

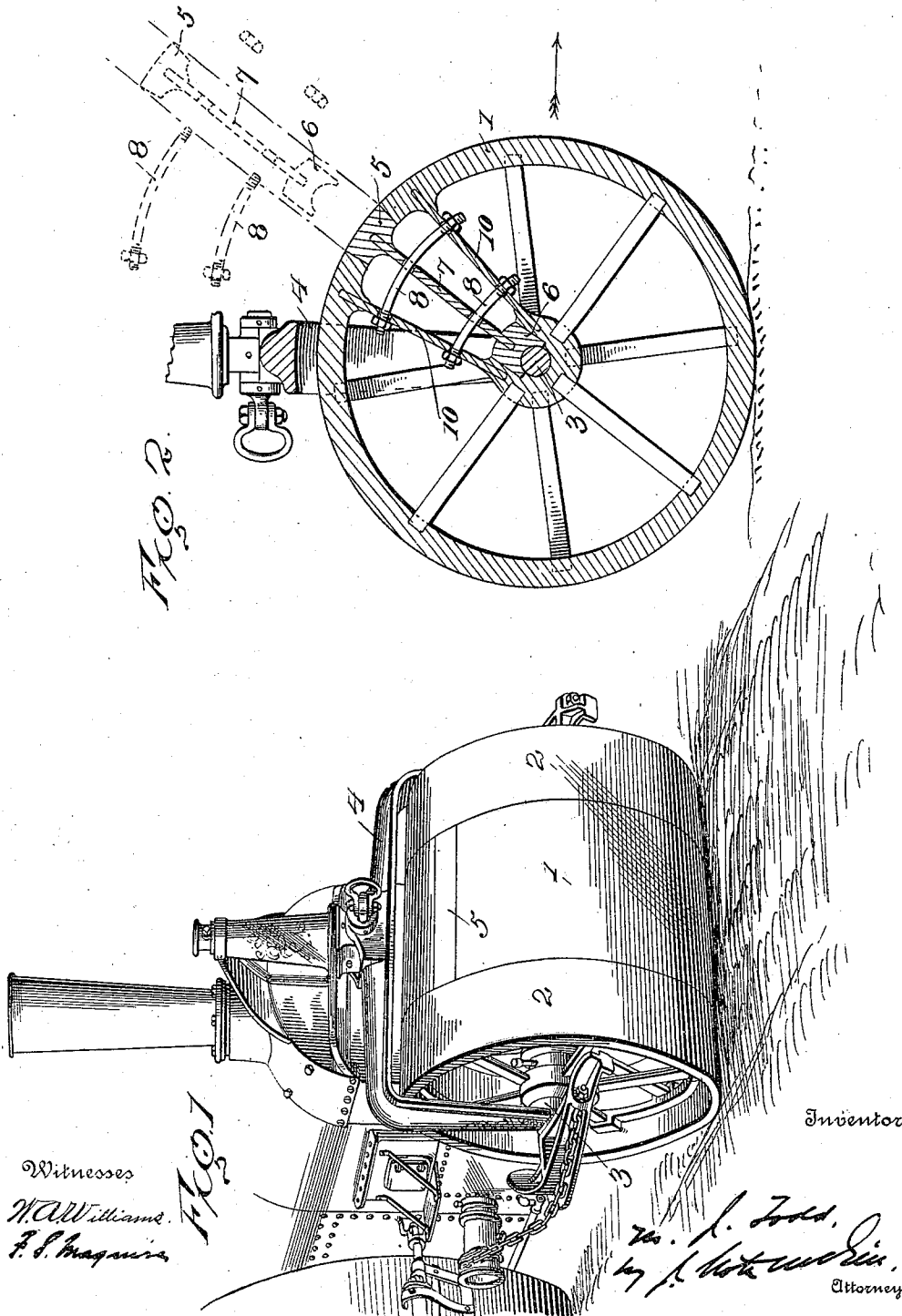
M. J. TODD.
ROAD ROLLER.

APPLICATION FILED MAR. 9, 1910.

976,012.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.



Witnesses
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F. S. Maguire

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by J. S. Woodward,
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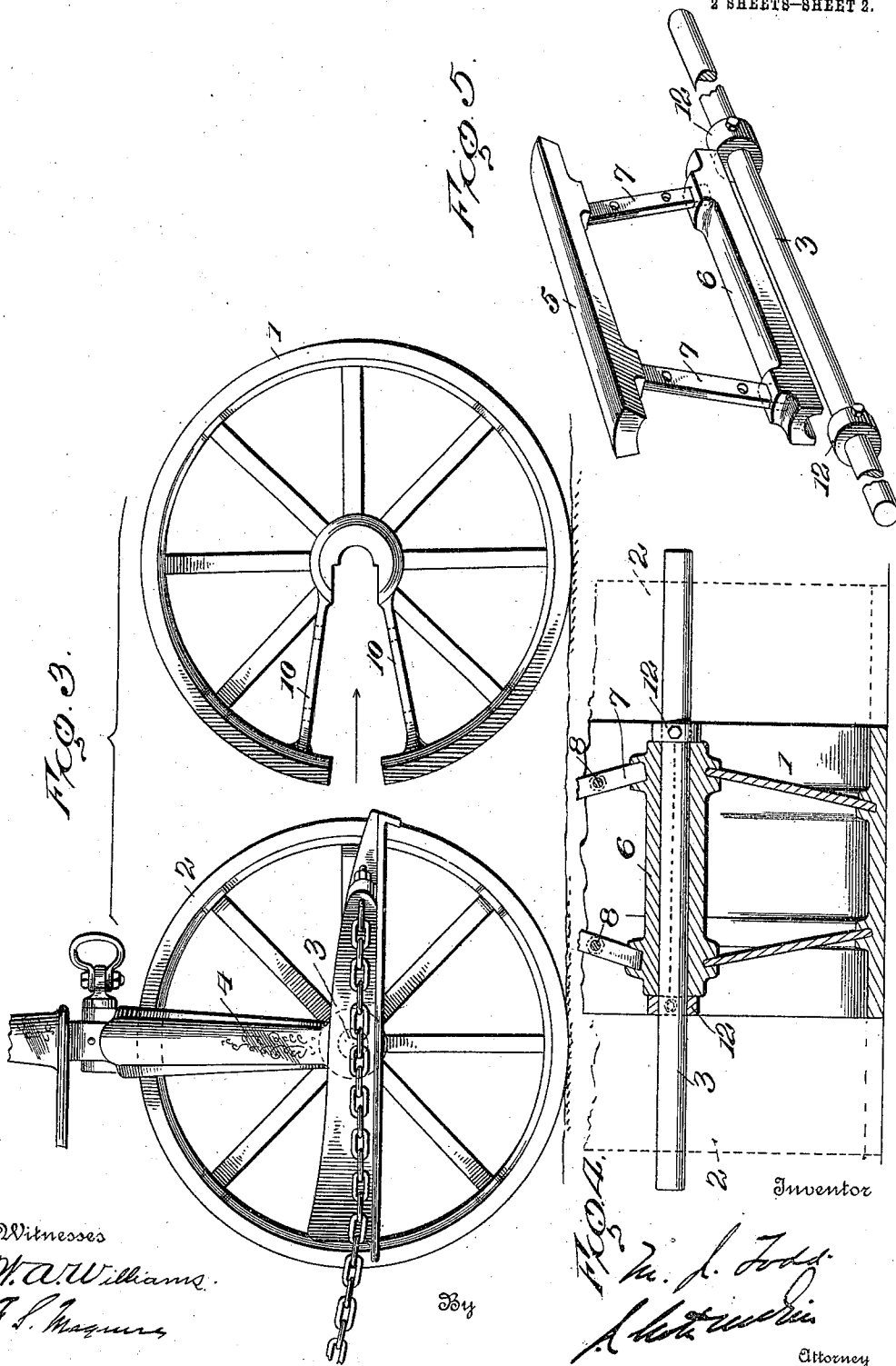
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UNITED STATES PATENT OFFICE.

MARQUIS J. TODD, OF BUFFALO, NEW YORK, ASSIGNOR TO BUFFALO STEAM ROLLER COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

ROAD-ROLLER.

976,012.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed March 9, 1910. Serial No. 548,283.

To all whom it may concern:

Be it known that I, MARQUIS J. TODD, a resident of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Road-Rollers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide an inter-convertible road-roller and traction engine.

It is well-known in the art that in transporting road-rollers, more or less difficulty is experienced by skidding in passing over crowned road-beds. This is due to the fact that the wide rollers by which the machines are steered have but limited contact with the road, namely, at the center, and this being in vertical line with the pivots of the roller-yokes the machines will rock to one side, and when being steered will usually skid toward the side of the road. It is my purpose to overcome this difficulty by making the front roll in sections so that the central section may be removed with the result that the machine may be used as a traction engine, the two end sections of the front roll serving as carrying wheels.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a road roller constructed in accordance with my present invention. Fig. 2 is a vertical sectional view centrally through the steering roll, with parts indicated in dotted lines. Fig. 3 is a side view showing the central section of the steering roll removed. Fig. 4 is a sectional view, with parts broken away, and others in dotted lines. Fig. 5 is a view of the axle and the removable segments of the central section of the steering roll.

In road-rollers as heretofore constructed the steering rolls are preferably placed at the front of the machines and are composed of one or more cylindrical bodies mounted on centrally-disposed axles. According to my invention the steering rolls embody a wide central section 1 and two narrow end sections, 2, carried by a common axle 3 mounted in yoke 4. When the machine is used as a road-roller all three sections are

usually employed, but when the machine is to be transported over a crowned road bed, or when it is desired to use it wholly as a traction engine, or as a roller for special purposes, the central section 1 is removed. Inasmuch as these steering rolls are very heavy, weighing about two tons or more, it is necessary to provide means for permitting the ready removal of the central section as well as its restoration to its normal position without the use of lifting jacks, or substituting or removing additional parts. The particular means shown contemplates removing a segment 5 from the periphery of roll section 1 and a segment 6 from the sleeve or bushing through which axle 3 projects, the two segments being connected by spokes 7. When the segments are in position, one completes the circular outline of the central roll-section and the other completes the outline of the axle sleeve or bushing.

Any suitable means may be employed for locking the segments in place, but I preferably use curved rods 8 passed through spokes 7 and adjacent spokes 10 of the roll-section. These rods are nuted at their ends and may be readily positioned or removed, access being had thereto through the spaces between the spokes of the end roll-sections. The axle 3 carries spacing collars 12 between the axle sleeves of the several roll sections.

In practice, to convert the roller into a traction engine, by removing the central roll-section 1, the operator first withdraws the several nuted rods 8 and removes the roll segment 5 and the axle sleeve segment 6. The engine of the roller is then moved backward and as the opening formed by the removal of the segments is brought into direct line with the line of draft on axle 3 the latter will immediately pass outwardly through such opening, the central section 1 remaining idle. The machine is now converted into a traction-engine. When it is desired to restore the central roll-section the engine is caused to travel forward so as to squarely present axle 3 to the horizontal opening in the periphery of the roll-section, and such section will remain idle until the axle engages its sleeve or bushing, and after the roll has been turned sufficient to bring the opening in convenient position, the segments of the roll and the axle sleeve are then restored and secured in place. The machine may then be used as a road-roller.

The advantages resulting from being able to convert a road-roller into a traction-engine will be at once appreciated by those skilled in the art. Owing to the great weight and the width of the face presented to the materials to be rolled, road-rollers are ordinarily impracticable for traction work in soft or heavy soil. But by removing the central section of the roll I convert the roller into a traction-engine possessing all necessary tractive power for hauling purposes on wet or heavy roads.

I claim as my invention:—

1. A road-roller having front and rear carrying wheels, a roll designed to fit between the front carrying wheels and to form with the latter a front roll, and means carried by said roll for detachably securing it in place.

2. A road-roller having its steering roll composed of three sections of corresponding diameters, and means for permitting the central section to be removed, the other sections remaining in position.

3. A road-roller having its steering roll composed of two end sections and a central section, all of said sections being of corresponding diameters, an axle common to the three sections, and means detachably securing said central section to said axle to permit it to be removed while the other sections remain on the axle.

4. A road-roller having its steering roll provided with a removable roll-section, an axle therefor, a segment of said roll-section being removable to form a passage-way for the axle to permit the roll-section to be positioned on or removed from said axle, means detachably locking said segment, and means for retaining the roll section on the axle.

5. A road-roller having its steering roll provided with a removable section, an axle therefor, said section having an axle sleeve, a segment of said roll-section and a segment

of said sleeve being removable, and means for detachably locking said segments in relation to the roll section.

6. A road-roller having its steering roll provided with a removable section, an axle therefor, said section having an axle sleeve, a segment of said roll-section and a segment of said sleeve being removable, means connecting said segments, and means for detachably locking said segments in relation to the roll section.

7. A road-roller having its steering roll composed of two end sections and a removable central section, an axle common to the three sections, said central section having a sleeve for said axle, a segment of said central section and a segment of said sleeve being removable, means connecting said segments, and means for locking said segments in relation to the roll section.

8. A road-roller having its steering roll composed of two end sections and a removable central section, each section having a sleeve, an axle passed through said sleeves, collars on said axle between the ends and central sections, a segment of said central section and a segment of the sleeve thereof being removable, means connecting said segments, and means for detachably locking said segments in relation to the roll section.

9. A road-roller comprising a roll, an axle therefor, a central sleeve for the axle, a segment of said roll and a segment of said sleeve being removable to form a passage-way for the axle through the sleeve and the periphery of the roll, and means for securing said segments in place.

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

MARQUIS J. TODD.

Witnesses:

FRANCIS S. MAGUIRE,
JOHN A. MURPHY.