

(No Model.)

B. RUSHMER & G. A. JOYCE.

VEHICLE WHEEL.

No. 325,278.

Patented Sept. 1, 1885.

Fig. 1

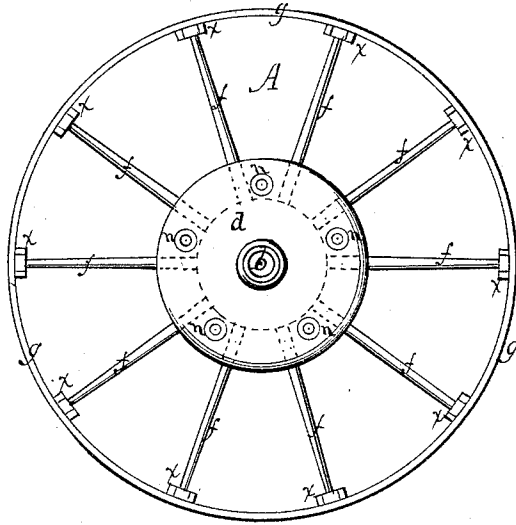


Fig. 3

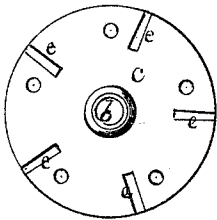


Fig. 4

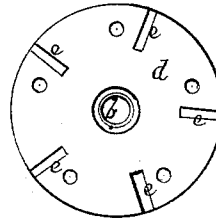
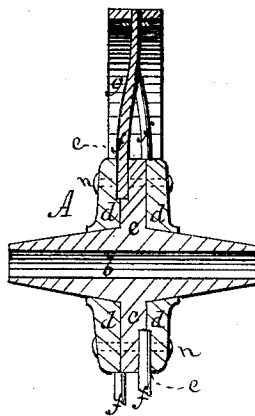


Fig. 2



Witnesses.

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UNITED STATES PATENT OFFICE.

BENJAMIN RUSHMER AND GEORGE A. JOYCE, OF COLUMBUS, OHIO.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 325,278, dated September 1, 1885.

Application filed October 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN RUSHMER and GEORGE A. JOYCE, citizens of the United States of America, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention is an improved wheel, more especially adapted to barrows or trucks, and embraces the following peculiar features: A disk or web forming a solid part of and perpendicularly projecting from the middle of the metallic hub; also, a counter-pair of corresponding metallic circular flanges furnished with central or axial holes and suitable nut-bolts, so as to closely fit over the hub and be tightly clamped against the sides of said disk; also, an equal number of round holes, at equal distances apart, bored jointly into the peripheries of both the disk and flanges, so as to make in each an alternate series of counter half cylinders or sockets of equal depth, in which to step and fasten the butts of the metallic spokes; also, said spokes, having their alternate butts thus stepped and clamped on opposite sides of said disk, inclined or staggered inward to an even central line within the circumference of the wheel tire or rim, and having their outer ends or tips furnished each with a screw-thread and jam-nut, by which to screw outward and tighten the spokes against the inside of the tire; and, finally, a metallic tire or rim suitably pierced with holes, in which to fittingly joint the said sliding and radial spoke-tips, all of which and their purposes are hereinafter more fully described, and illustrated by the accompanying drawings, in which the same letters designate identical parts of our invention in the different figures respectively.

Figure 1 illustrates a side elevation of our wheel, showing the butts of alternate spokes in dotted lines, clamped in place by one of a pair of said flanges, and the tips of said spokes tightened by the jam-nuts against the inside of said encircling-tire. Fig. 2 illustrates a vertical cross-section of said wheel, showing the clamping of the spoke-butts by said nut-bolts between said flanges and the hub-disk on either side, and the inclination or stagger-

ing of the spoke-tips to the median line of the tire. Fig. 3 illustrates a front view of one of the outer sides of said hub-disk, showing the half-hollows of said spoke-butt sockets and the clamping-bolt holes; and Fig. 4 illustrates a front view of an inside face of one of a pair of said counter-flanges, showing the corresponding half-hollows of said sockets, counter to the same in the adjoining hub-disk counter-face, and the center hole to fit over its end of the axle-sleeve of the wheel-hub.

The letter A represents said wheel, in which *b* represents the axle-sleeve of said hub; *c*, the said hub disk or web; *d*, the said pairs of counter-flanges; *e*, the sockets of said spoke-butts; *f*, the said spokes; *g*, the said wheel-tire; *n*, the flange-clamping nut-bolts, and *x* the spoke-tightening jam-nuts.

The whole of the wheel A is made of metal, the hub portion, consisting of said disk and axle-sleeve, being of cast-iron and of suitable dimensions and shape, as shown, the flanges, as shown, to be of malleable iron, and the spokes and tire to be of wrought-iron.

The hub disk or web *c* has both of its vertical faces turned or planed perfectly smooth and true, so as to have the correspondingly-made inner faces of said flanges *d* fittingly joined and clamped to them by the nut-bolts *n*, after being fittingly adjusted upon the hub-sleeve *b*, as shown. Said disk, together with said circular flanges, have suitable holes bored into their joined peripheries at equal distances apart and of equal depth, so as to make in the outer faces of said disk and the inner faces of said flanges an alternate series of corresponding radial half-hollows, which, when clamped together by said nut-bolts *n*, form the sockets *e*, which serve to hold the butt-ends of the spokes *f*, as shown. Said spokes are made of suitable dimensions and shape, and have their butt-ends thus stepped and clamped alternately into the opposite sides of said disk *c*, as shown, after having their tip ends suitably staggered or inclined, and fitted into their respective socket-holes made in the median line of the perimeter of the tire *g*. Said spokes have their ends below their tips suitably screw-threaded, and are provided with the suitably-made jam-nuts *x*, which, being previously screwed upon said spokes for a suitable distance below their tip ends, are

again screwed outward, after said tips and butts of the spokes have been fitted into their respective smooth-bored sockets in the hub and tire, in order to effectively tighten the
 5 combined radial projective resistance of said spokes against the centripetal tendency of said tire.

The useful effects of the above combination are to make a very strong and light wheel,
 10 with its parts ready to be easily and quickly fitted and adjusted together; also, whenever any of said parts become loosened or unjointed, to make them readily readjustable and useful; and, finally, should any of said parts become
 15 broken or worn, to make them readily, conveniently, and economically interchangeable and renewable; therefore,

What we claim as new, and desire to secure by Letters Patent, is—

20 1. In the wheel A, herein described, the combination of the axle-sleeve *b*, having the

vertically - intermedial web-disk *c*, and the clamping-disk flanges *d*, provided each with the coradial half-sockets *e*, and the nut-bolts
 25 *n*, with the rim *g*, having smooth spoke-sockets, and the spokes *f*, provided with the jam-nuts *x*, all made and adjusted substantially as and for the purposes herein specified.

2. In the wheel herein described, the combination of the spokes having jam-nuts with
 30 the smooth spoke-sockets of the wheel-rim and the clamp-sockets of the wheel-hub, substantially as and for the purposes herein specified.

In testimony whereof we affix our signatures in presence of two witnesses.

BENJAMIN RUSHMER.
 GEORGE A. JOYCE.

Witnesses:

CASIMER FORTENBACHER,
 WILLIAM R. SWOISH.