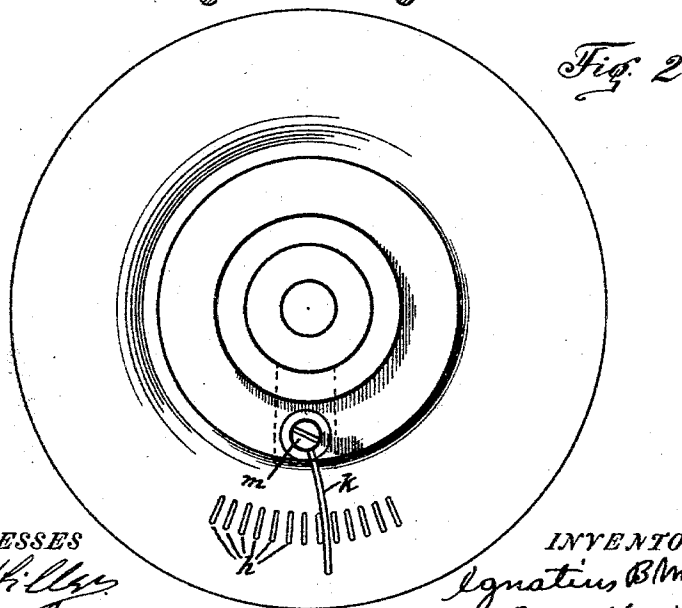
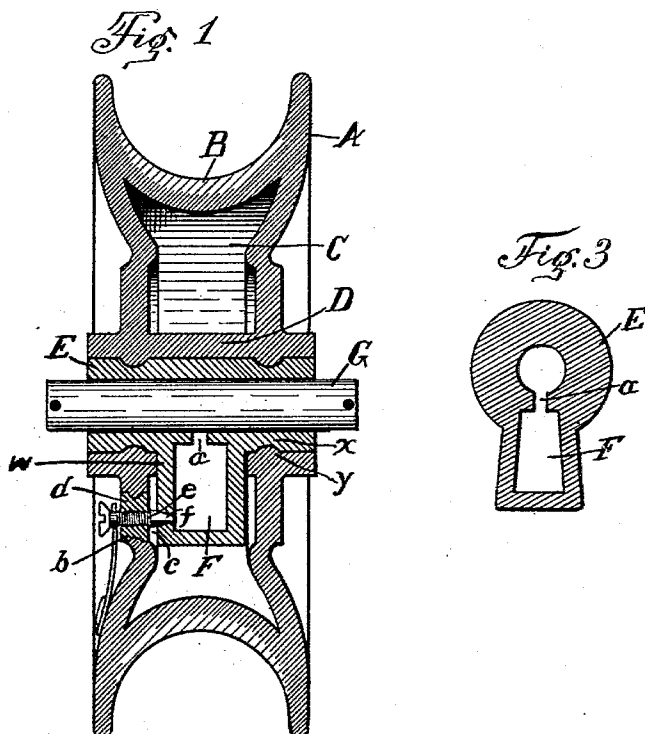


(No Model.)

I. B. METZGER.
TROLLEY WHEEL.

No. 562,904.

Patented June 30, 1896.



WITNESSES
Geo. Hill
Ben H. Miller

INVENTOR
Ignatius B. Metzger
By W. K. Miller
Attorney

UNITED STATES PATENT OFFICE.

IGNATIUS B. METZGER, OF CANTON, OHIO.

TROLLEY-WHEEL.

SPECIFICATION forming part of Letters Patent No. 562,904, dated June 30, 1896.

Application filed June 20, 1895. Serial No. 553,434. (No model.)

To all whom it may concern:

Be it known that I, IGNATIUS B. METZGER, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Trolley-Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in trolley-wheels, the object of which is to provide a more durable wheel at a less initial cost.

With this object in view my invention consists of certain features of construction and combination of parts, as will be hereinafter described and claimed.

Figure 1 of the drawings is a transverse section through the center of the wheel. Fig. 2 is a side elevation, and Fig. 3 is a section transverse the antifriction hub or journal box.

A denotes the wheel, which is made of chillable cast-iron, the object of which is to provide a chilled or hard contact-surface, as shown at B. In the wheel A is provided an annular oil-chamber C about a cast-iron wall D. E denotes a central hub or journal box, made of antifriction metal, such as brass, having annular depressions *x*, by which the hub is secured in the cast-iron body, which forms ribs *y* in the grooves or depressions *x*, the object of which is to form a durable bearing. At the side of said hub is provided a chamber F, which projects through an opening *w*, formed in the wall D, and in which is packed an oil-retaining substance, mineral wool preferred, by which the oil is slowly but continuously fed to the spindle G through the opening *a*.

In construction, the wheel A is made of hard and easily-chilled cast-iron, and to form the chilled contact-surface B, a metal chill to conform with the curvature of the contact-surface is placed in the mold, with a sand core preferably composed of fine sharp sand and sweetened water to form the chamber C. The antifriction-metal hub E is placed in the mold, as is also the brass plug *b*, in which is provided a screw-thread *c*, adapted to the screw *d* on the stem of the pin-valve *e*, the inner end of which is adapted to the tapered

valve-seat *f* in the side wall of the chamber F, by which the flow of oil from the large chamber C to the small chamber F is regulated by turning the valve *e* into or out of the valve-seat *f*.

To remove the sand core after the wheel is cast, it may be dipped into water to soften the core and then violently shaken. This will loosen the sand and allow it to pass out through the screw-hole *c*.

To secure the valve in desired adjustment, a series of lugs *h* are provided on the side of the wheel, in which is placed the free end of a wire spring *k*, attached to the valve-stem *m*.

In operation, when it is desired to increase or diminish the flow of oil through the hole *f*, the spring *k* is lifted from between one set of lugs and moved over between another set. This will move the screw *d* in or out of the hole *f*, as the case may be, and thus regulate the flow of oil.

By this construction a trolley-wheel is obtained that will endure continuous service for many months, while the ordinary brass or bronze wheel will endure service but for a few weeks. The cast-iron wheel with the chilled contact-surface and antifriction-metal hub, as described, can be produced at a less initial cost than a bronze or composition wheel.

Having thus fully described the nature and object of my invention, what I claim is—

1. The combination with a trolley-wheel having a chamber, of a hub secured within said chamber and provided with a chamber having apertures, one of which communicates with the trolley-chamber and the other of which is adapted to supply oil to the trolley-spindle, a valve for controlling the flow of oil from the trolley-wheel chamber to the hub-chamber, and a connection between the valve and the trolley-wheel for retaining the valve in a predetermined regulated position, substantially as set forth.

2. A trolley-wheel having an interior chamber, and the annular wall provided with an opening, in combination with a hub secured to the annular wall and having a chamber projecting through its opening into the wheel-chamber, said hub-chamber having openings, one to feed the oil to the trolley-spindle and the other communicating with the wheel-chamber, and a valve for regulating the flow

of oil through said latter opening, substantially as set forth.

3. A trolley-wheel having a chilled contact-surface, and an interior chamber, and provided with lugs upon its side, in combination
5 with a hub secured to said wheel and provided with a chamber projecting into the wheel-chamber and provided with openings, one to supply oil to the wheel-spindle and the
10 other to supply oil to the hub-chamber from the wheel-chamber, a needle-valve, the stem

of which has a screw-threaded engagement with an aperture in the side of the wheel, and a spring-rod secured to the outer end of the stem and engaged with one of said lugs, 15 substantially as set forth.

In testimony whereof I have hereunto set my hand this 17th day of June, A. D. 1895.

IGNATIUS B. METZGER.

Witnesses:

ED. N. MASON,
JOHN ADAMS.