

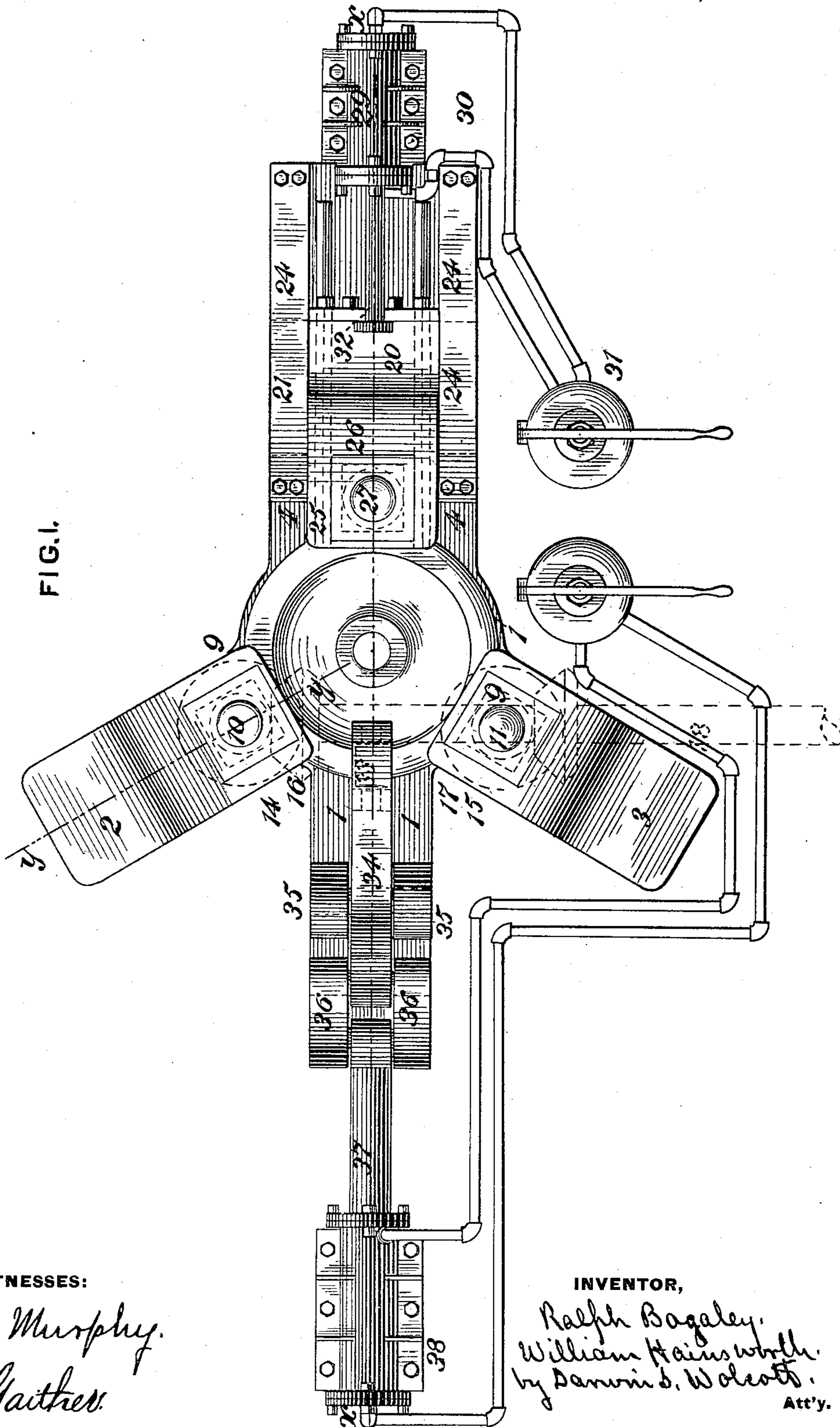
(No Model.)

2 Sheets—Sheet 1.

R. BAGALEY & W. HAINSWORTH.
MACHINE FOR ROLLING CAR WHEELS.

No. 379,754.

Patented Mar. 20, 1888.



WITNESSES:

W. S. Murphy.
F. E. Gaither.

INVENTOR,

Ralph Bagaley.
William Hainsworth.
by Darwin S. Wolcott.
Att'y.

(No Model.)

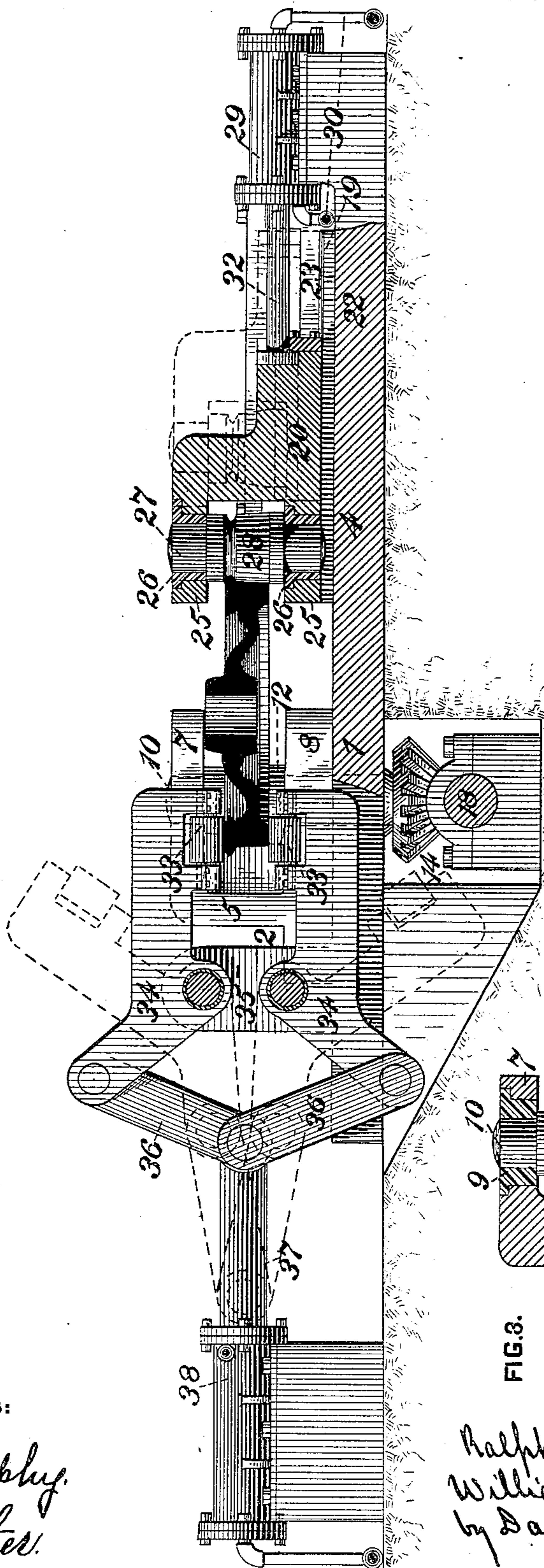
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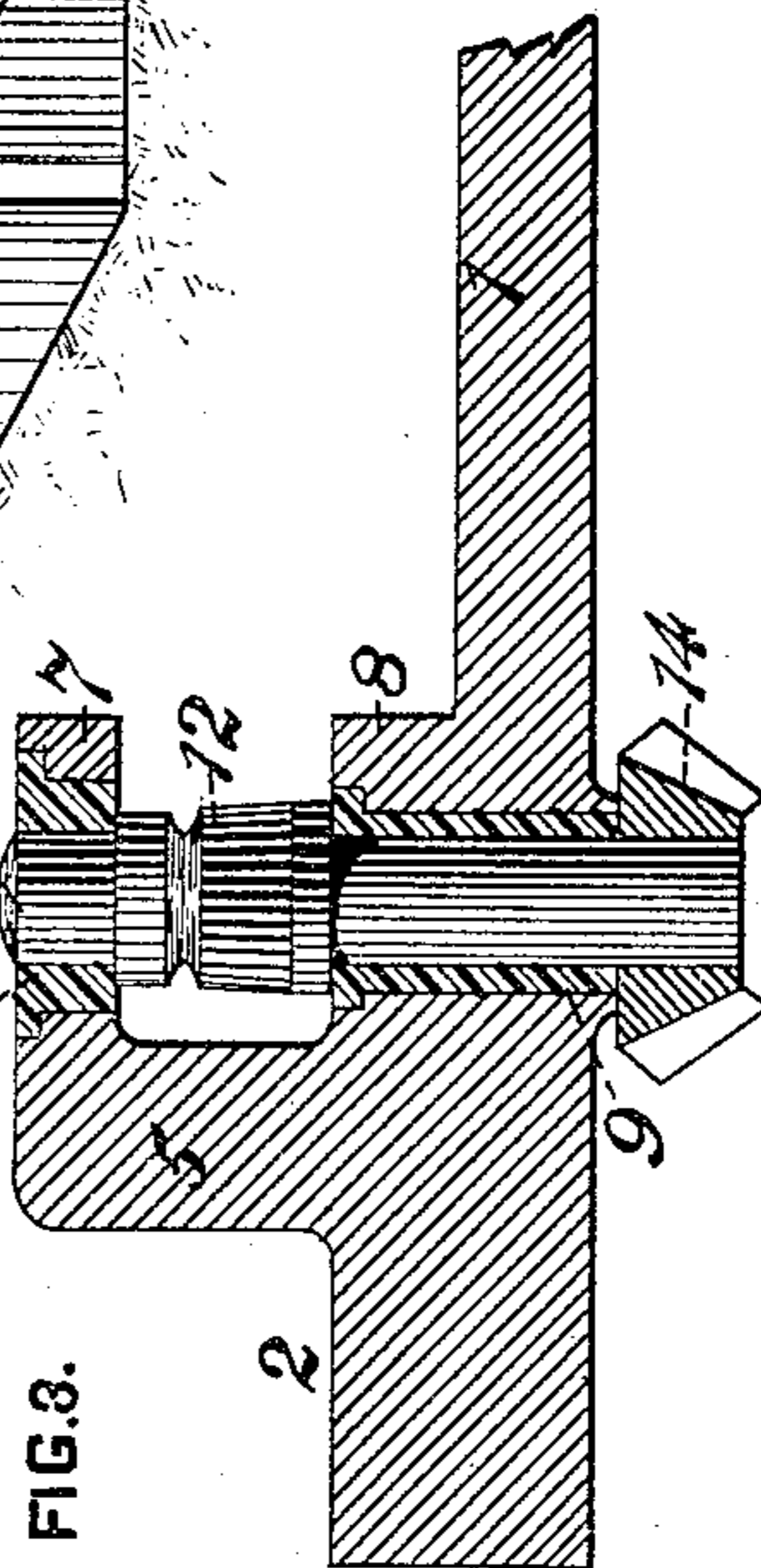
FIG. 2.



WITNESSES:

W. S. Murphy.
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FIG. 3.



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Ralph Bagaley.
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by *Danville W. Wickett* Att'y.

UNITED STATES PATENT OFFICE.

RALPH BAGALEY AND WILLIAM HAINSWORTH, OF PITTSBURG,
PENNSYLVANIA.

MACHINE FOR ROLLING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 379,754, dated March 20, 1888.

Application filed January 12, 1888. Serial No. 260,517. (No model.)

To all whom it may concern:

Be it known that we, RALPH BAGALEY and WILLIAM HAINSWORTH, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Machines for Rolling Car-Wheels, of which improvements the following is a specification.

The invention herein relates to certain improvements in machines for finishing the tread and flange, reducing the wheel to the desired diameter, and producing a practically true rolling-surface; and the invention has for its object a form or construction of machine wherein the desired results may be quickly and certainly produced.

In general terms, the invention consists in the construction and combination of mechanical devices, all as more fully hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of our improved machine. Fig. 2 is a sectional view on the line *x x*, Fig. 1; and Fig. 3 is a sectional elevation of one of the positively-driven rolls and its connections, the section being taken on the line *y y*, Fig. 1.

In the practice of our invention we provide a bed-plate, 1, having radial extensions 2, 3, and 4 formed integral therewith, as shown, and on the extensions 2 and 3 are formed the vertical posts 5, provided with inwardly-projecting arms 7 and 8, the lower arms, 8, being preferably formed integral with the bed, or, in other words, they are vertical thickening of the bed at such points. In the arms 7 and 8 are formed angular openings, in which are placed the journal-boxes 9 for the shafts 10 and 11, carrying the operative rolls 12 and 13. The lower ends of the shafts 10 and 11 project down through openings in the bed-plate, said openings being practically prolongations of the openings in the arms 7 and 8, and on the ends of the shafts are keyed miter-wheels 14 and 15, which intermesh with correspondingly-shaped wheels 16 and 17 on the power-shaft 18.

On the face of the radial extension 4 are formed V-shaped guides 19, on which is

mounted a sliding block, 20, said block being provided with lateral wings 21, adapted to slide in recesses 22 in the upper edges of flanges 23, formed along the sides of the radial extension 4. The wings and block are held as against upward movement by cap-plates 24, secured over the recesses 22. Horizontally-projecting arms 25 are formed on the front of the block 20, and in said arms are arranged journal-boxes 26, in which is mounted the shaft 27, carrying the roll 28. The shaft 27 and roll 28 are constructed to be driven by frictional contact with the wheel operated on.

On the rear end of the extension 4 is placed a hydraulic cylinder, 29, having suitable pipe-connections, 30, with the valve mechanism 31. The rod 32 of the piston arranged in the cylinder 29 is connected to the rear end of the block 20 in such manner that the movements of the block shall be effected and controlled by said piston. If desired, the cylinder 29 may be made single-acting, in which case the block will be retracted or moved outward by suitably-arranged springs.

The rolls 12, 13, and 28 are constructed as regards the operative faces to impart the desired shape or contour to the periphery of the wheels operated on, and the rolls 12 and 13 are arranged so that the operative portions thereof shall be tangential to an arc of a circle whose radius is equal to the desired radius of the finished wheel and whose center shall coincide with the center of such wheel when in position, and the block so carrying the roll 28 is given such a range of movement as to permit of the roll 28 being moved up to a corresponding position and withdrawn sufficiently far to permit of the placing of the wheel in position for rolling.

In order to remove any protuberances on the sides of the rim of the wheel, and also to reduce the rims to a practically-uniform thickness, the sides of the rim are subjected to the action of the horizontal rolls 33, which are mounted in suitable bearings formed at the inner ends of angular levers 34. These levers are pivotally mounted between posts 35, formed on one side of the bed-plate 1, as shown, the pivotal points of said levers being an equal distance from and on opposite sides of a hori-

zontal plane passing through the middle of the wheels operated on. To the outer ends of the levers are connected links 36, having their opposite ends connected to the piston-rod 37 of the hydraulic cylinder 38. The angularity of the levers 34 should be such as to permit of the rolls 33 being moved sufficiently far apart for the easy insertion of the wheel between them.

10 The wheel having been cast in a suitable mold, Bessemer metal being preferably used, is, as soon as sufficiently solidified, removed from the mold and placed between the vertical rolls 12, 13, and 28 and the horizontal rolls 33, the roll 28 being withdrawn and the rolls 33 separated for that purpose. The roll 28 is then moved forward, thereby pressing the wheel against the rotating rolls 12 and 13, by which motion is imparted to the wheel. At 20 the same time, or at any time before the metal of the wheel has become hardened, the rolls 33 are forced against the sides of the rim. The operation of the several rolls will finish and harden the tread and impart a practically true rolling surface thereto. The horizontal rolls 33 will not only reduce any inequalities on the sides of the rim, but will also resist any tendency to upward movement of the wheel during rolling under the action of the conical portions of the vertical rolls.

We claim herein as our invention—

1. In a machine for rolling car-wheels, the combination of two positively-driven vertical rolls and a vertical roll movable toward and from the other rolls and driven by frictional contact with the wheel operated on, substantially as set forth. 35

2. In a machine for rolling car-wheels, the combination of two positively-driven vertical rolls, a vertical roll movable toward and from the other rolls, and a pair of horizontal rolls movable toward and from each other, the movable rolls being driven by frictional contact with the wheel operated on, substantially as set forth. 40 45

3. In a machine for rolling car-wheels, the combination of a pair of angular levers, rolls horizontally mounted on the inner ends of said levers, an operating-rod, and a toggle-joint connection from said rod to the levers, substantially as set forth. 50

In testimony whereof we have hereunto set our hands.

RALPH BAGALEY.
WILLIAM HAINSWORTH.

Witnesses:

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D. C. O'BRIEN.