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A. F. O'CONNOR
HAND WHEEL FOR BRAKES

1,720,142

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Fig. 1.

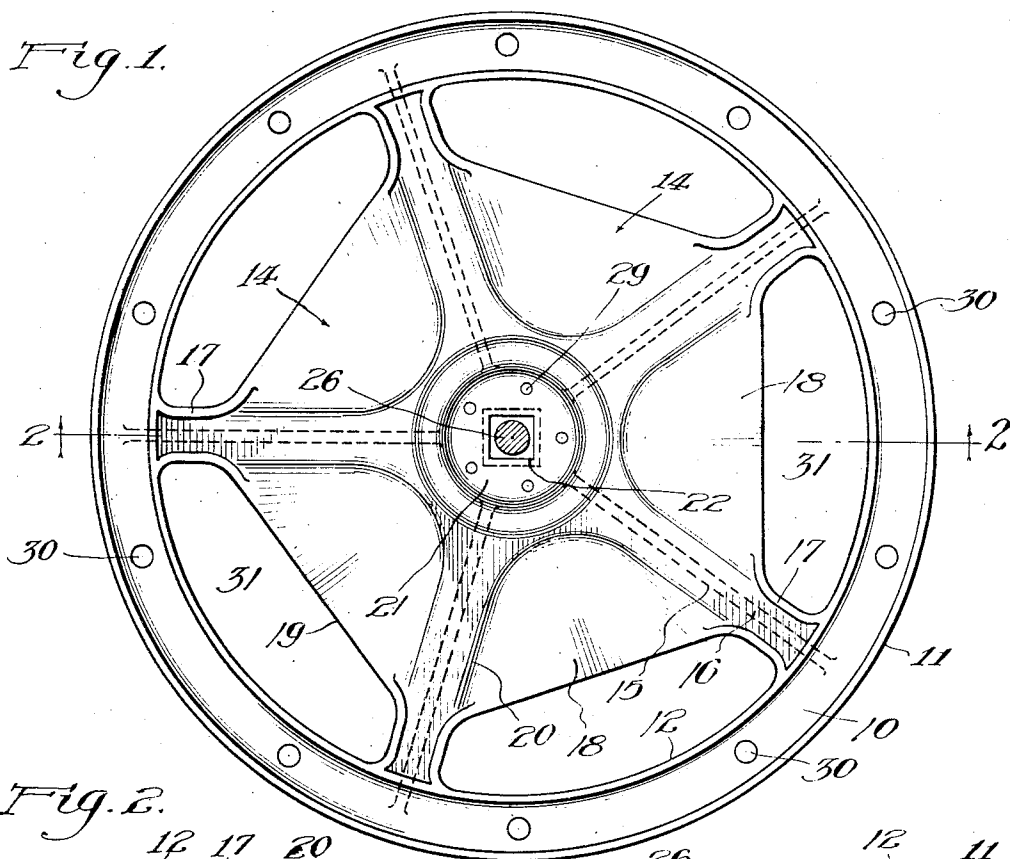


Fig. 2.

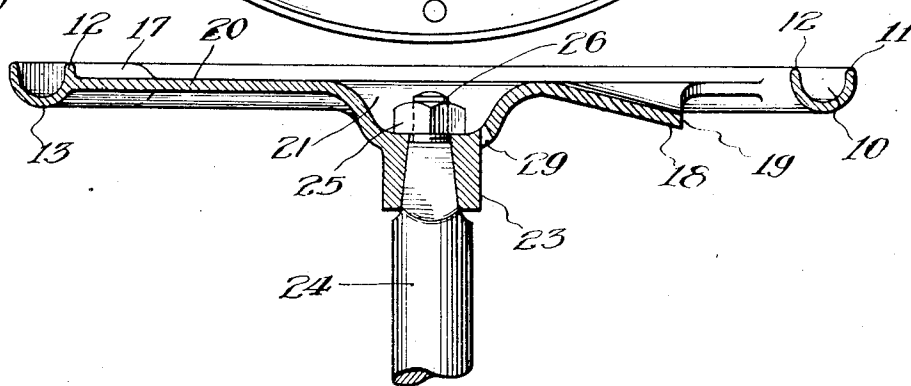
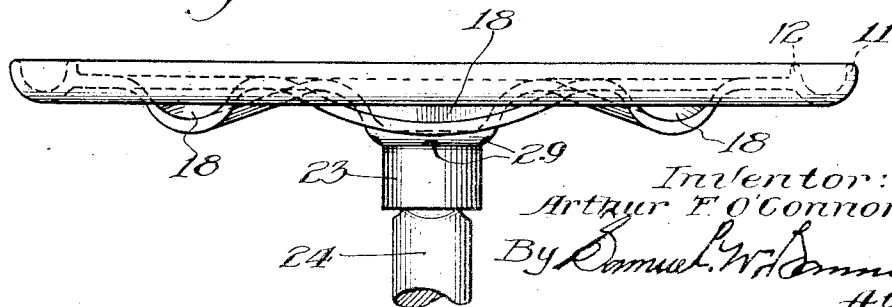


Fig. 3.



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HANDWHEEL FOR BRAKES.

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The wheel of the present invention is designed primarily to prevent a brakeman from inserting a bar or club into the wheel for the purpose of increasing leverage, since such practice is not desirable in hand brakes which embody a train of gears for affording sufficient power to set the brakes by hand under operating conditions. In these circumstances, the use of a club or bar to obtain additional leverage might result in breakage or wear due to a sliding of the wheels. At the same time, the present wheel is designed to afford a highly advantageous hand grip on the rim of the wheel, so that the brakeman will be enabled to apply all of the pressure necessary in the circumstances. The wheel, furthermore, is so designed that it can be integrally cast, and will at the same time afford the necessary elements of strength and durability without an undue weight of metal.

Further objects and details will appear from a description of the invention, in conjunction with the accompanying drawings, wherein—

Figure 1 is a plan view of the wheel;

Fig. 2 is a sectional elevation, taken on line 2—2 of Fig. 1; and

Fig. 3 is an edge elevation of the wheel.

The wheel comprises a rim 10 which is channeled on its upper face to afford a marginal flange 11 and an inner flange 12. The under surface 13 of the rim is rounded to accommodate the hand of the operator. As shown, the interior of the wheel is afforded by a polygonal web 14 (five-sided in the present instance), each corner 15 of which is extended to furnish a short connection 16 which merges into the inner wall of the rim and is reinforced by upstanding side flanges 17, the outer ends of which merge into the inner rim flange 12.

The web in the segments thereof, intervening between the corners, is outwardly and downwardly dished at 18 from the center to the edge portion 19, while the web, in radial alinement with the corner connections, remains plain along each ridge or crest 20, which ridges or crests, at their inner ends, dip downwardly into a dished center portion 21, provided in its center with a square aperture 22 which constitutes the upper terminus of a tapered bore in a hub 23, into which the upper tapered end of the brake shaft 24 is entered, a nut 25 on the threaded

tip end 26 serving to hold the parts united.

The web portion and the hub portion merge unbrokenly into one another; and the drain holes 29 in the dished center and 30 in the rim serve to prevent an accumulation of water.

The arrangement is one which affords openings 31 intermediate each of the connections 16, which openings are of sufficient extent to permit the brakeman's hand to rest easily around the rim with his fingers overlapping the upper surface thereof, so that a firm grip will be afforded which prevents slipping, and the hand openings are too restricted to permit the insertion of a bar or other means for increasing leverage.

The arrangement of the web affords a plurality of radiating ridges 20 with intervening dished connecting portions, which construction affords great rigidity and strength to the wheel and at the same time permits it to be formed of relatively thin stock. The corner connections unite with the rim in the medial plane thereof, and the provision of the upstanding flanges 17 which merge into the inner rim flange 12 affords a firm and rigid connection between the center web and the rim.

The dished arrangement in the center affords a suitable recess for the reception of the nut, which thus does not protrude above the level of the rim, and at the same time this dished arrangement affords adequate strength and rigidity at the point where the web merges into the hub, which in turn makes connection with the shaft.

The wheel as a whole is designed to afford strength and rigidity at least equal to that of disk wheels previously in use, with a reduction in the weight of metal, and at the same time ample provision is made for the gripping of the wheel by the hands of the operator.

I claim:

1. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polygonal web with adjacent portions of the rim, substantially as described.

2. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and

portions connecting the corners of the polygonal web with adjacent portions of the rim, the rim being channeled in its upper surface and rounded on its under surface, substantially as described.

3. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polygonal web with adjacent portions of the rim, the rim being channeled on its upper surface to afford inner and outer marginal flanges, and the web connecting portions being reinforced by upstanding flanges merging at their outer ends into the interior rim flange, substantially as described.

4. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polygonal web with adjacent portions of the rim, the rim being channeled on its upper surface to afford inner and outer marginal flanges, and the web connecting portions being reinforced by upstanding flanges merging at their outer ends into the interior rim flange, the web portion being dished downwardly in its center and merging into an apertured hub, substantially as described.

5. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polyg-

onal web with adjacent portions of the rim, the web portion being dished downwardly in its center and merging into an apertured hub, substantially as described.

6. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polygonal web with adjacent portions of the rim, the rim being channeled on its upper surface to afford inner and outer marginal flanges, and the web connecting portions being reinforced by upstanding flanges merging at their outer ends into the interior rim flange, the web portion being dished downwardly in its center and merging into an apertured hub, the rim and dished center portion being provided with drain holes, substantially as described.

7. A hand wheel for brakes, comprising a rim portion circular in contour and a web portion polygonal in contour to provide a series of hand holes adjacent the rim, and portions connecting the corners of the polygonal web with adjacent portions of the rim, the web portion being dished downwardly in its center and merging into an apertured hub, the rim and dished center portion being provided with drain holes, substantially as described.

In witness that I claim the foregoing I have hereunto subscribed my name this 10th day of February, 1928.

ARTHUR F. O'CONNOR.