

M. J. & P. P. ADAMS.
WHEEL.

APPLICATION FILED OCT. 27, 1909.

982,455.

Patented Jan. 24, 1911.

3 SHEETS-SHEET 1.

FIG. 1.

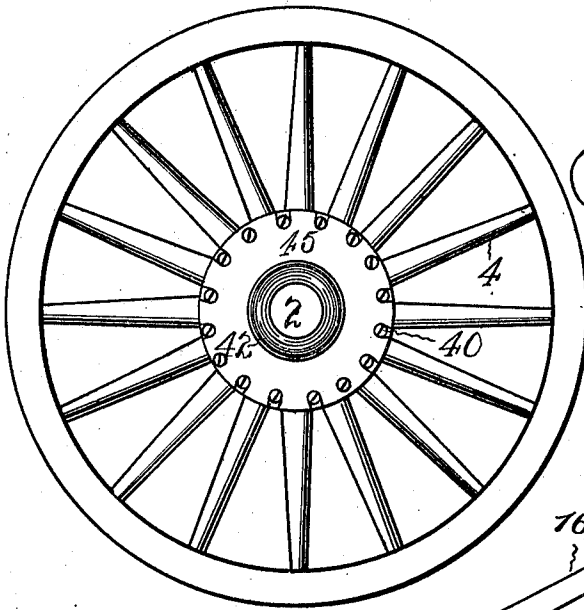


FIG. 2.

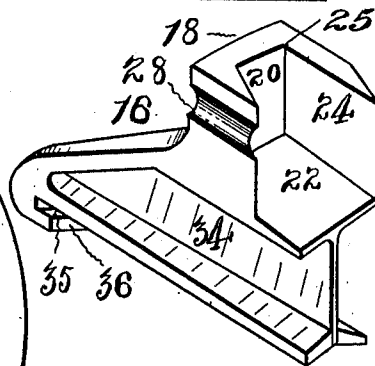


FIG. 3.

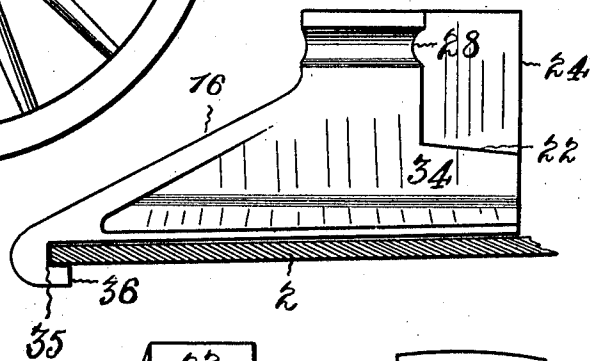


FIG. 5.

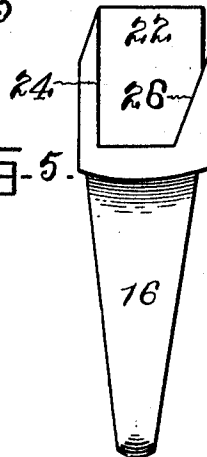
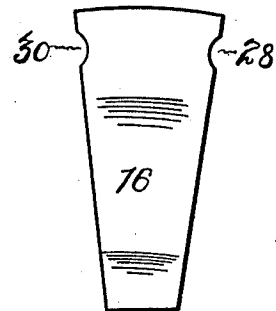


FIG. 4.



Witnesses
E. M. Noonan.
O. M. Frick

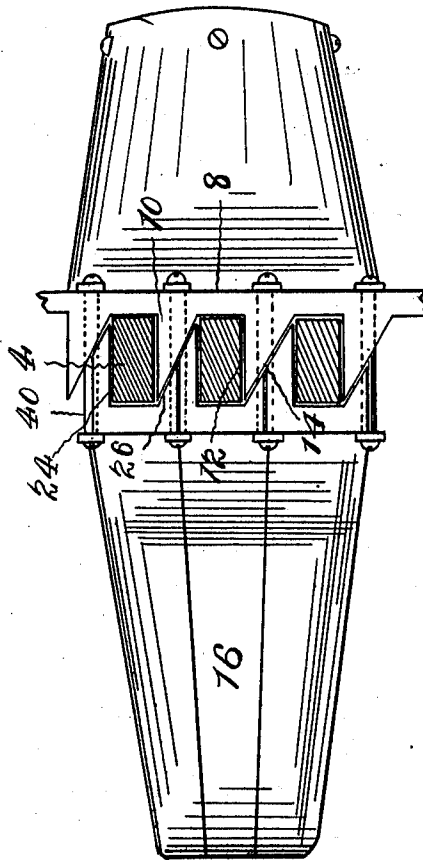
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UNITED STATES PATENT OFFICE.

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WHEEL.

982,455.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed October 27, 1909. Serial No. 524,976.

To all whom it may concern:

Be it known that we, MATTHIAS J. ADAMS and PETER P. ADAMS, citizens of the United States, residing at Turkey River, in the county of Clayton and State of Iowa, have invented certain new and useful Improvements in Wheels, of which the following is a specification.

Our invention is an improvement upon the invention set out in Letters Patent for wheels granted and issued to us on the 30th day of March, 1909, and numbered 916,402.

In what our present invention consists and in what it is differentiated from the aforesaid patent will be shown and described in the following specification and drawings and pointed out in the claims.

Figure 1 is an end elevation of the completed wheel. Fig. 2 is a perspective view of one of the locking blocks. Fig. 3 is a side view of Fig. 2 and a longitudinal section of the hub with part cut away showing the engagement of one of the locking blocks with the hub. Fig. 4 is a front end view of Fig. 2. Fig. 5 is a top view of one of the locking blocks. Fig. 6 is a perspective view of a part of the hub with one block in position and sustaining a spoke. Fig. 7 is a longitudinal section through the hub showing sides of blocks. Fig. 8 is a plan view of three spokes set in the blocks and hub with cap removed.

Like characters of reference denote corresponding parts in each figure.

Referring to the drawings, 2 denotes the hub, 4 the spokes. The hub is composed of a body 6 in which is located the axle box 5. The body near one end is surrounded with a flange or plate 8 preferably formed integral with the body. There is also formed on one side of the plate or flange wedges 10 of practically right angle, triangular shape, one for each spoke 4 having the base of the wedges connected to the face of the flange, and their edges projecting out therefrom with the plane of one face 12 of the wedge in substantially a right angle to the plane of the flange 8 and the other at an acute angle thereto, and an opening 11 entering the face 14 and extending through the wedge and flange 8. The opposite end or face of the hub is composed of locking blocks 16, shown in Figs. 3, 4, 5 and 6, and each block

consists of a body 18 recessed with the bottom 22 of said recess slightly inclined upward from the inner end. One side 24 of the recess forms with the side 20 a right angle at 25 and extends to the inner end of the block. The outside of the side 24 is wedge shape at 27. By this construction there is formed a wedge on both sides of each locking block. The other side 26 of the recess is of a wedge shape, somewhat shorter and its face is at an obtuse angle to the side 20. There is also a half circular shaped groove 28 on the outside, extending its entire length and a similar groove 30 is also formed in the outside of the side 24. In each side near the bottom is an angular recess 34, and at the bottom of the block near the outer end is a rectangular groove 35 one side of which forms a hook 36, which hooks engage the end of the hub. These blocks 16 when assembled and in position form one end of the hub. The spokes to be used are preferably of rectangular shape where they enter the hub, and the base slightly beveled to correspond with the inclined bottom 22 of the recess.

For the purpose of more rigidly holding the blocks in engagement with the hub and for preventing moisture and dust from working between the blocks, as well as presenting a smooth and finished surface there is provided a cap 42 having an opening 44 which registers with the opening through the axle box. It is also provided with a flange 45 that covers the face of the blocks and has also openings of the size of the heads of the bolts 40 with the exception of preferably four of the openings that are of the size of the body of the bolts 40, through which the cap is rigidly bolted to the face of the blocks by said bolts 40.

The manner of assembling and operating this device is substantially as follows. The spoke 4 is placed in the space between two of the wedges 10 and one edge brought to contact with the plate 8 and one of the sides 12. Then the spoke is raised up sufficiently to permit the base of the spoke to rest upon the bottom 22 of the recessed portion of the block. Then the bolts 40 are inserted in the grooves 28 and 30 and passing into the openings 11 through the wedge 10 in the face 14 and also through the plate 8, and drawn up

forcing the block beneath the spoke and raising the spoke till its tenon engages the mortise in the felly. When the bolts are drawn up the face 26 of the block 16 being
 5 at an angle and engaging the acute angular side 14 of the wedge will draw the side 24 and the end 20 of the block against the spoke and force the spoke against the flange 8 and the side 12 of the wedge 10, whereby the
 10 spokes will be rigidly held between the blocks, the flange and the wedges, and at the same time the hook 36 engages the end of the body of the hub. In this manner each of the spokes are set upon the block and
 15 when all of the spokes are set, then one end of the hub or one side of the hub will present an appearance of the side of the flange 8 and the other will be composed of the blocks 16, but will present the smooth outer
 20 surface of the cap 42.

It will be seen by this mode of construction that there will be a double tightening of the spokes in the felly due to the slanting base of the spoke and the slanting base 22
 25 and the other lateral grasping of the spoke by the engagement of the angular side 26 of the block with the angular side 14 of the wedge, and if the spoke becomes dried or shrinks all that will be necessary is to
 30 tighten the bolts 40.

If a spoke becomes broken then all that is necessary to do is to loosen the bolts 40 on opposite sides of a block and first remove the cap and then the block and with it the
 35 broken spoke, and then replace the same as before.

Having now described our invention what we claim is:—

1. In a wheel, a felly, spokes, a hub having
 40 a body and a flange, a wedge one for each spoke secured at its base to the flange, an individual block for each spoke, and each of said blocks provided with a plurality of wedges and means for forcing the blocks
 45 into engagement with the wedges around the spokes to hold the spokes between the blocks, the flange and the wedge.

2. In a wheel, a felly, spokes, a hub having a body, a flange integral with the body,
 50 a wedge one for each spoke secured at its base to the flange and having one face of the wedge in a plane at substantially right angles at the plane of the flange, a block one for each spoke provided with a recess, said
 55 block formed into a wedge on opposite sides of said recess and means for forcing the blocks with the spokes in the recess into engagement with the wedges on the flange to hold the spokes between the blocks, the
 60 wedges and the flange.

3. In a wheel, a felly, spokes, a hub provided with a flange near one end, right angle triangular wedges one for each spoke secured at their base to the flange of the hub,

blocks one for each spoke and each provided with a recess for holding a spoke and said recess having one side of wedge shape adapted to engage a side of a wedge on the flange, and means for forcing the wedges of the blocks with the spokes in the recesses in
 65 the blocks into engagement with the wedges on the flange and hold the spokes between the blocks, the flange and wedges and in engagement with the felly.

4. In a wheel, a felly, spokes having one
 75 end beveled, a hub having a body and a flange integral with the body, a wedge one for each spoke secured at its base to the flange and having one face of each wedge in a plane substantially at right angles to the
 80 plane of the flange, a block one for each spoke adapted to engage one end of the body of the hub and provided with a recess the base of which is at an angle to correspond with the bevel of the spoke, a wedge formed
 85 on each of the two opposite sides of the block and means for forcing the blocks with the spokes in the recess into engagement with the wedges on the flange to hold the spokes between the blocks, the wedges and
 90 the flange.

5. In a wheel, a felly, spokes, a hub having a body, a flange near one end integral with the body, wedges secured to the flange and having one face of each wedge in a
 95 plane at substantially right angles to the plane of the flange, a block one for each spoke adapted to engage one end of the hub and provided with a recess having two of its sides at right angles to each other, and the
 100 other side at a different angle, said block formed into a wedge on two of its opposite sides and means for forcing the blocks into engagement with the wedges on the hub and hold the spokes between the blocks, the
 105 flange and wedges.

6. In a wheel, a felly, spokes, a hub having a body and a flange, a wedge for each spoke secured at its base to the flange, an individual block for each spoke provided
 110 with a wedge on opposite sides of the block and adapted to engage the end of the body of the hub, means for bringing the blocks into engagement with the wedges around the spokes, and the wedges on the blocks into
 115 engagement with the wedges on the flange, and a cap secured to and covering the blocks.

7. In a wheel, a felly, spokes, a hub having a body and a flange near one end integral with the body, wedges secured to the flange
 120 and having one face of each wedge in a plane at right angles to the plane of the flange, a block one for each spoke, said blocks forming one end of the hub and each provided with a recess having two of its
 125 sides at right angles to each other and the other side at a different angle, a plurality of wedges on each of the blocks adapted to en-

gage the wedges on the flange, bolts for bringing the blocks into engagement with the wedges around the spokes, and a cap adapted to engage the ends of the body of the hub and secured to the blocks by the bolts that hold the blocks into engagement with the wedges.

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

MATTHIAS J. ADAMS.

PETER P. ADAMS.

Witnesses:

M. M. Cady,

E. M. Noonan.