

No. 679,135.

Patented July 23, 1901.

J. E. YORK.
VEHICLE RUNNING GEAR.

(Application filed May 24, 1901.)

(No Model.)

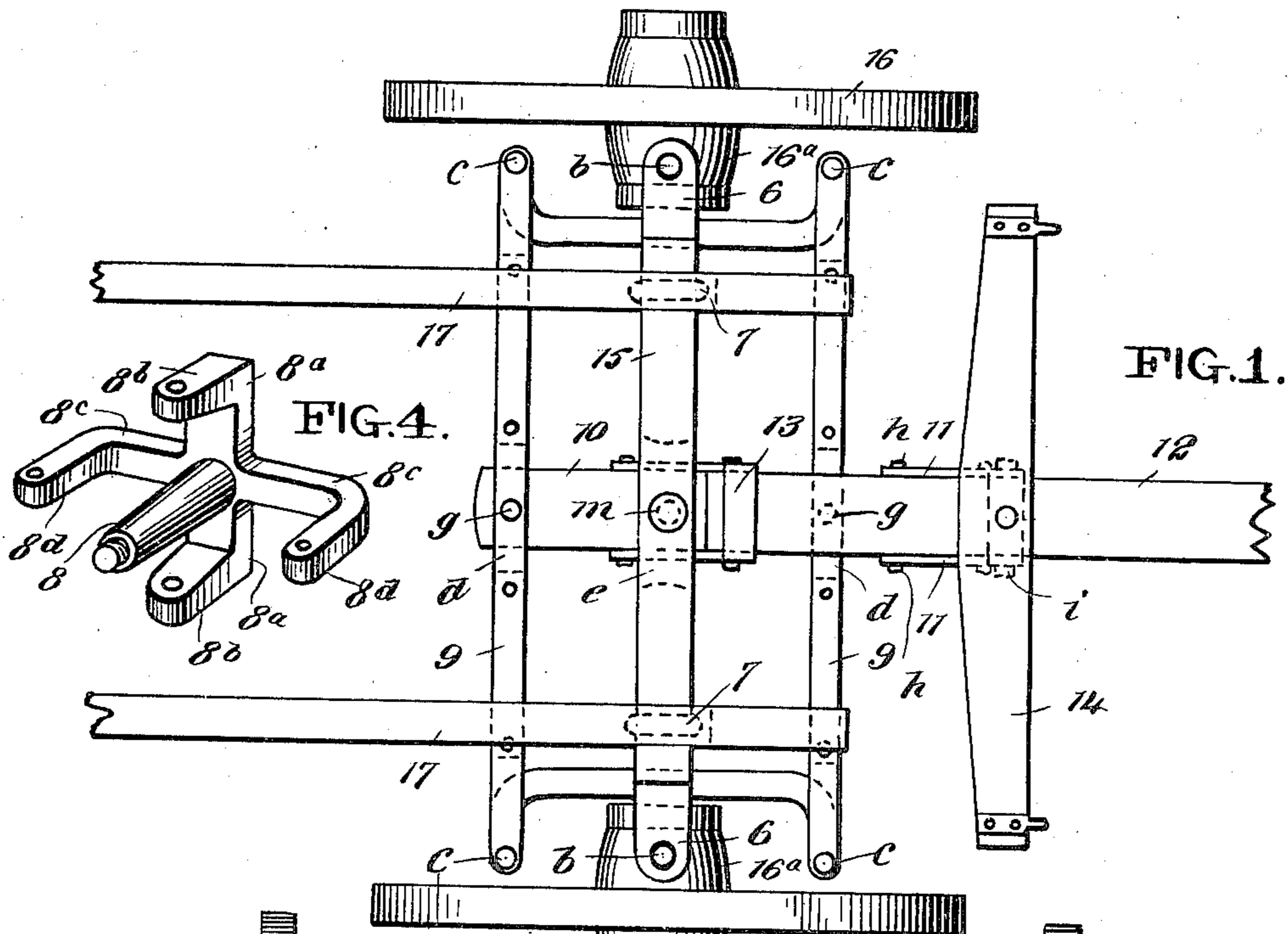


FIG. 1.

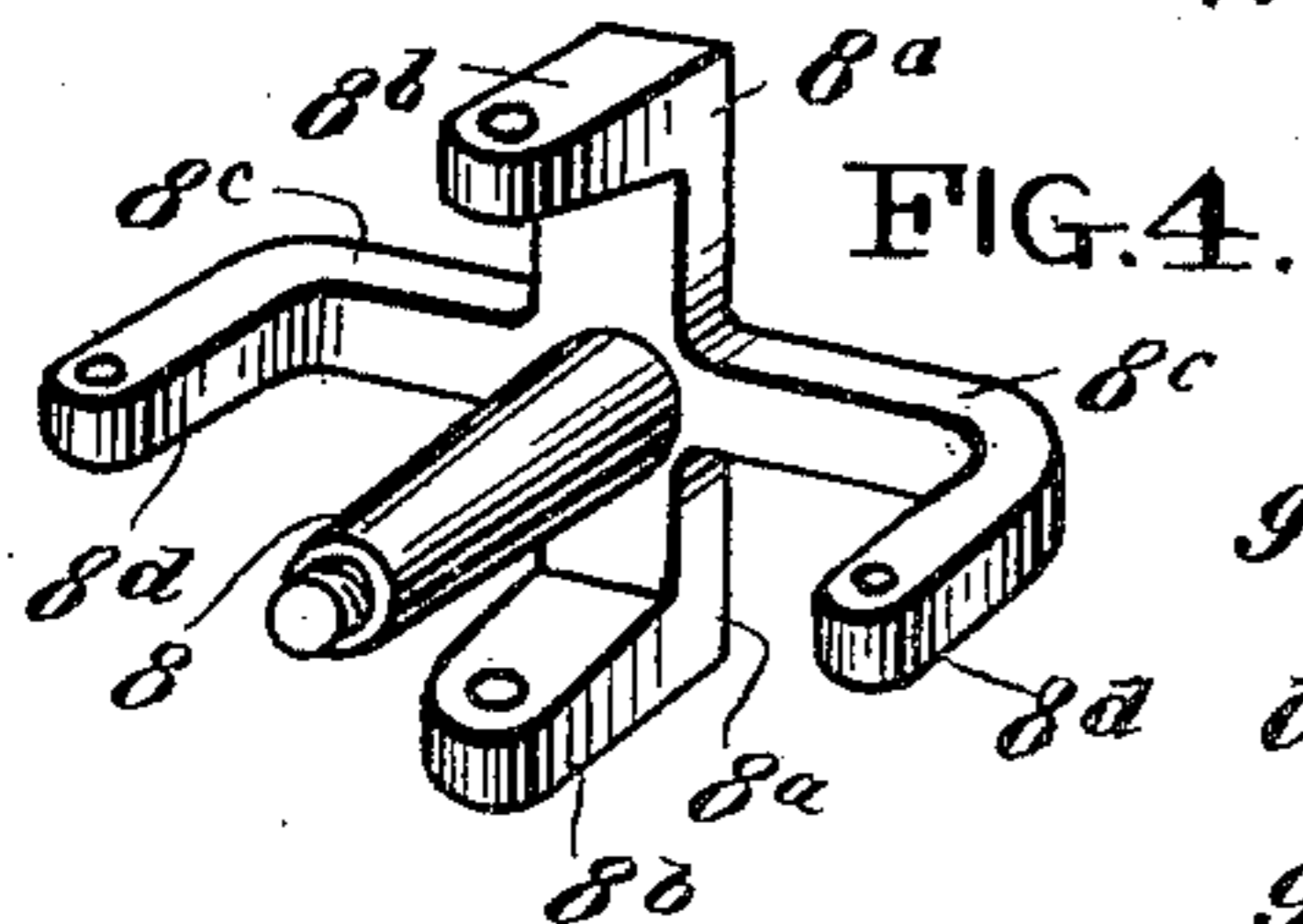
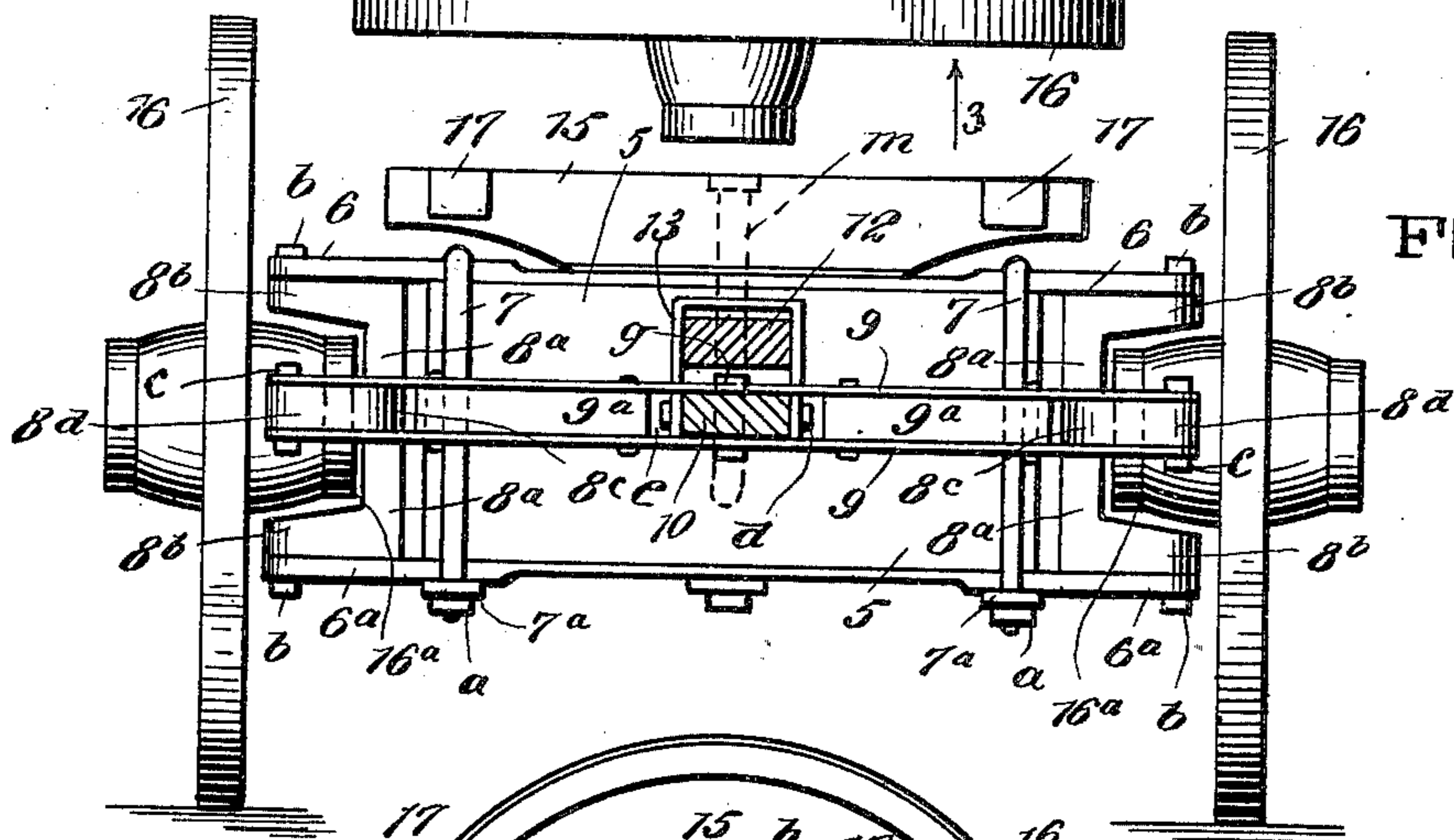


FIG. 4.



UNITED STATES PATENT OFFICE.

JOHN E. YORK, OF LOWELL, WASHINGTON, ASSIGNOR OF ONE-HALF TO
GEORGE M. PILLSBURY, OF SAME PLACE.

VEHICLE RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 679,135, dated July 23, 1901.

Application filed May 24, 1901. Serial No. 61,711. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. YORK, a citizen of the United States, and a resident of Lowell, in the county of Snohomish and State of Washington, have invented a new and Improved Vehicle Running-Gear, of which the following is a full, clear, and exact description.

The object of this invention is to provide novel features of construction for the running-gears of a wagon having a draft-pole which will prevent side lashing of the pole while in service and, furthermore, be adapted to traverse a rough road-bed with much greater ease than is effected with wagon running-gears of ordinary construction.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended 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 plan view of the improved running-gear. Fig. 2 is a transverse sectional view of the same, substantially on the line 2 2 in Fig. 3. Fig. 3 is a side view of the improvement in direction of the arrow 3 in Fig. 1, the near wheel of the running-gear being removed; and Fig. 4 is a perspective view of a spindle having spider-arms and constituting a novel detail of construction of the running-gear.

The invention is especially adapted for use as the working parts of a heavy draft-wagon provided with a pole for connection of a team of draft-animals thereto, and in the drawings the improved running-gear represented is for such a wagon; but the improvement may be applied to lighter vehicles.

The front axle 5, whereon the novel details are mainly supported, is of considerable thickness, and upon the parallel upper and lower sides of said axle-body, respectively, reinforcing-plates 6 6^a are secured, preferably by clip-bands 7 and clamping-plates 7^a, held on the ends of the bands by nuts *a* or similar means. The axle 5 terminates at each end in a vertical wall and is of such length as will permit the ends of the plates 6 6^a to pro-

ject as brackets an equal degree outwardly from the axle. A stub-spindle 8 is provided for each end of the axle 5, and on each spindle, that may be tapered toward the outer end, four evenly-spaced spider-arms are formed or secured, which arms radiate from each spindle-body at the end which in service is adjacent to a corresponding extremity of the axle 5.

The pair of arms 8^a, that are disposed in the same vertical plane when arranged for service, have at a suitable distance from the spindle-body an outwardly-projecting member 8^b, these members of equal length having aligned perforations near their free extremities. The remaining pair of spider-arms 8^c are radially extended from the spindle 8 in the same horizontal plane, as clearly shown in Fig. 4, and are bent at a suitable distance from said spindle-body to dispose equal portions of their bodies substantially parallel with each other and with the axis of the spindle, said portions 8^d of the arms 8^c being projected in the same direction as the outer end of the spindle. The spider-arms 8^a and integral members 8^b thereon have said projected members loosely fitted between a corresponding pair of the brackets 6 6^a and are thereto loosely secured by pivot-bolts *b*, that engage opposite perforations in the ends of the bracket-plates, and are fixed in the spider-arm members 8^b, from which they project as studs.

The forwardly-extended horizontal spider-arms 8^c have the ends of their members 8^d connected together by a pair of link-bars 9, that are lapped, respectively, at their ends upon the upper and lower sides of said spider-arm members and are thereto pivoted near the extremities of said parts, as shown at *c* in Figs. 1 and 2. In a like manner the pair of rearwardly-extended spider-arms 8^c have the ends of their outwardly-extended members 8^d pivotally connected with the ends of two link-bars 9, which serve to dispose the pair of link-bars 9 in front of the axle 5 parallel with the like pair of link-bars at the rear of said axle, as is clearly shown in Fig. 1.

Two filling-strips 9^a may be placed and secured between each pair of link-bars 9, said strips being separated at their inner ends, so as to leave an opening *d* at or near the longi-

tudinal center of the axle 5. A draft-bar 10 is provided which passes through the opening *d* in the front link-bar 9 and then through a horizontal aperture *e*, formed in the center of the axle 5, and extends therethrough rearwardly, the rear end of said bar occupying the central opening *d*, between the ends of the rear link-bars 9, and a pivot-bolt *g* is inserted through aligned perforations in the bars 9 and draft-bar, as shown in Figs. 1 and 2.

On the forward end of the draft-bar 10 two right-angular bracket-arms 11, in plate form, are secured by bolts *h*, which pass through the horizontal members of said arms and through lateral perforations in the draft-bar, whereby the vertical members of these arms are held spaced apart above the body of the draft-bar, as indicated in Fig. 3. A tongue or draft-pole 12 of suitable length has its rear portion introduced between the vertical members of the right-angular bracket-arms 11 and extends rearwardly, so that the rear extremity thereof is near to the front side of the axle 5. The tongue 12 is pivoted between the bracket-arms 11 by a bolt *i*, that is passed through aligned perforations in the upright members of said arms and in the body of the tongue.

Upon the draft-bar 10, near the axle 5, a looped check-piece 13 is secured, so as to project the looped portion of the same above the draft-bar and in the path of the rear end of the tongue 12, which projects loosely therethrough, the top cross-bar of the looped piece serving to limit the upward vibration of the rear end of the tongue 12 and the depression of the forward end thereof. The upper ends of the vertical members of the angular bracket-arms 11 are preferably joined together by an integral transverse spacing-plate, and upon said spacing-plate the doubletree 14 is pivoted, so as to swing in a horizontal plane, as shown in Fig. 1.

Upon the upper side of the axle 5 a bolster-bar 15 is centrally pivoted by the king-bolt *m*, that passes down through the bolster and into the axle, said bolt also passing through a perforation in the upper reinforcing-plate 6, as indicated in Fig. 2.

The wheels 16 are proportioned for effective service, and each wheel is loosely mounted upon a spindle 8 and held thereon by usual means, and it will be seen that the inner ends of the wheel-hubs 16^a have clearance from the spider arms that are projected from the inner ends of the stub-spindles 8. The rear axle and wheels are omitted from the drawings, as they do not embody features of the invention, it being understood that such portions of the running-gear are to be suitably formed and proportioned so as to be effective in operation and adapted for coöperation with the novel details that have been described.

As a support for a wagon-body, two reach-bars 17 have their forward portions engaged with the bolster 15 near its ends and thence extend parallel with each other rearwardly

to engage with a similar bolster that is carried by the rear axle. (Not shown.) Braces 18 may extend from the lower side of the axle 5 to engage the reach-bars 17 and be thereto secured.

In operation it will be seen that the stub-spindles 8, by reason of their connections, are conjunctively actuated if either front wheel 16 encounters an obstruction, and the wheel that strikes such an obstruction may yield rearwardly a sufficient degree to dispose the periphery of this wheel at right angles to the object it contacts with, and thus be adapted to surmount the obstacle easier than can be done with front wheels mounted upon spindles that are rigid projections from the ends of the front axle. It will also be evident that any lateral movement of the wheels 16 due to their travel over a rough road-bed will not objectionably affect the draft-pole or tongue 12, as the spider-arms and connecting-links that are adjuncts of the stub-spindles 8 serve to connect and control the operation of the spindles and wheels thereon without injurious lateral movement of the tongue or draft-pole. It will also be seen that the pivotal connection of the extensions of plates 6^a with the spider-arm members 8^b in the same vertical plane with the center of the axle 5 equalizes the load strain sustained by each stub-spindle 8 and so adapts the device to return to the normal position shown in Fig. 1 when the wheels 16 are not separately retarded in progressive movement.

It is claimed that the working parts of the improved running-gear may be made strong and durable, so as to endure heavy draft strains, and it is evident that a team of animals drawing a wagon having the described improvements will be able to do more work and with greater ease than a wagon not provided therewith, as the quick side whipping of a draft-pole which occurs in use of ordinary running-gears worries the animals and in many cases seriously injures their limbs, such contingencies being completely obviated by the improvements.

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

1. In wagon running-gears, the pair of stub-spindles, each having four evenly-spaced spider-arms thereon, each of said arms being bent to project an end thereof in the direction of the free end of the spindle, a front axle, means for pivotally connecting two of the spider-arms of each stub-spindle with an end of the axle, and means for connecting the remaining spider-arms of each stub-spindle with like spider-arms on the other stub-spindle.

2. In wagon running-gears, the combination with a front axle, bracket-plates on the upper and lower sides of said axle and extended at the ends of the axle, of two stub-spindles, each having four spaced and bent spider-arms thereon, two of the arms of each spindle being pivoted between the ends of the bracket-

plates, and two transverse link-bars, each link-bar having one end thereof pivoted upon one end of one of the spider-arms.

3. In wagon running-gears, the combination
5 with a front axle, two reinforcing bracket-plates secured thereon so as to project at the ends of the axle from the upper and lower sides thereof, and two stub-spindles, each having four angularly-bent spider-arms,
10 evenly spaced from each other and projected in the direction of the free end of said spindle, of two link-bars pivoted at their ends on the ends of corresponding spider-arms, and a draft-bar passing through an opening in the
15 axle and having pivoted engagement with the transverse link-bars.

4. In wagon running-gears, the combination with an axle, laterally apertured at its longitudinal center, two stub-spindles held to rock

laterally at the ends of the axle, and two link- 20 bars transversely held by pivotal engagement of their ends with projections on the stub-spindles, of a draft-bar passing through the aperture in the axle and pivoted therein, said draft-bar being also pivoted upon the link- 25 bars, angular bracket-plates held at the sides of the draft-bar upon its front end, a draft-pole pivoted between the members of the angular bracket-plates, and a looped check-piece secured on the draft-bar and through which 30 the rear end of the draft-pole loosely passes.

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

JOHN E. YORK.

Witnesses:

H. D. COOLEY,
J. E. HORAN.