(No Model.)

E. WALTER.

WHEEL.

No. 422,169. Patented Feb. 25, 1890.

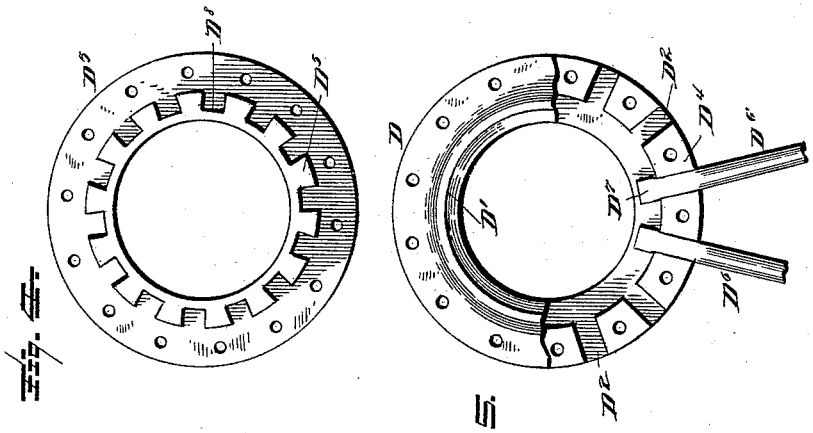

Fig. 4.

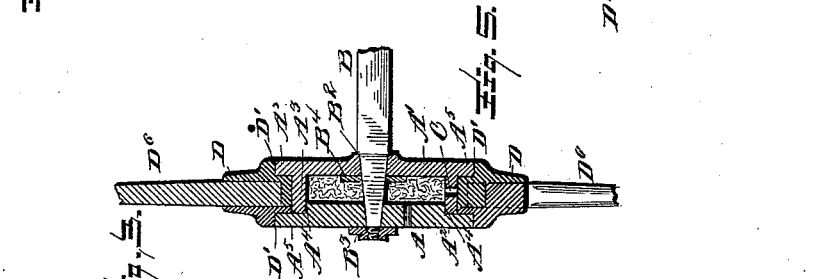

Fig. 5.

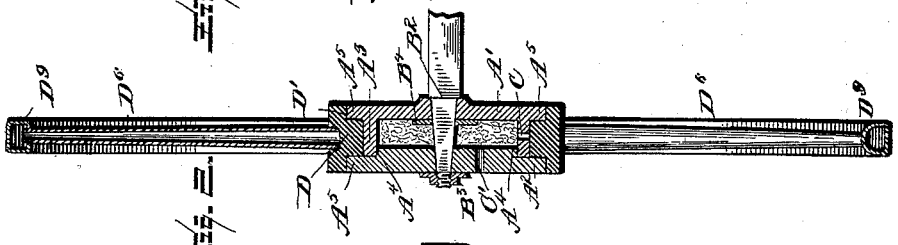

Fig. 3.

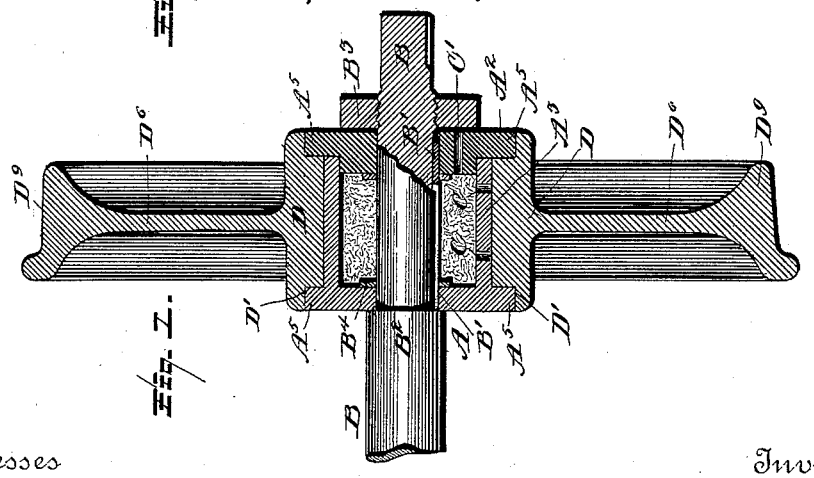

Fig. 2.

Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD WALTER, OF KEYTESVILLE, MISSOURI, ASSIGNOR OF ONE-HALF TO EDWIN W. PRICE, OF SAME PLACE.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 422,169, dated February 25, 1890.

Application filed July 6, 1889. Serial No. 316,689. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WALTER, a citizen of the United States, residing at Keytesville, in the county of Chariton, State of Missouri, have invented certain new and useful Improvements in Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to car, wagon, and other wheels and pulleys, the main objects of the invention being the provision of a wheel having means for thoroughly lubricating the running parts of the same, which are not, as is usual, upon the axle, to means for retaining the spokes firmly and securely in place, and to decrease the wear of the running parts by increasing the said running parts.

By the use of my invention a wheel is provided which is easy-running, light, strong, compact, and easily taken apart for cleaning and the replacement of worn or injured parts, the whole being capable of production at a slight cost.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a central vertical section of a car-wheel embodying my invention. Fig. 2 is a similar view of the invention applied to a spoked wheel, which are of metal, showing the manner of securing them within the hub and rim. Fig. 3 is a view similar to Fig. 2 of a portion of a wheel, showing the manner of securing the spokes in place. Fig. 4 is a plan of one part of the hub, and Fig. 5 is a plan of the hub with the above-mentioned part broken away to expose its interior construction.

Like letters refer to like parts in all the figures of the drawings.

A is the axle-box, which is composed of the box proper A′ and the cap A^2, said cap being provided with the shoulder A^4, projecting into and fitting tightly within the box A. The cap also rests on the edge of the box and in a recess D′, formed in the hub of the wheel to which the invention is applied.

B is the axle, which fits within the box A, and is held there by means of the nut B^3, and to prevent its entrance too far therein is shouldered, as at B^2.

B′ is a spline, which runs along nearly the entire length of the axle from its shoulder to the end, and is seated in a recess formed in the bottom and cap of the box to prevent said box from turning on the axle. In ordinary vehicle-wheels the spline may be dispensed with and the axle merely squared on its end to prevent turning, as shown in Figs. 2 and 3.

C are vents of suitable size, which are formed in the body portion A^3 of the axle-box A for the passage of oil to lubricate the bearing proper on the exterior periphery of the box and cap, and C′ is an opening (or openings) through which the oil may be fed, either being poured or forced into the box, and to prevent the escape of oil from the box washers B^4 are seated on the axles.

It is preferred to fill the box with waste mineral wool or other absorbent material and to saturate the same with any desired lubricant, which is packed in the box, the cap A^2 being removed to place the same therein.

When the waste becomes dry, it is only necessary to resaturate the same by oil, which, as before stated, is fed through the vent or opening C′.

D is the hub, (see Fig. 5,) which is constructed in spoked wheels, as shown in Figs. 2 to 5, inclusive. The hub D is constructed of two parts D^2 D^2, which have the recess into which the shoulders A^5 of the axle-box and its cap A^2 fit, thereby allowing the hub to revolve therein.

D^2 is one of the parts of the hub which has the lugs D^4 formed integral therewith and around its outer edge, between which the spokes D^6 are stepped or socketed, the latter being provided with heads D^7 to prevent their withdrawal. The part D^3 is shouldered, as at D^5, in which there are formed recesses D^8, which receive the heads of the spokes, the two parts being secured together by means of screws or other suitable means.

In Fig. 1 is shown a car-wheel the hub of which is recessed, as at D′, to receive the bottom and cap of the axle-box, which is seated

and revolves between the lugs A^5, whereby the intermediate part D^3 of the hub prevents the displacement of the wheel from the axle-box.

What I claim is—

1. An axle-box for vehicles, consisting of a box proper having a cylindrical body portion, a cap having a shoulder engaging shoulders formed on the body and formed with oil-opening, and washers B^4 within the box, substantially as and for the purpose specified.

2. An axle-box for wheels, consisting of a box proper having a cylindrical body portion, a cap having a shoulder A^4, shoulders formed on the body and cap, and oil vents or openings formed in the cylindrical body portion and cap, substantially as specified.

3. A hub for vehicles, comprising two parts having a recess combined with the axle-box, having shoulders A^5, fitting said recess, and cap A^2, substantially as described.

4. The combination, with a shouldered axle, of an axle-box having a peripheral flange, a hollow cylindrical body, a cap projecting into and also beyond the body, and a wheel, the hub of which is fitted to the body, and means for securing the parts together and for supplying oil to and from the box, substantially as specified.

5. In a wheel, the combination of a shouldered axle, a hollow axle-box provided with a cap, a box and cap, projecting lateral flanges, a two-part hub mounted on the box and bearing thereon and on its flanges, and spokes seated in the hub and rim and felly, substantially as specified.

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

EDWARD WALTER.

Witnesses:
W. W. RUCKER,
E. W. PRICE.