(No Model.)

W. H. FROST.

CASE FOR DRIVING GEAR.

No. 600,911. Patented Mar. 22, 1898.

Fig. 1.

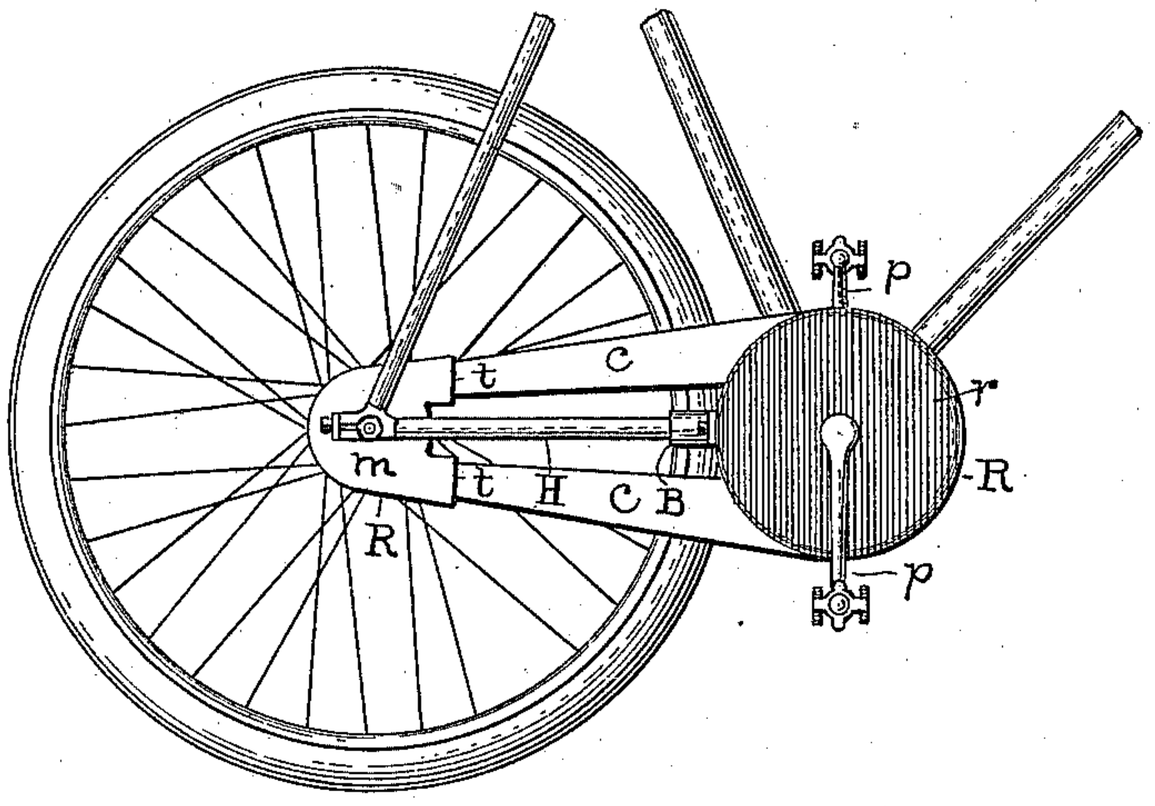


Fig. 2.

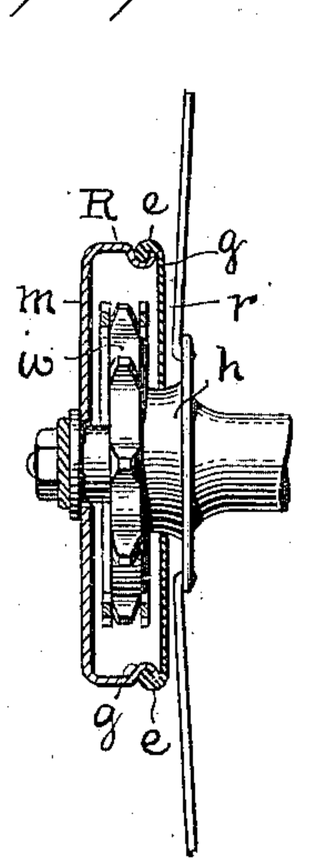


Fig. 3.

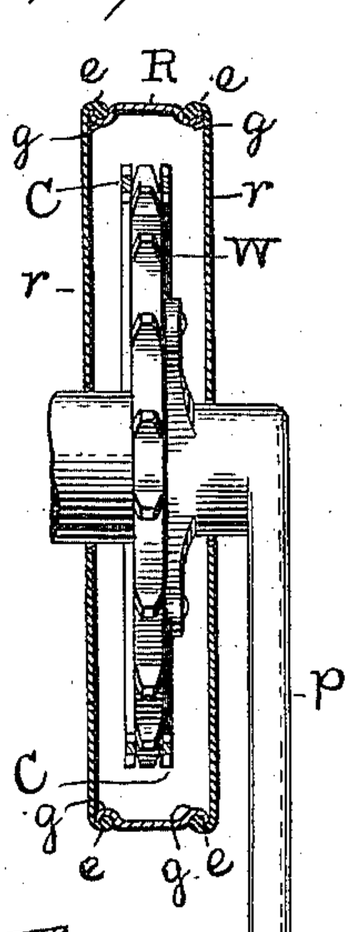
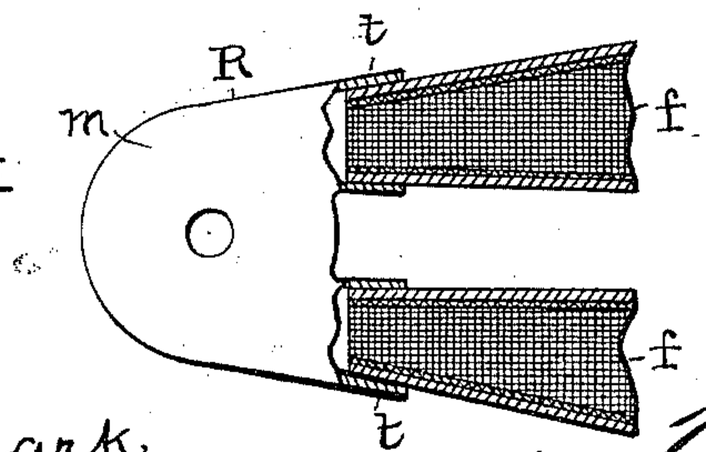


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WARREN H. FROST, OF NEW YORK, N. Y.

CASE FOR DRIVING-GEAR.

SPECIFICATION forming part of Letters Patent No. 600,911, dated March 22, 1898.

Application filed April 8, 1897. Serial No. 631,239. (No model.)

To all whom it may concern:

Be it known that I, WARREN H. FROST, a citizen of the United States, and a resident of New York, in the county and State of New York, have made certain new and useful Improvements in Cases for Driving-Gear of Wheeled Vehicles, of which the following is a specification.

My invention is an improvement in cases for covering the gearing of wheeled vehicles, such as bicycles, where sprocket-wheels and a sprocket-chain are usually employed.

The object of my invention is to provide a cheap and efficient means for excluding dust, mud, and water from the driving-gear, to prevent the rattling of the chain when slack, and to provide for changing gear-wheels from one size to another in cases having separate covers for the portions or runs of the chain extending between the wheels.

I provide a case for each wheel and for each chain-run. For the larger wheel I provide a rim-cover of rigid material, as metal, having upturned edges to receive the edges of the side walls, which consist of soft elastic rubber, having edges formed to engage the upturned edges of the said rim and to be held in position by virtue of their elasticity. The case for the smaller wheel has a rim of similar rigid material, as metal, and an outside wall of metal, preferably in one piece with the rim. This rim has a similar upturned edge formed to receive and engage with the edge of a soft elastic rubber disk or wall completing the inclosing case. Both cases may have one side wall of metal, or both side walls may be of soft elastic rubber, as described. The rims are to be suitably supported by rigid connections to the frame of the vehicle and are suitably perforated for the passage of the chain. The cases for each chain-run are of metal, lined with a woven cotton fabric, such as canvas or ducking. Each section of chain-case is gradually broadened as it approaches its junction with the larger gear-wheel case, so as to provide for changing from a wheel of one size to that of a different diameter without necessarily changing the chain-case or the wheel-case.

The accompanying drawings illustrate my invention.

Figure 1 is a complete view of my improved gear-case in position. Fig. 2 is a sectional view of the case inclosing the rear or smaller sprocket-wheel. Fig. 3 is a similar view of the case for the larger or front sprocket-wheel. Fig. 4 is a sectional view of the telescopic junction between the chain-case and wheel-case and the lining for the chain-case.

The case for both wheels is composed in part of a metal or other similar rim R, having a grooved edge *g*. The smaller wheel *w*, Fig. 2, has the rim R made integral with an exterior wall of metal *m*, which is held against rotation. The interior wall of this case *r* is perforated at its center and is composed of soft elastic rubber. The periphery is thickened slightly and turned, as shown at *e*, so as to engage the groove *g* and hold its position by virtue of its elastic nature. The wheel *w* and its hub *h* turn in the central perforation in the rubber disk *r*, which makes a flexible dust and water tight junction therewith. The larger sprocket-wheel W, Fig. 3, has a case composed in part of a similar metal or rigid rim R, supported in position by a bracket B, connecting it with a horizontal member H of the frame of the machine or vehicle. The side walls of the case for the wheel W are composed of perforated disks of soft elastic rubber having the turned edges *e*, which contract upon the groove *g*, forming the edges of the rim R. The pedal-crank *p* and the hub of the wheel make a rubbing contact with the interior edge of the rubber disk *r*. The two runs of the chain C, connecting the wheels W and *w*, are covered with tubular sections of metal or some rigid material *c*. These metal sections are preferably formed in one piece with the rim R of the front or larger wheel, although they may be united to the rim by soldering or brazing or by the use of bolts and nuts. The chain-cases *c* are broadened from a point at or near a central longitudinal point to the point of junction with the rim R, forming part of the case for the wheel W, the object being to provide for changing from one sized wheel to another without necessity of changing the gear-case. The opposite end of each chain-case *c* forms a telescopic junction *t* with the projections from the rim R, forming part of the case for the rear wheel *w*. The cases *c* for the chain C are lined with a woven cotton fabric *f*, such

as canvas or ducking, cemented to the interior wall of the said casing *c* or fastened thereto in any suitable manner. I have found that this material is greatly superior to an unwoven or felted fabric. It does not readily disintegrate and prevents the clatter due to a slack chain dropping upon the interior wall of the case.

The described case for the gearing is extremely light, effectively excludes dust and mud, and provides the utmost ease of access to the inclosed parts.

What I claim, and desire to secure by Letters Patent, is—

In a wheeled vehicle the combination with a gear-wheel of a case therefor composed of a rigid rim or peripheral covering, suitably perforated for the driving connection, having an upturned edge to engage a side wall, a side wall of soft elastic rubber having its edge contracted upon the edge of said rim, and a second disk or side wall completing the inclosure, substantially as described.

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Witnesses:
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