ROBERT V. LANEY.

Improvement in Lubricating Wheel or Pulley.

No. 124,596. Patented March 12, 1872.

Fig. 1.

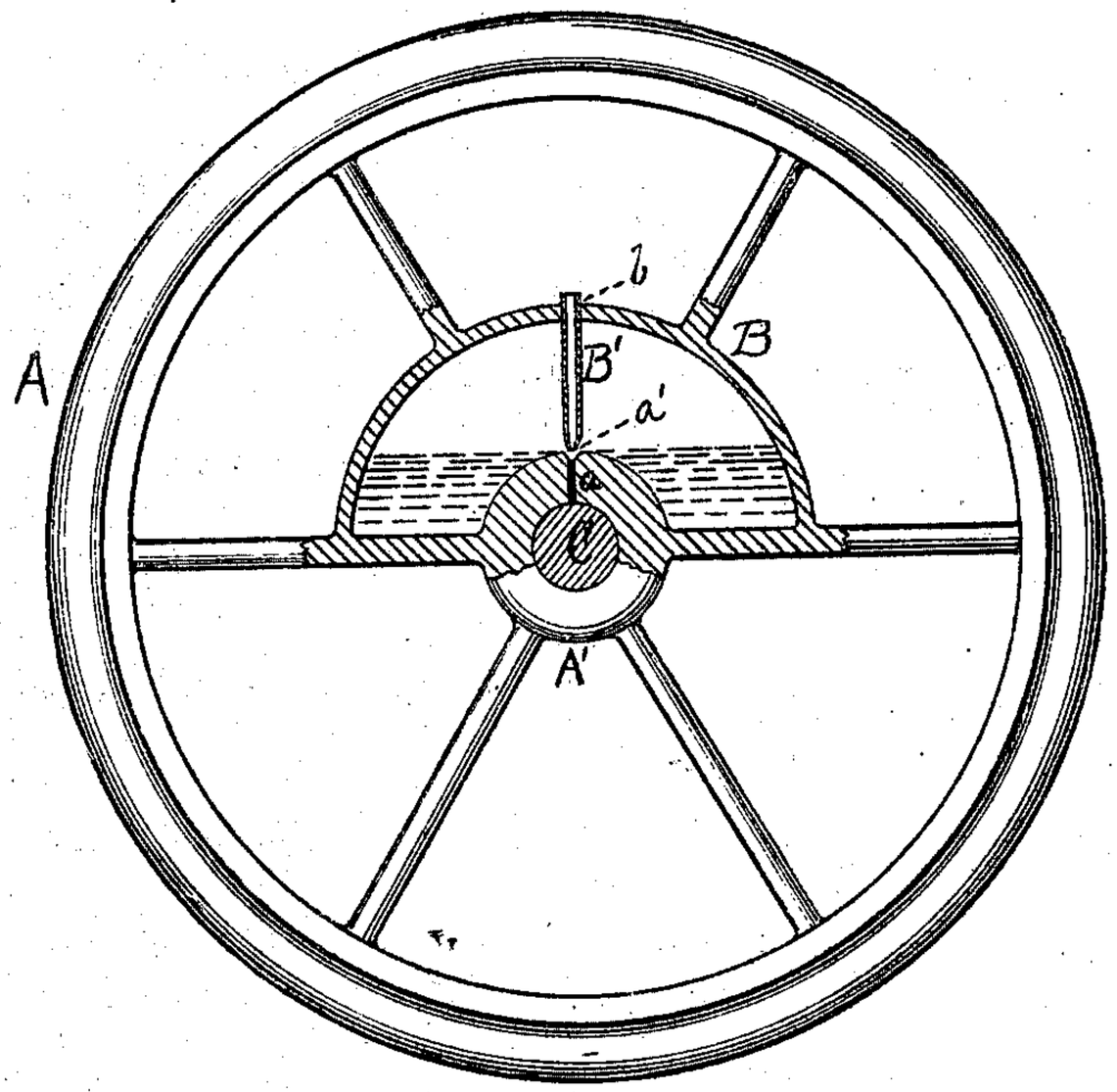
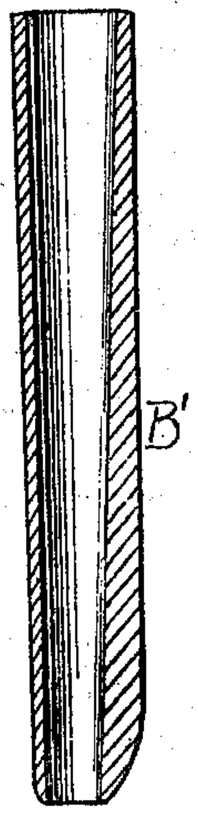


Fig. 3.



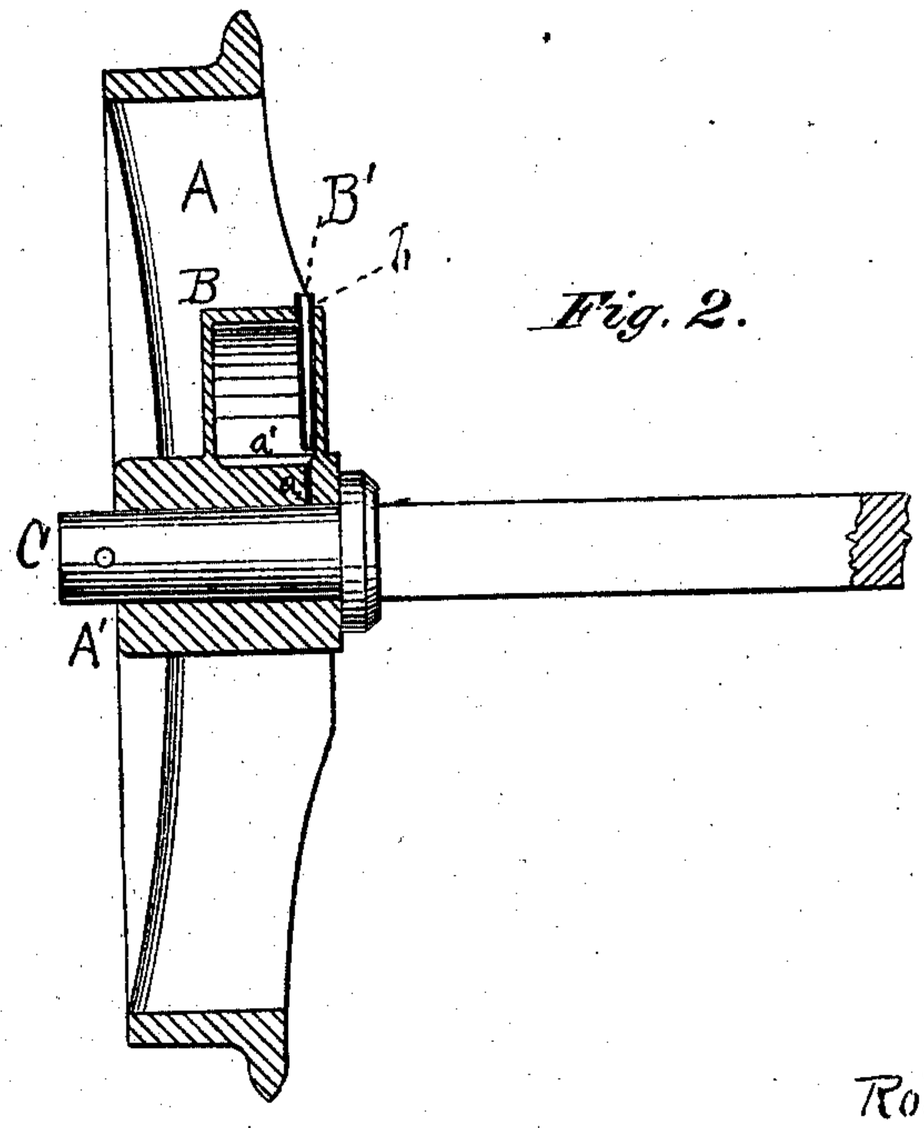


Fig. 2.

Witnesses:

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124,596

UNITED STATES PATENT OFFICE.

ROBERT VANCE LANEY, OF CUMBERLAND, MARYLAND.

IMPROVEMENT IN LUBRICATING WHEELS OR PULLEYS.

Specification forming part of Letters Patent No. 124,596, dated March 12, 1872.

To all whom it may concern:

Be it known that I, ROBERT V. LANEY, of Cumberland, in the county of Alleghany and State of Maryland, have invented an Improved Lubricating Wheel or Pulley, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon making part of this specification, in which—

Figure 1 is a longitudinal sectional view of the lubricating-wheel. Fig. 2 is a vertical sectional view. Fig. 3 is a vertical sectional view of the lubricating-tube, being drawn full size.

The object of my invention is to furnish a lubricating wheel or pulley, so constructed that the reservoir shall not only be permanently attached thereto, but made a component part thereof. This lubricating wheel or pulley is equally applicable to all species of land conveyance, such as railroad cars, wagons, carriages, &c., and also to many classes of agricultural implements, such as harvesters, grain-drills, seed-planters, &c., and most admirably adapted to all branches of machinery in which shafts with revolving wheels or pulleys are used. The nature of my invention consists in casting or otherwise constructing an ordinary wheel or pulley with a close chamber, its form being that of an arc or segment of a circle, to serve as a reservoir for the lubricating oil or substance; and also in forming on the upper section of the nave or hub a longitudinal groove which communicates with a central discharge-passage; and, further, in providing the filling-orifice with a stationary tube that shall extend to a point immediately above or in close proximity to the upper walls of the groove and directly over the central discharge-passage. Experience, the result of practical experiment, in connection with my present lubricating device, fully attests its value and demonstrates its greatest utility.

The advantages incident to this construction and combination of wheel or pulley and lubricating-reservoir are not confined to its cheapness, simplicity, and durability, but are also abundantly found in the accuracy and reliability of its automatic operation. If the reservoir is properly supplied—that is, filled to not over one-half its capacity—the lubricating-oil is fed with exact precision at each revolution of the pulley or wheel when, and only when, the discharge-passage is on a direct vertical line with the center of the axle; and, owing to the fact that the filling-orifice and its tube are also on a direct line with the central discharge-passage, should either become choked or obstructed, and the latter is especially apt to become so, they can readily be relieved and the obstruction removed simply by introducing a straight rod or other probe.

The construction and operation of my invention are as follows:

A is the wheel or pulley, and B the chamber which constitutes the reservoir for the oil or lubricating substance. This chamber or reservoir is in the form of an arc or segment of a circle, and may be semicircular, as shown in the drawing, or, if desired, so enlarged as to encircle nearly, but not entirely, the hub or nave A′. This chamber is cast or otherwise constructed with the wheel so as to become a permanent or component part thereof. *a* is a central discharge-passage, through which the lubricating oil or other substance is fed to the spindle of the axle C or to the journal. *a′* is a groove that extends partly across the hub or nave A′, its length being the same as the width of the reservoir B. The form of this groove *a′*, as well as its direct communication or connection with the central discharge-passage *a*, is clearly shown in Figs. 1 and 2. At the center of the periphery or circumference wall of the chamber is an orifice, *b*, in which is permanently secured the filling-tube B′. The form of this tube is fully shown in the full-size representation of the same given in Fig. 3. This tube is inserted and secured in the orifice *b* with its flat face resting against the face of the inner wall of the chamber, or that wall of the chamber which, when the wheel is attached, is nearest the shoulder of the axle. The relative position of this tube B′, in connection with the central discharge-passage *a* and groove *a′*, is clearly shown in Figs. 1 and 2, and by reference to which it will be seen that it is immediately over the passage *a*, and, consequently, directly over the section of the groove *a′* that empties into the passage *a*.

From the foregoing description the automatic operation of the device, as well as the principle that governs the same, will readily be understood. The wheel or pulley being attached to the axle or journal, as the case may be, when

the oil or other lubricating material is to be applied, the wheel is turned so that the tube shall be at an angular instead of the vertical position shown in Fig. 1. The oil or other material is now poured in and passes to the section of the chamber that is lowest, through the space left between the lower section of the tube and the groove *a'*, not a particle of the same entering the central discharge-passage *a* unless improperly the chamber B is filled to an extent beyond one-half its capacity, which, however, should under no circumstances ever be the case. As the wheel revolves and the tube B' and discharge-passage *a* are brought in such relative position to the axle, as shown in Fig. 1, the oil being distributed evenly throughout the chamber, as shown in dotted lines in the same figure, the oil immediately fills the groove *a'*, and passing thence to the discharge-passage *a*, is fed to the spindle or journal and discharged immediately next the shoulder of the axle, the point where the greatest wear occurs and where a proper lubrication is most important. Thus at each revolution of the wheel the oil is accurately fed, and at no other time. Should the passage *a* become choked, the tube B' being on a line therewith, it can readily be opened simply by passing a rod or equivalent device through the tube.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The chamber B, cast or otherwise formed with the wheel or pulley A, tube B', central discharge-passage *a*, and groove *a'*, when the same are so combined and arranged as to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT VANCE LANEY.

Witnesses:
JOSEPH GONDER,
R. V. SAYLES.