(No Model.)

W. S. KISINGER.

CAR WHEEL.

No. 418,727. Patented Jan. 7, 1890.

Fig. 1

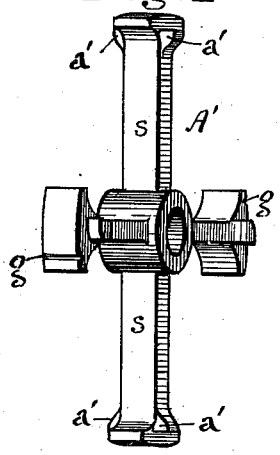


Fig. 2

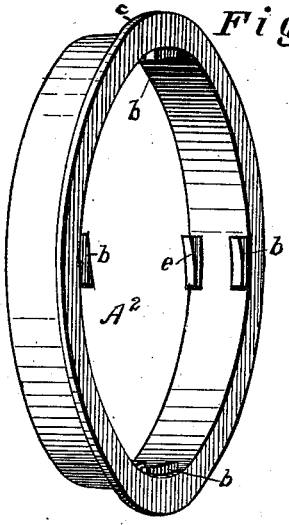


Fig. 3

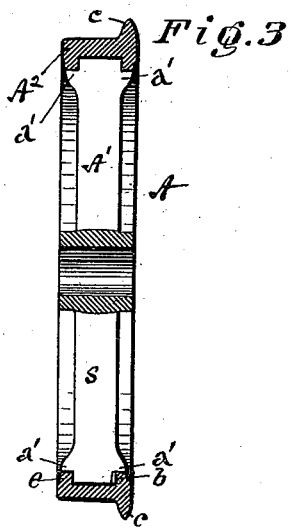


Fig. 4

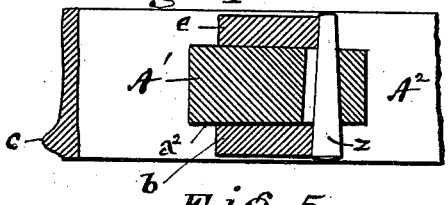


Fig. 7

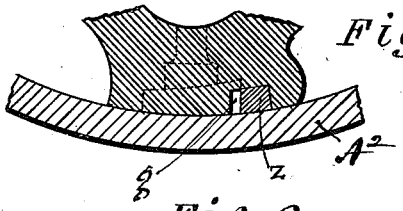


Fig. 5

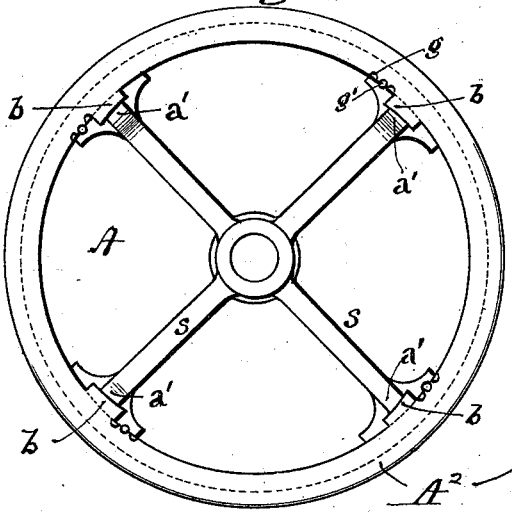
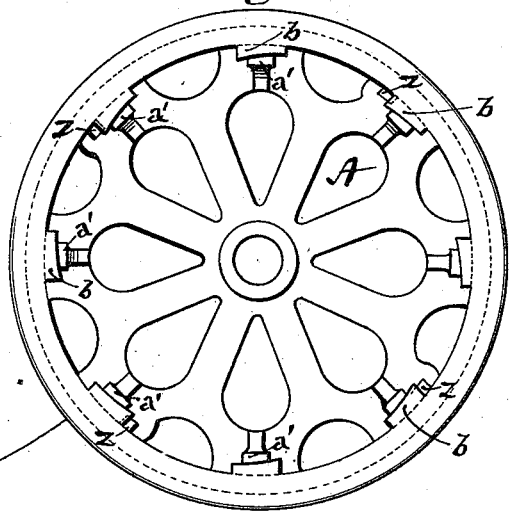


Fig. 6



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Inventor
William S. Kisinger
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UNITED STATES PATENT OFFICE.

WILLIAM S. KISINGER, OF DAYTON, KENTUCKY, ASSIGNOR OF TWO-THIRDS TO H. G. STIEBEL, JR., OF CINCINNATI, OHIO, AND A. C. STIEBEL, OF ST. LOUIS, MISSOURI.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 418,727, dated January 7, 1890.

Application filed July 15, 1889. Serial No. 317,635. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. KISINGER, a citizen of the United States, residing at Dayton, Campbell county, Kentucky, have invented new and useful Improvements in Car-Wheels, &c., of which the following is a specification.

My invention relates to car-wheels, gear-wheels, pulleys, &c., involving rims or surfaces subject to wear, and which it would be desirable to replace when worn without the cost and labor of replacing or renewing the entire wheel; and it consists in a construction of such wheels whereby a cheap and effective wheel made up of interlocking parts is produced, the wearing-rim of which can be renewed from time to time without detaching the hub portion of the axle.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the hub portion detached; Fig. 2, a similar view of the rim portion detached; Fig. 3, an axial section of the complete wheel, taken through the holding-lugs, showing the relation of the two parts in position; Fig. 4, a chord section of a portion of the rim through the spoke and holding-lugs, showing the relation of the spoke, lugs, and retaining-wedge; Fig. 5, a side elevation of the wheel complete, showing a modification of the holding device; Fig. 6, a side elevation of the wheel complete, showing a disk-center in lieu of the separate spokes; and Fig. 7, a section through part of the disk and rim, showing the relation of parts.

Referring now to the drawings, the wheel A is composed of two parts—to wit, a central hub portion or spider A′ and a separate detachable rim or annulus A^2. The spokes *s* are cast with terminal arcs, forming equal parts of an entire circle corresponding with and fitting the inner surface of the outer rim or annulus A^2, and these two contact-surfaces may be slightly coned to insure a driving fit, though this is not regarded as essential. At the front and rear of each spoke are cast projecting brackets *a′*, having their outer radial faces correspondingly eccentric. Above the brackets *a′* the front edge of the spoke is slightly inclined spirally, as at a^2. The rim or annulus A^2 is cast with a proper exterior contour for the ultimate use of the wheel—that is to say, it is grooved, cogged, or flanged to form a belt-pulley, a cog-wheel, car-wheel, &c., as required. In the present illustration it is provided with a bearing-tread and flange *c* to serve as a car-wheel upon a guiding-track. The inner surface of the annulus A^2 is provided with a series of concentric lugs *b*, slightly eccentric upon their faces, as indicated in Fig. 2, and inclined spirally upon one adjacent side, as indicated in Fig. 4. A corresponding series of eccentric lugs *e* is arranged in a line parallel with the series of lugs *b*, having the function of abutments for the rear edges of the spokes when in position as a holding-abutment against lateral strains.

In placing the two parts A′ A^2 together the hub portion A′ is inserted sidewise in the annulus, the ends of the spokes passing between each two adjacent pairs of lugs *b c*, and then, by rotating the hub portion in the proper direction in relation to the rim, the inclined eccentric faces of the lugs *b e* bear against the corresponding eccentric faces of the brackets *a′*, thus centering the hub portion in the annulus and securing the same radially. At the same time the spirally-inclined inner sides of the lugs *b* bear against the spirally-inclined front edges a^2 of the spokes and force the spokes back against the rear abutment-lugs *e*, thus securing the spokes edgewise between the two sets of lugs and bringing the rim to a true gage in relation to the spokes and hub. The parts being driven home to a firm contact upon the described seats, it will be seen, Fig. 3, that any side strains upon the flange *c*—such as are experienced in side lurching of cars or in passing curves—are taken by the abutment-lugs *e* in contact with the spoke system, while strains in the opposite direction are taken by the sides of the lugs *b* in contact with the front edges of the spokes. The weight of the car upon the axle is taken by the radial contact of the spokes against the inner surfaces of the annular rim A and upon the contact-faces of the brackets *a′* and lugs *b*, &c.

Any suitable means for securing the two parts A′ A^2 together may be employed; but as a simple, effective, and economical construction for this purpose we form in the castings one or more shallow grooves or re-

cesses g across the outer faces of the spokes s, parallel to the axis, in proper relation to a pair of the lugs b e when the parts are in position, Figs. 4 and 7. When the spokes are driven home, a wedge or key z is driven into the groove or recess g, which bears against and behind the adjacent lugs b e, which effectually prevents the slipping back of the parts, and the wedge or wedges may be held by a pin, if required. In lieu of wedges pin g', Fig. 5, may be driven into a groove formed by corresponding half-grooves formed, as described, upon the corresponding inner face of the annulus A^2 and the outer periphery of the spokes and registering when the parts are driven home.

Instead of spokes, the central or hub portion of the wheel may be formed as a disk with suitable openings, the construction and fitting together being otherwise the same.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. The combination, in a two-part wheel or pulley, of a rim having two parallel series of lugs upon its inner side with concentric faces, and a hub portion having spokes or projections adapted to pass laterally between consecutive lugs of the rim and by partial rotation of the parts engage between adjacent opposite lugs, said spokes being provided at one or both sides with brackets or lugs having eccentric surfaces adapted to engage radially by frictional contact with the eccentric or inclined surfaces of the rim-lugs, substantially as set forth.

2. A wheel—such as a pulley, cog-wheel, car-wheel, &c.—composed of two interlocking sections—to wit, a central spider or hub section and an outer rim or annulus—said sections constructed as follows: (*a*) the rim having on its inner surface two parallel series of circumferential lugs having eccentric faces and one series having spirally-inclined inner sides, and (*b*) the central or hub section having at both sides a series of radial brackets with eccentric arc-faces to match and engage with the lugs of the rim and with spirally-inclined front surfaces at one side above the brackets to engage the sides of one series of lugs upon the rim and force the hub portion against the rear system of lugs and hold it laterally between the two systems of lugs against lateral displacement, substantially as set forth.

3. The combination, in a two-part wheel or pulley, of a rim having two parallel series of lugs upon its inner side and one or more backing-lugs, and a hub portion having spokes adapted to pass laterally between consecutive lugs of the rim and by partial rotation engage between and upon adjacent opposite lugs by means of bracket projections and be held by frictional contact of eccentric surfaces, and a wedge adapted to pass and engage between a spoke and backing-lug, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM S. KISINGER.

Witnesses:
L. M. HOSEA,
ELLA HOSEA.