(No Model.)

B. T. HENRY.

SELF OILING TROLLEY WHEEL.

No. 584,686. Patented June 15, 1897.

Fig. 1.

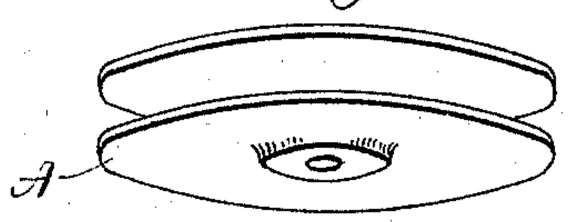


Fig. 2.

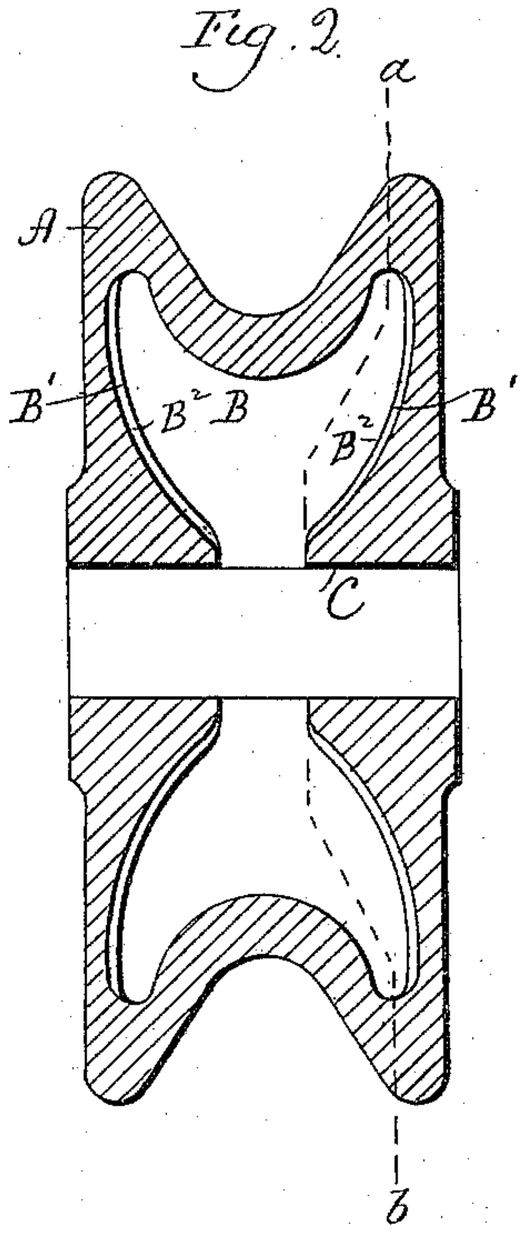
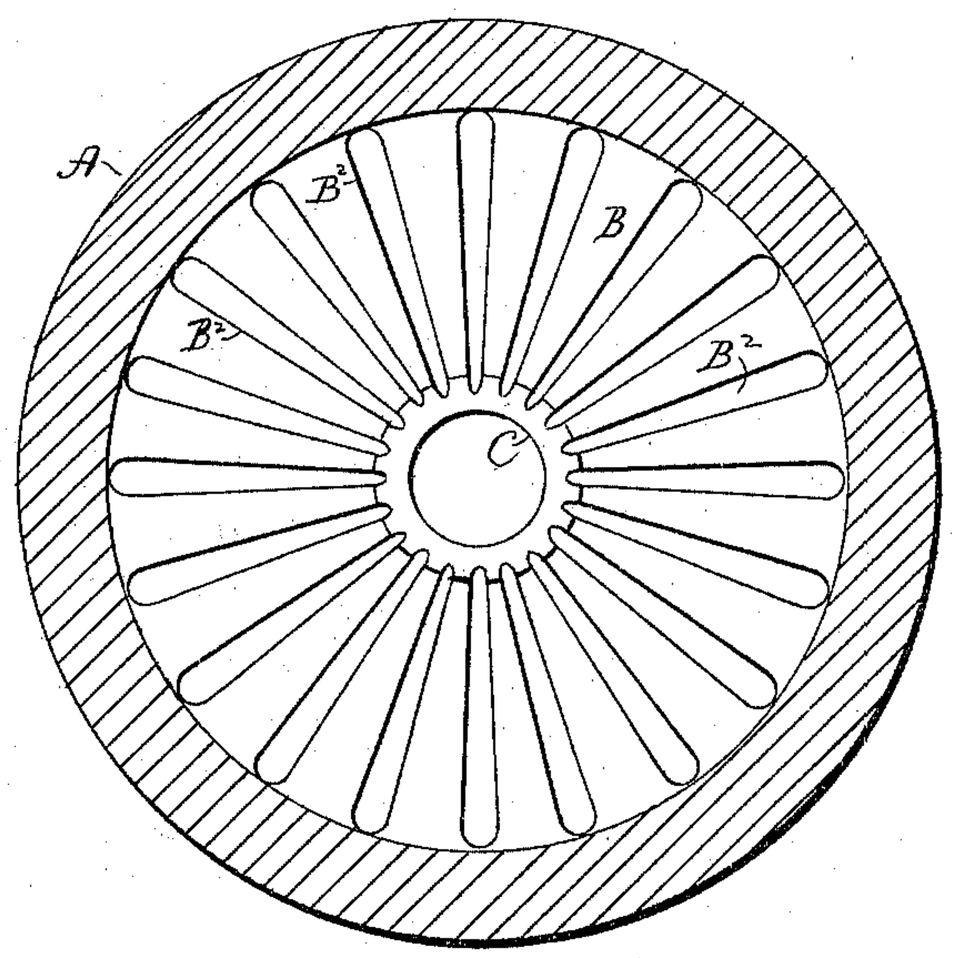


Fig. 3.



Witnesses.
J. H. Shumway.
Lillian D. Kelsey.

Benjamin T. Henry.
Inventor.
By atty
Earle Seymour

UNITED STATES PATENT OFFICE.

BENJAMIN TYLER HENRY, OF NEW HAVEN, CONNECTICUT.

SELF-OILING TROLLEY-WHEEL.

SPECIFICATION forming part of Letters Patent No. 584,686, dated June 15, 1897.

Application filed May 18, 1896. Serial No. 591,921. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN TYLER HENRY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Self-Oiling Trolley-Wheels; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of a trolley-wheel containing my invention. Fig. 2, a view thereof in vertical section; Fig. 3, a view thereof in the plane of the wheel on the irregular line *a b* of Fig. 2.

My invention relates to an improvement in self-oiling trolley-wheels, the object being to produce a simple and durable wheel which will not leak in use and which will secure such an effective and economical use of the contained oil, so long as any oil whatever remains in it, that it will need refilling only at very long intervals.

With these ends in view my invention consists in a self-oiling trolley-wheel having certain details of construction, as will be hereinafter described, and pointed out in the claim.

In carrying out my invention, as herein shown, the trolley-wheel A, which is cast in one piece, is formed with a centrally-arranged circular oil-chamber B, centrally intersected by means of a transverse opening C, formed in the wheel for the reception of its axle, which is not shown. The said wheel is formed in the usual manner with a deep peripheral groove which receives the overhead trolley-wire, upon which it travels. The oil-chamber B is extended outward on opposite sides of the bottom of this groove, whereby the wheel is made lighter and the chamber increased in its oil-containing capacity. The side walls of the chamber are extended inward for increasing the bearing of the wheel upon the axle thereof, and also for focusing the oil upon the axle for the lubrication of the same, the said walls being inwardly inclined and that portion of the axle extending between them being completely exposed. The said side walls of the chamber as thus inwardly extended and inclined may, for want of a better term, be called "hub-like" in form, though they might be more exactly described by the term "frusto-conical." Each of these hub-like inwardly-projecting side walls of the oil-chamber is formed with a circular series of radially-arranged shallow inwardly-inclined grooves B^2, which insure the oiling of the axle every time the wheel is started up and every time it stops in case the level of oil in the chamber is below the axle when the wheel is at rest. At such a time the submerged, or partially-submerged, grooves lift portions of the oil to positions vertically, or substantially vertically, above the axle, and then convey it inwardly to the axle, or to a point close to the same, and prevent it from flowing or creeping laterally around the inclined surfaces of the hub-like inwardly-projecting side walls, and so passing around the axle into the bottom of the wheel, then to be thrown outward by centrifugal force into the outer portion of the oil-containing chamber. The grooves prevent the oil from flowing laterally, as suggested, and convey it inwardly to a point close to or directly over the axle. When the wheel is running, the main body of oil is maintained in the outer portion of the chamber, so that there is no tendency of the oil to work around the axle. On the other hand, when the wheel is at rest there is very little opportunity for the oil to work out around the axle, because the same is so closely fitted into the wheel. Of course when the level of the oil in the chamber is below the level of the axle when the wheel is at rest it will be impossible for any oil to escape. For filling the oil-containing chamber the wheel is removed from its axle and turned on its side. Then while one end of its transverse axle-opening is closed the oil is introduced into the other end of the opening. I much prefer supplying oil to the chamber in this way than through any passage formed in the pulley, for the reason that oil and dirt are better excluded from the chamber and for the further reason that any tampering with the wheel, so far as its adaptability to be self-oiling is concerned, is avoided.

I am aware that it is old to form car-wheels, pulleys, and trolley-wheels with oil-containing chambers to adapt them to be self-oiling, and also that it is old to provide such devices with means for lifting the oil. I do not there-

fore claim, broadly, a wheel formed with an oil-containing chamber and provided with means for lifting the oil in the said chamber; but,

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

A self-oiling trolley-wheel cast in one piece, having a transverse axle-opening for the reception of the axle upon which the wheel runs, and a deep peripheral groove for the reception of the trolley-wire, and formed with a large oil-chamber concentric with the periphery of the wheel having inwardly-extending frusto-conical side walls between which that portion of the axle extending between them is completely exposed, and each of which walls is formed with a circular series of radially-arranged, inwardly-inclined grooves, which lift portions of the oil in the chamber to a point above the axle, and then convey it thereto, preventing it from flowing laterally downward over the said walls, and thus around the axle instead of directly to the same.

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

BENJAMIN TYLER HENRY.

Witnesses:
GEO. D. SEYMOUR,
LILLIAN D. KELSEY.