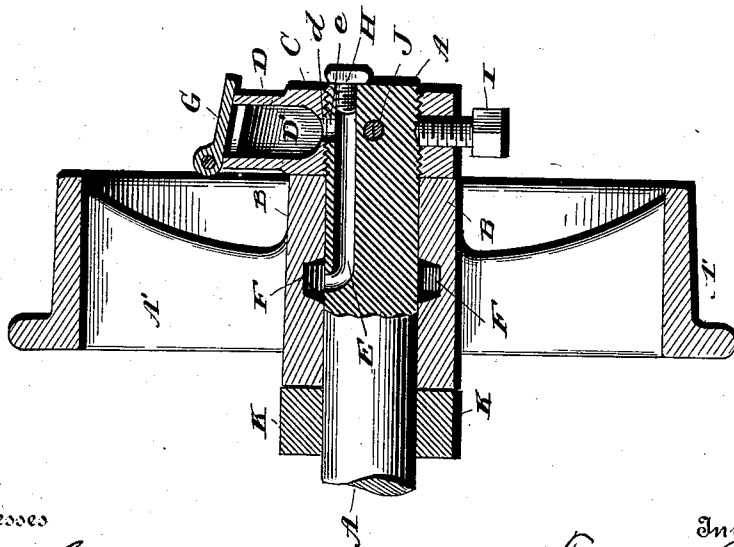
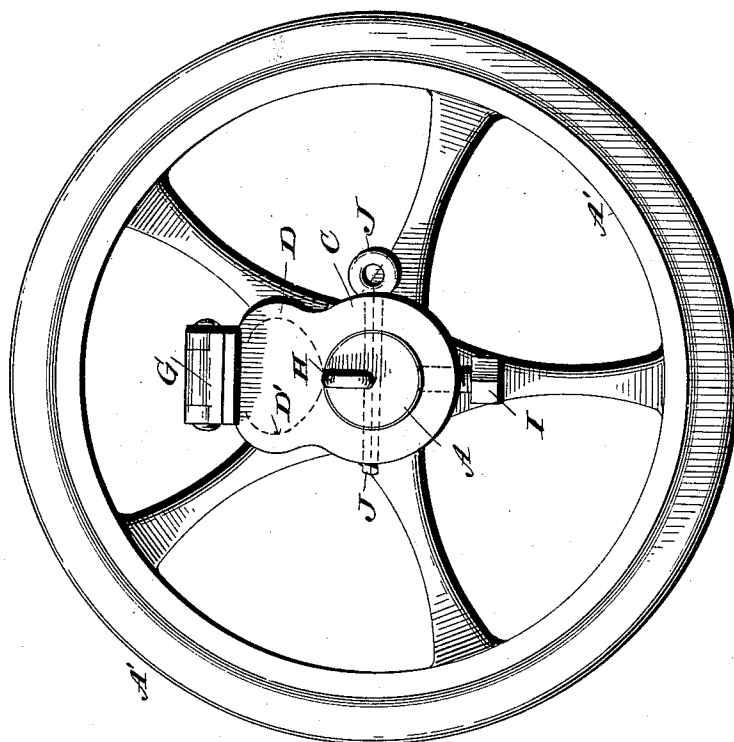
(No Model.)

F. PALFREY.

AXLE LUBRICATING DEVICE FOR CAR WHEELS.

No. 508,335.

Patented Nov. 7, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK PALFREY, OF MACON, MISSOURI, ASSIGNOR OF ONE-HALF TO
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AXLE-LUBRICATING DEVICE FOR CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 508,335, dated November 7, 1893.

Application filed June 14, 1893. Serial No. 477,560. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK PALFREY, a citizen of the United States, residing at Macon, in the county of Macon and State of Missouri, have invented certain new and useful Improvements in Axle-Lubricating Devices for Car-Wheels; 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.

Heretofore much difficulty has been experienced in securing a satisfactory lubricating device for that style of car wheels which turn upon a rigid axle, and are especially used on mining cars. A number of difficulties have to be encountered, among which may be mentioned the following. The oil which is ordinarily employed is of a cheap grade and stops up the oil conducting passages if they are at all intricate in their construction and arrangement, and besides the amount of sediment which is deposited, on account of the low grade of oil used and from the coal dust which gets into the oil box and the other parts of the lubricating apparatus, requires constant inspection to ascertain whether or not the lubricator is working properly, and the frequent cleaning of the oil passage ways and chambers; the sudden changes of temperature to which the mining cars are subjected in winter weather, in passing from the mine, where the temperature is sometimes 80°, to the dump, where the temperature is often below zero, results in causing a defective operation of the lubricating device unless it is of exceedingly simple construction; and further difficulties and objections which must be guarded against are the wasting of the oil, the want of adjustability of the parts, and a lack of strength, durability and cheapness in the lubricating device.

The object of my invention is to provide an axle lubricating device for car wheels of that style which turn upon a stationary axle which shall overcome the difficulties incident to the lubricating devices which have heretofore been in vogue, and which shall possess the advantages which will be presently pointed out and which arise from the novel construction of the device.

In the accompanying drawings I have illustrated the preferred form of my invention, although I do not wish to be limited to the details of construction and arrangement of the several parts of the device, as it will be apparent that the parts can be modified or somewhat differently arranged without departing from the essential features of the invention.

Referring to the said drawings: Figure 1 represents a vertical section through a car wheel and axle, which are provided with my improved lubricating device. Fig. 2 is a front end view of the same.

Referring to the said drawings A designates the stationary axle and A' the car wheel mounted thereon. The hub B of the wheel is chambered as at F, the said chamber opening into the aperture through which is passed the axle. The inner end of the hub of the wheel bears against a collar K formed upon or secured to the axle, and the wheel is held in place upon the axle by a keeper C, which is preferably in the form of a nut which engages with the screw-threaded end of the axle. The keeper C might be held in place upon the axle against the end of the hub by means of a key or set screw and therefore I do not wish to be limited to making it in the form of a nut. I shall hereinafter refer to the keeper C as a nut as that is the form in which it is usually constructed and in which it is shown in the drawings. This nut is provided with a boss or projection D which is chambered, as shown at D' Fig. 1, to form an oil reservoir, and covering the open end of the said oil reservoir or chamber is a swinging cover G. In the bottom of the oil reservoir D' there is formed a port or opening *d*, which, when the nut is in position to hold the wheel properly upon the axle, is adapted to register with a port *e* which communicates with a channel E formed in the axle and communicating with the chamber F in the hub of the wheel. The ports *d* and *e* and the channel E constitute the oil duct leading from the oil reservoir to the chamber F in the hub. The duct or channel E is preferably straight, and it extends quite out to the end of the axle and it is closed by a plug H. By removing the plug ready access can be had to the oil duct and to the chamber

within the wheel hub so that these parts can be cleaned out by introducing a wire or a suitable cleaning tool. It will thus be seen that if sediment accumulates within these parts it can be readily removed and the attendant can at any time inspect the lubricating device to see whether or not it is properly operating. The extension or boss D is of such construction that when the nut is properly placed upon the axle the oil chamber D' extends upward some distance above the upper surface of the bearing, and is thus elevated above the chamber F and duct E so that the oil is fed thereto by gravity, which is certain in its action. The passage-way from the elevated oil reservoir to the chamber F in the hub is free and so simple in its arrangement that it is almost impossible they should become choked or stopped up.

In order to prevent the nut from accidentally turning upon the shaft or the axle I prefer to employ a safety key J which passes through holes in the nut and in the axle, such holes being in register with each other when the nut is in proper position upon the axle. I have also shown combined with the nut and with the axle, a set screw I which passes through that portion of the nut which is opposite to the extension D and is adapted to bear against the under surface of the axle. This said screw operates not only to prevent the accidental turning of the nut but it also serves to draw the upper surface of the nut down close upon the axle. It thus insures a tight fit between that portion of the nut in which is situated the oil reservoir and the axle so that the leakage of oil is prevented. It will be understood that the set screw I is particularly serviceable when the keeper C is not screw-threaded but has a smooth faced bearing upon the axle. A lubricating device of the character which I have described is exceedingly simple in construction and can be cheaply manufactured. It possesses the advantages which have been suggested as necessary to a successful and satisfactory lubricating device of the character described, and reduces the number of parts necessarily employed to a minimum.

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

1. The combination of a stationary axle provided with an oil duct or passage leading to the bearing for the wheel, the wheel mounted upon the axle so as to turn freely thereon, the removable keeper for holding the wheel in place upon the axle, and having an upward extension or boss which is chambered out to constitute an oil receptacle, and which has communication at its bottom with the oil duct or passage in the wheel axle, and means for securing the said keeper upon the axle, substantially as set forth.

2. The combination of a stationary axle provided with an oil channel or duct having one end communicating with the bearing surface upon the axle, and its other end extending quite to the end of the axle and having a port opening thereinto through the upper side of the axle, a wheel turning freely upon the bearing on the axle, an oil reservoir situated above the axle and communicating with the oil channel in the axle through the said port, and the removable plug which closes the outer end of the said channel or duct, substantially as set forth.

3. The combination with a stationary axle provided with an oil channel or duct having a port or opening e through the upper portion of the axle, the wheel mounted upon the axle so as to turn freely thereon, a keeper surrounding the axle and provided with an oil reservoir or chamber situated above the axle, and communicating at its lower portion with the said port e, and a set screw mounted in the said keeper opposite to the said port e and bearing against the under portion of the axle whereby the keeper is made to bear closely upon the axle surrounding the said port, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK PALFREY.

Witnesses:

CHAS. B. TRUITT,
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