(No Model.)

G. W. MILLER.

CAR WHEEL.

No. 363,839. Patented May 31, 1887.

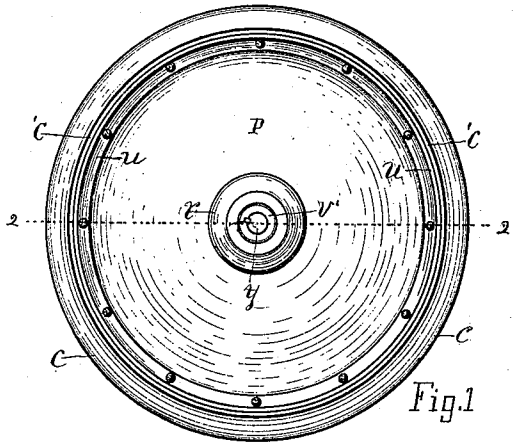


Fig. 1

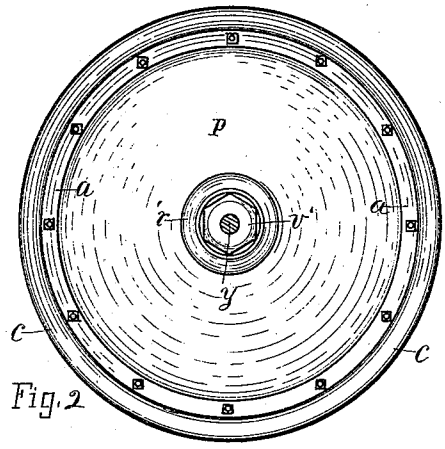
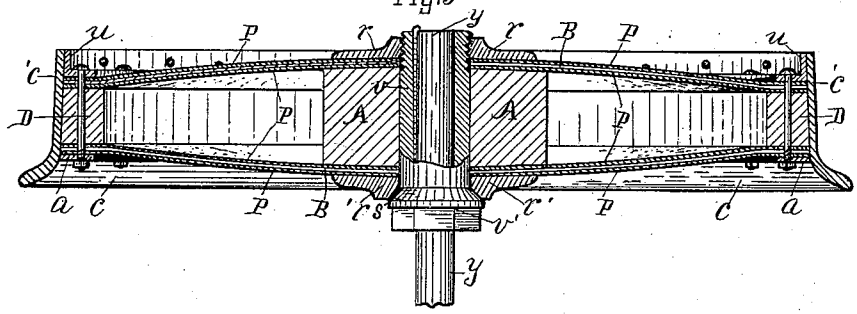


Fig. 2

Fig. 3



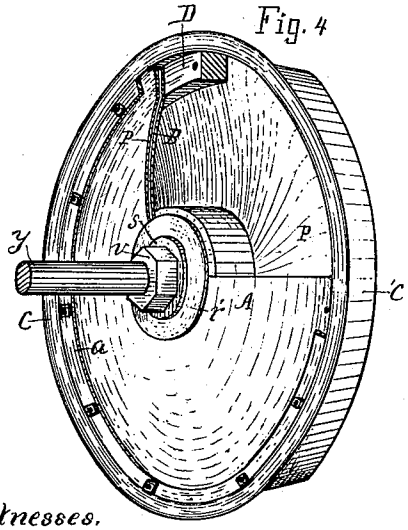
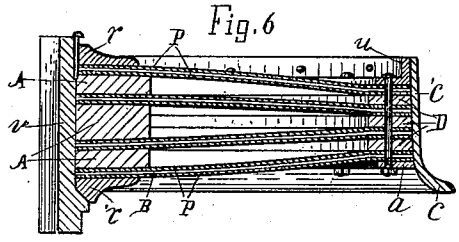


Fig. 4

Fig. 6



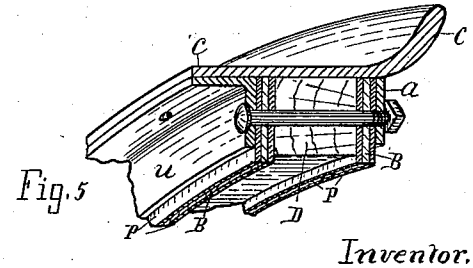


Fig. 5

Witnesses.

John C. Perkins.

Henry S. M. Howard.

Inventor.

Geo. W. Miller.

By Lucius C. West

atty.

UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF KALAMAZOO, MICHIGAN.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 363,839, dated May 31, 1887.

Application filed December 27, 1886. Serial No. 222,678. (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 car-wheels in the construction of which separated disks are employed.

It has for its object certain improvements, substantially as below described and claimed.

In the drawings forming a part of this specification, Figure 1 is an elevation of the wheel, looking against the end of the axle; Fig. 2, the opposite side of the wheel with the axle in cross-section; Fig. 3, a section on line 2 2 in Fig. 1, enlarged; Fig. 4, a perspective view, portions being broken away; Fig. 5, lettered details in enlarged perspective, and Fig. 6 shows about one-half of Fig. 3 with an additional number of disks.

The wheel-rim *c'*, with flange *c*, the outer and inner rings, D A, between the disks, the stop *u*, right-angled in cross-section, and the ring *a* and clamping-bolts are similar to parts in a pending application, filed by me September 17, 1886, Serial No. 213,776, allowed November 19, 1886. The construction and arrangement of these parts will be readily understood by reference to the drawings, without further details of description. The separated disks in said pending application were disclosed as being composed of compressed paper or paper-pulp.

In the present instance I employ layers of compressed paper or paper-pulp alternating with layers of wood. The layers of paper are shown at P and the wood at B. The number and order of the layers P B here shown may be varied according to the needs required. These layers are pressed together, and held by a suitable adhesive substance between them. I find in certain instances such disks, in the relation of parts here shown in a car-wheel, are preferable to compressed paper alone, owing to strength and less liability of shrinking and warping under atmospheric influences.

In my other wheel the clamping-nut was on the outside of the wheel and extended out unduly. In the present instance I convert the washer *r* into a threaded burr, into which the threaded end of the hub *v* is screwed. The hub *v* is provided with a beveled-head, *s*, and wrench-seat *v'* integral therewith. The bevel of the head *s* fits into the internal bevel of the washer *r'*, Figs. 3 and 6.

By placing a wrench on the seat *v'* the hub *v* is turned (its threaded end screwing into the washer *r*, as before stated) until the head *s* firmly engages the washer *r'*. Thus the separated disks, the ring A, and washers *r' r* are clamped together. The hub *v* may or may not be keyed on the axle *y*.

Having thus described my invention, what I claim is—

1. A car-wheel having the separated disks between the rim and hub composed of alternating layers of wood and paper, substantially as set forth.

2. In a car-wheel, the combination of separated disks, separating-ring between the disks, the threaded washer on one side and the beveled washer on the other side, and a hub, one end threaded and the other end provided with the integral beveled head and wrench-seat, substantially as set forth.

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

GEO. W. MILLER.

Witnesses:

EDWARD VROEGINDERING,

CHARLES SCHAU.