

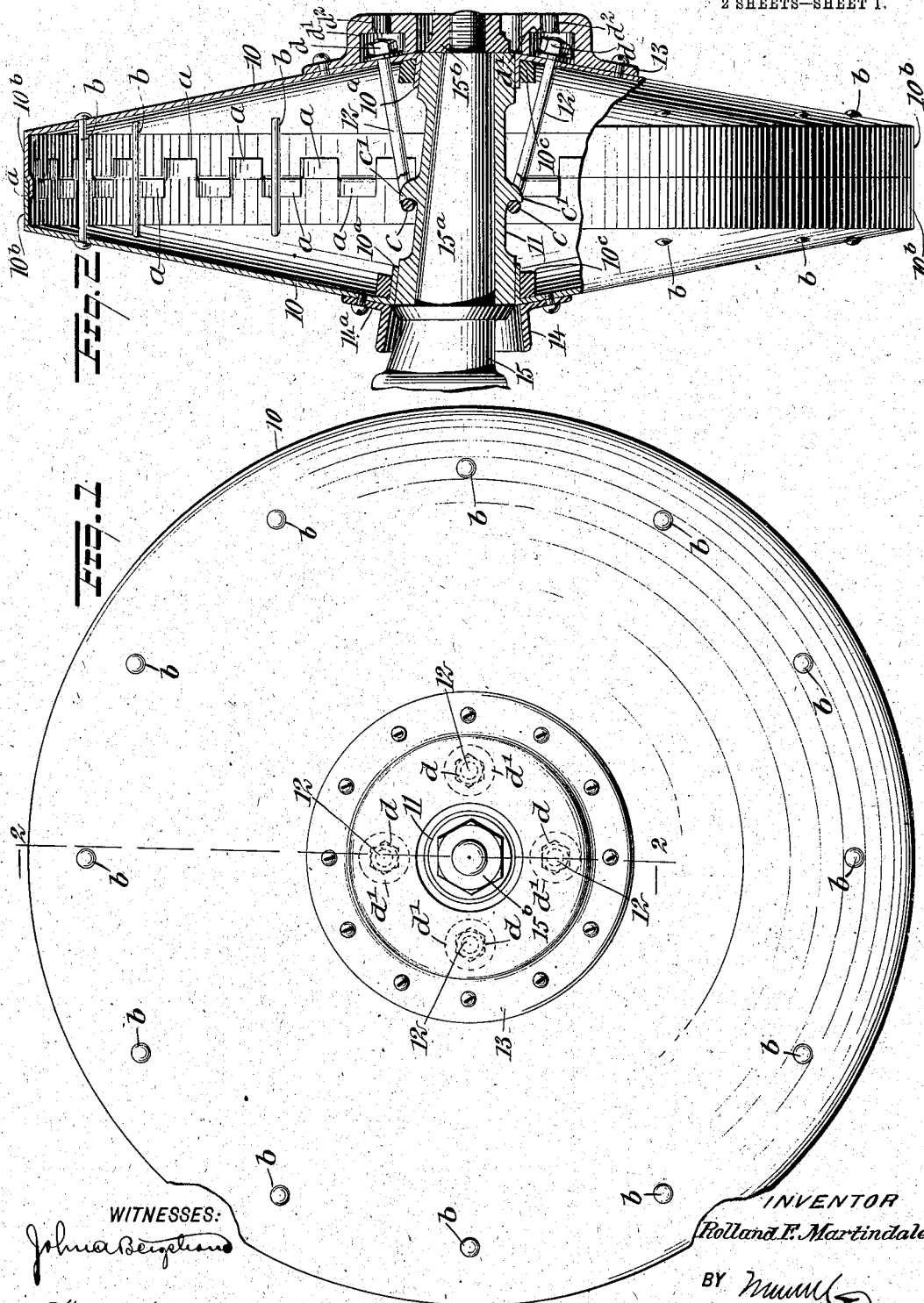
No. 815,611.

PATENTED MAR. 20, 1906.

R. F. MARTINDALE.
VEHICLE WHEEL.

APPLICATION FILED OCT. 3, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

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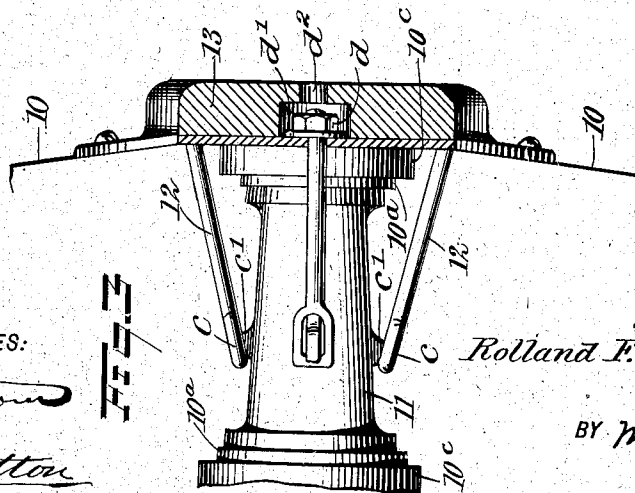
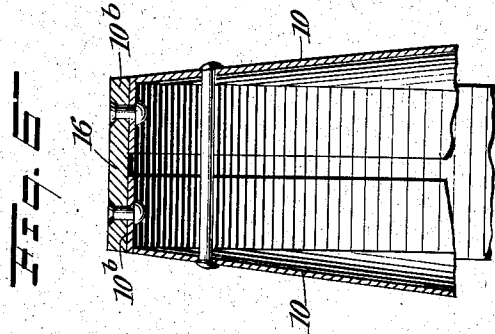
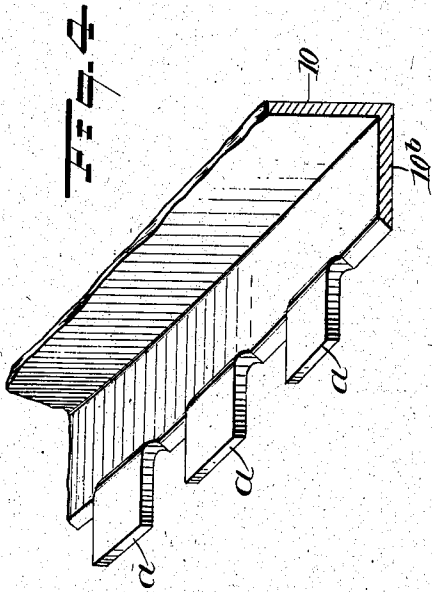
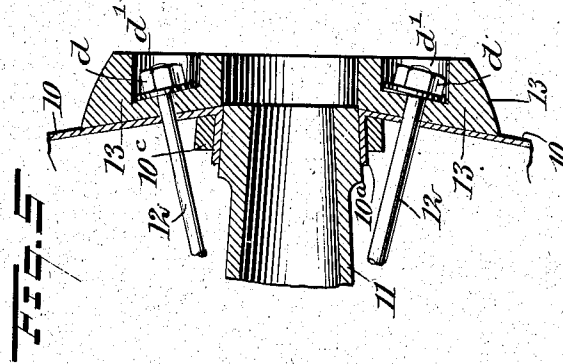
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UNITED STATES PATENT OFFICE.

ROLLAND FRANCIS MARTINDALE, OF MEMPHIS, TENNESSEE.

VEHICLE-WHEEL.

No. 815,611.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed October 3, 1905. Serial No. 281,106.

To all whom it may concern:

Be it known that I, ROLLAND FRANCIS MARTINDALE, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Vehicle-Wheel, of which the following is a full, clear, and exact description.

This invention relates to vehicle-wheels, and more particularly to such as are portions of draft-wagon running-gears.

The object of my invention is to provide a wagon-wheel that is very light, is durable, and exceedingly strong, is well adapted for convenient repair, is not liable to become clogged with clay or the like when the wagon is traversing muddy roads, and is manufactured of metal, and largely from plated metal cut and stamped into form, whereby it is adapted for rapid and perfect production at a low cost.

The invention consists in the novel construction and combination of parts, as hereinafter described, and defined in the subjoined claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of the improved vehicle-wheel. Fig. 2 is a central transverse sectional view substantially on the line 2 2 in Fig. 1, showing the interior construction of the main portion of the wheel. Fig. 3 is a fragmentary side view of details, showing means for holding the spindle sleeve or box detachably secured on the front wall of the wheel-body. Fig. 4 is an enlarged perspective view of a portion of the periphery and side wall of one section of the wheel-body. Fig. 5 is an enlarged sectional side view of parts shown in Fig. 3; and Fig. 6 is a transverse sectional view of a portion of the body of the improved wheel, showing a slightly-modified form of the two sections of the wheel-body, which adapt them for the reception of a tire shown secured therein.

In the drawings, 10 10 represent two similar body portions of the improved wheel, each consisting of a plate-metal disk that is dished a suitable degree, thus giving the same an essentially concavo-convex form in transverse section, as appears in Fig. 2. Each half-section 10 of the wheel-body is centrally apertured, and as a border for said aperture an in-

tegral flange 10^a is turned inwardly at an acute angle from the concave side thereof, the aperture in the disk forming the normally outer side wall of the wheel having its diameter reduced a suitable degree with relation to that in the other side wall that is innermost in service. There is a flange 10^b formed on the periphery of each half-section 10, which flanges are turned inwardly at an obtuse angle, and as these circular flanges have an equal diameter it will be seen that when they have proper engagement at their inner edges the outer surfaces of said flanges will coincide and form a true periphery or rim-surface for the wheel.

As shown in Figs. 2 and 4, the flanges 10^b are each formed with a series of tongues *a* by slitting the rim-flanges at suitable intervals from their inner edges, and said tongues on each rim 10^b are spaced apart a distance equal to the width of the tongues.

The tongues, as shown, are offset near their points of junction with the rim-flange 10^b they are formed on, so that they may be slid beneath intervening straight members, as is clearly shown in Fig. 2, thus adapting the rim-flanges at their tongues to have an interlocking engagement with each other and together form a practically continuous rim of double thickness where the tongues are positioned.

A thimble 11, preferably of cast metal, is provided as a hub-box for the wheel, and, as shown in Figs. 2 and 3, said thimble tapers a proper degree from the normally inner to the outer end thereof, having correspondingly-tapered bearings of increased diameter formed thereon at respective ends, which bearings fit closely into the openings defined by the inwardly-turned annular flanges 10^a.

The length of the thimble is so proportioned that when the wheel half-sections 10 are joined together the true ends of the thimble or box 11 will be disposed flush with the exterior surfaces of the plate-metal half-sections 10, as appears in Figs. 2 and 5.

Near the periphery of the two-part wheel-body there is a series of spaced perforations formed in pairs oppositely disposed therein which receive a corresponding number of rod-like clamping-bolts *b*, that are designed to hold the body-sections 10 drawn forcibly together, and to this end one projecting extremity of each bolt is headed and the other end after insertion is riveted, to facilitate which said ends may be heated.

A plurality of evenly-spaced tie-bolts 12 are employed for securing the thimble 11 in position within the flanges 10^a; said bolt preferably having hook-shaped heads *c* formed upon their inner ends, and upon the exterior of the thimble at a suitable distance from its ends lugs *c'* are formed thereon, which are engaged by said hooks. The tie-bolts are so proportioned in length that their remaining ends may be passed out through perforations in the half-section 10 of the body that is outermost in service. Each bolt end which projects through the body portion 10 is threaded, and a nut *d* is screwed thereon into forcible contact with the exterior surface of said body-section, thus drawing upon and holding the thimble in place.

To prevent a loosening of the nuts *d*, a hub-plate 13 is provided, this plate having an annular form, a central bore therein of slightly greater diameter than that of the adjacent end of the thimble 11, and also furnished with a series of cup-like recesses *d'*, which receive and loosely incase the nuts *d*. Furthermore, the nuts may be held from turning by pouring melted lead through perforations *d*² into said recesses around the nuts, as shown in Fig. 2, or into the open ends of said recesses. (Represented in Fig. 5.) Upon the flanges 10^a metal bands 10^c are shrunk, which render the flanges more rigid, reinforcing the hub portions of the wheel against shocks sustained thereby due to impact of the wheel-rim on the rough surface of a road-bed over which the wheel is moved in service.

Opposite the reinforcing-band 10^c on the inner flange 10^a a mud-guard in the form of a flanged ring 14 is mounted and secured upon the rear body-section 10 by means of rivets or screw-bolts which engage perforations in the flange 14^a of said ring and aligned perforations in the body-section mentioned, the mud-guard being held concentric with the thimble 11. The thimble is rendered true on the inner surface by reaming it with a suitable tapering tool or by other means, thus giving its inner wall a true coniform taper, which adapts it to serve as a box for the reception therein of a correspondingly-tapered body of an axle-spindle 15^a, which is a portion of a wagon-axle 15. Should the axle be formed of wood and the spindle also, the usual skein or metal bearing may be mounted upon and secured to the axle-spindle, thus providing a suitable bearing thereon, the spindle in this case being reduced in diameter proportionately. The outer end portion of the spindle 15^a is reduced in diameter and threaded for reception of a nut 15^b, which bears at its inner end upon the outer end of the thimble 11, as shown in Fig. 2, thus holding the spindle operatively engaged with the thimble.

In the wheel hereinbefore described the wheel is not provided with a separate tire, the material forming the flanges 10^b having a

thickness that adapts these connected flanges to afford a substantial rim for the wheel. When it is desirable to place a reinforcing-tire upon the wheel-rim, the flanges on the wheel-rim are left devoid of tongues, and on their flat exterior surface a tire-ring 16 is closely fitted and after it is mounted thereupon is secured in place by bolts or rivets, the provision of the tire-ring adapting the improved wheel for service on a wagon used for transporting freight over a rough road-bed.

It will be seen that in view of its strength and load-bearing capacity the improved vehicle-wheel is very light, may be formed of steel or iron, is exceedingly well adapted for supporting load strain, and may by suitable means be constructed rapidly and perfectly at a low cost. Furthermore, the improved vehicle-wheel may be given any size and its parts be proportioned to suit light or heavy service, thus adapting the improvement for use as parts of running-gears for coaches or other passenger-carrying vehicles.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. A vehicle-wheel comprising two circular dished body-sections and provided with peripheral flanges, means for securing said flanges together to form a wheel-rim, inwardly-turned circular flanges around central apertures in the half-sections of the wheel, one of said apertures being of greater diameter than the other, a conical hub fitting into the central apertures, and bolts engaging the hub and the section having the smaller aperture for securing the hub thereto.

2. A vehicle-wheel comprising two dished body-sections of plate metal, each having an inturned peripheral flange, means for securing the peripheral flanges together to form a wheel-rim, inwardly-turned circular flanges around central apertures in each of the half-sections, a thimble-like hub fitting into the circular flanges, spaced lugs on the peripheral surface of the hub, bolts having hooks for engaging the lugs and traversing one of said sections, and nuts engaging the bolts for securing the hub to the section.

3. A vehicle-wheel comprising two circular dished body-sections having their concave sides adjacent, means for securing the peripheries of the body-sections together to form a rim, each of said sections having a central aperture, a thimble-like hub fitted into the central apertures, and means engaging the hub and one of said sections for securing the hub thereto.

4. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned circular flange on the periphery of each half-section, tongues formed on the free edges of said flanges and offset therefrom, whereby to override the adjacent flange on the other section, the tongues of the half-sections being

interlocked to join the flanges to form a wheel-rim, a thimble-like hub, and means for securing said hub in central openings in the half-sections.

5 5. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the circular periphery of each half-section, tongues formed on the free edges of the peripheral flanges and offset therefrom, 10 whereby to override the flange on the other section, the tongues of said flanges being interlocked forming a continuous wheel-rim that is true on the exterior surface, clamping-bolts passing through the half-sections near 15 their peripheries, and secured by their ends therein, each half-section having a circular central opening and an inturned peripheral flange thereat, a thimble-like hub fitted into the flanges, and means for securing the hub 20 therein.

6. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the periphery of each half-section, tongues formed on the free edges of said circular flanges, said tongues having interlocking 25 engagement, clamping-bolts passed through perforations in the half-sections near the peripheral flanges and secured by their ends therein, each half-section having a central 30 circular opening therein, an inwardly-bent flange encircling each opening, a coniform thimble which serves as a spindle-box and fitted into the bores of the flanges, tie-bolts engaged by one end of each with the thimble, and at the other end passing through 35 the other half-section, and nuts on the outer threaded ends of the tie-bolts.

7. A vehicle-wheel, comprising two dished plate-metal half-sections, means for providing 40 a circular rim on the edges of the half-sections, each half-section being centrally apertured, a circular flange turned inwardly at

the edge of each aperture, a thimble fitted into said flanges and having lugs thereon, a plurality of tie-bolts having hooks on one 45 end of each bolt which engage the lugs, the opposite ends of the tie-bolts that are threaded extending through perforations in the half-sections, and nuts on said projected ends that by adjustment draw upon the thimble 50 for holding it secured.

8. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the periphery of each half-section, interlocking tongues formed on the inner 55 edges of the flanges, clamping-bolts holding the half-sections together near their peripheries, each half-section having a central aperture, the aperture in the normally inner half-section of the wheel-body being larger than 60 that in the outer half-section, an inwardly-turned flange on the edge of each aperture, a reinforcing-band shrunk on each of said flanges, a thimble forming a spindle-box having a coniform body and closely fitted into 65 the bores of the reinforcing-flanges, said thimble having spaced lugs thereon, tie-bolts having hooks on one end and threads on the opposite end, said hooks engaging the lugs and the threaded ends extending through 70 perforations in the half-sections, nuts on said extended ends, a hub-plate secured on the outer half-section, having recesses therein which receive the nuts and hold them from turning, and a mud-guard on the other half-section, secured concentric with the bore of 75 the thimble.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROLLAND FRANCIS MARTINDALE.

Witnesses:

A. H. TAYLOR,
W. F. CALLISTER.