(No Model.)

# G. W. MILLER.

## CAR WHEEL.

No. 475,018. Patented May 17, 1892.

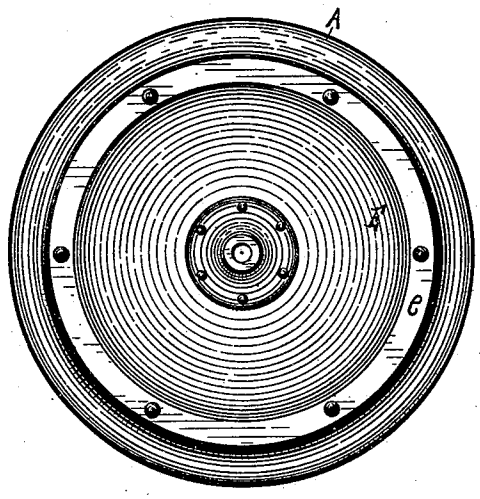


Fig. 1.

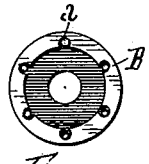


Fig. 2.

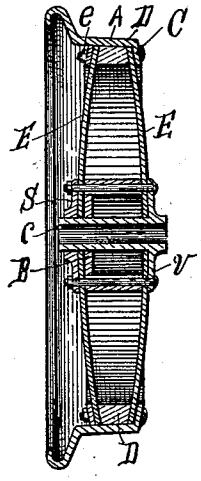


Fig. 3

Witnesses
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Geo. W. Miller Inventor
By his Attorney Lucius C West

# UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF KALAMAZOO, MICHIGAN.

## CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 475,018, dated May 17, 1892.

Application filed February 12, 1892. Serial No. 421,275. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. MILLER, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Car-Wheel, of which the following is a specification.

This invention relates to that class of car-wheels in which separated disks are employed between the rim and the hub; and it has for its object to simplify and cheapen the construction and at the same time make as strong and desirable a wheel as has been heretofore produced at greater expense.

In the drawings, forming a part of this specification, Figure 1 is a side elevation looking from a point at the left of Fig. 3. Fig. 2 is an end view of a detail in Fig. 3, looking from a point at the right; and Fig. 3, is a sectional elevation on a transverse line in Fig. 1, which line would intercept the axis.

Referring to the lettered parts of the drawings, A illustrates the ordinary rim employed in the construction of wheels of this class. The outer edge of this rim A is turned down at right angles to the periphery of the tread part of the wheel, as shown at C, so that said turned-down portion, which is integral with the tread part of the rim A, shall take the place of the ordinary supplemental ring employed in the construction of this kind of wheels.

At E E are two separated disks performing the same function in a wheel that spokes would. The outer edges of these disks E E are separated by a wooden ring D, as shown in Fig. 3. Against the outer edge of the inner disk is placed a ring *e*. These two disks and its separating-ring D are bolted together and also bolted to the integral flange C by bolts, as clearly shown in Fig. 3. Between these disks E E at the center is a cup-shaped casting B, said casting having a central hole through its closed end, as shown in Fig. 2, through which hole is passed a tubular extension *c* of a cap or washer *v*, which cap or washer fits against the disk on the outside of the wheel, said cap and tubular extension being integral with each other, it being understood, of course, that when in use the axle of the car or velocipede is inserted in said tubular extension *c*, no axle being here shown. Against the inner disk, at the center and fitting onto the end of said tubular extension *c*, is a cap or washer S. This cap or washer S is driven onto the end of the tubular extension *c* with a tight fit, thus obviating any necessity for said fitting parts to be screw-threaded or keyed. Through these caps or washers *v* S are passed bolts, which bolts pass through the cup-shaped casting B. This cup-shaped casting B is provided with internal open grooves *a*, through which grooves the bolts which bind the caps and disks together are passed. These open grooves *a* may be employed or not, as desired; but it is deemed that by their use the wheel is stronger against strains upon the rim, and another advantage is found when putting the wheel together, from the fact that they form guides for the bolts, or rather assist the workman in locating the hole in the cap opposite to that one through which he first inserts the bolt. In connection with these separated disks and the wheel-rim with its integral flange at the outside may be employed any suitable hub.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A wheel-rim provided with the integral flange at the outside, in combination with the two separated disks, the ring which separates said disks, and a suitable hub, substantially as set forth.

2. The combination of the rim, the separated disks, the cup-shaped casting between the disks at the center, the cap or washer having the integral tubular projection passing through the disks and central casting, the cap or washer tightly fitting on the end of said tubular extension, and the binding-bolts, substantially as set forth.

3. The combination of the rim, the separated disks, the cup-shaped casting between the disks at the center, said cup-shaped casting being provided with the open grooves in its interior periphery, the cap or washer having the

tubular projection passing through the disks and central casting, the cap or washer tightly fitting on the end of said tubular extension, and the binding-bolts passing through the open grooves in said cup-like casting, substantially as set forth.

In testimony to the foregoing I have hereunto subscribed my name in the presence of two witnesses.

GEORGE W. MILLER.

Witnesses:
J. REIDSEMA, Sr.,
H. Y. HAINES.