

No. 846,606.

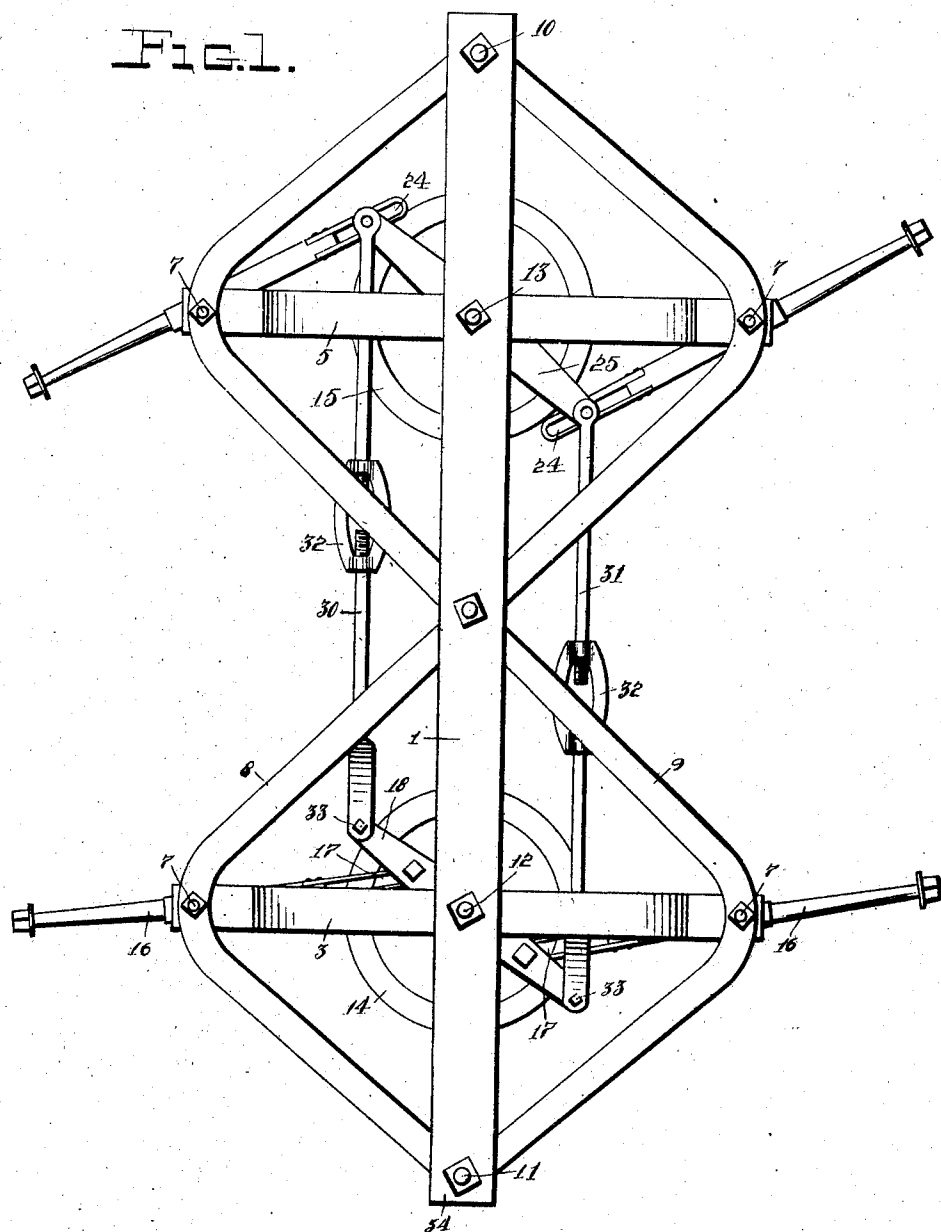
PATENTED MAR. 12, 1907.

F. J. PATTERSON & S. E. MAGEE.

RUNNING GEAR.

APPLICATION FILED AUG. 22, 1906.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 2.

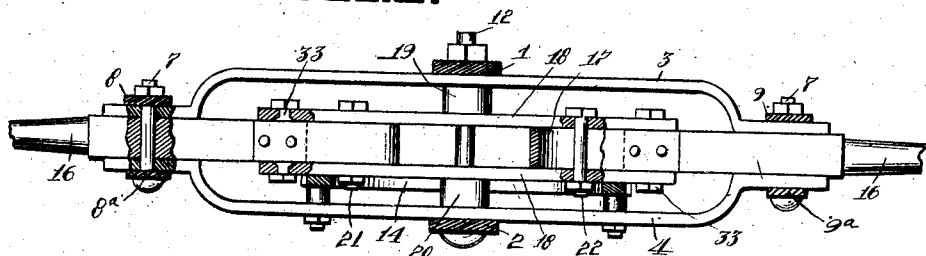


FIG. 3.

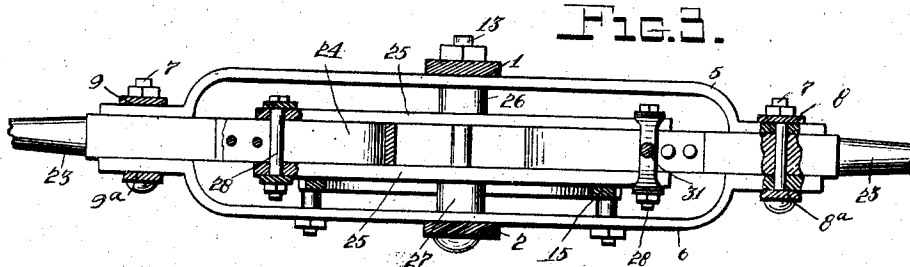
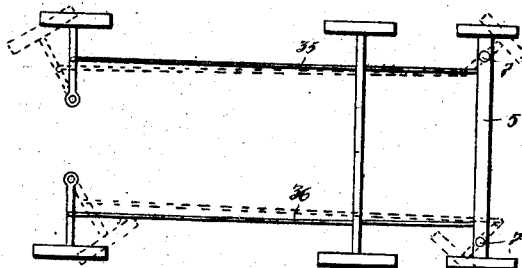
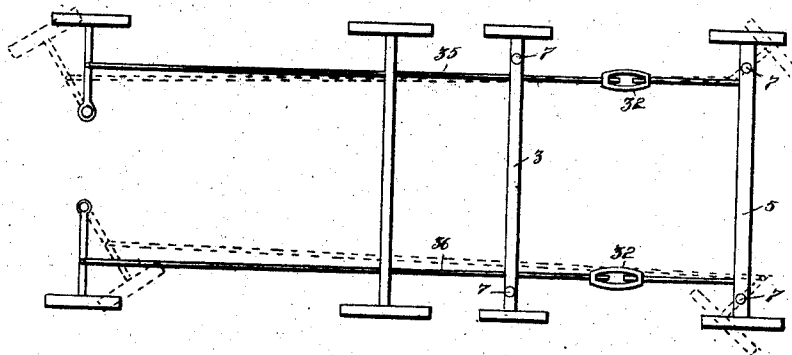


FIG. 4.



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FIG. 5.

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# UNITED STATES PATENT OFFICE.

FRANK J. PATTERSON AND SPENCER E. MAGEE, OF TRENT, SOUTH DAKOTA;  
SAID MAGEE ASSIGNOR TO SAID PATTERSON.

## RUNNING-GEAR.

No. 846,606.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed August 22, 1906. Serial No. 331,618.

*To all whom it may concern:*

Be it known that we, FRANK J. PATTERSON and SPENCER E. MAGEE, citizens of the United States, residing at Trent, in the county of Moody and State of South Dakota, have invented new and useful Improvements in Running-Gear, of which the following is a specification.

This invention relates to running-gear particularly adapted for use on tenders for threshing-machine traction-engines.

Tenders for threshing-machine traction-engines as used at the present time are supported by but two wheels and are of comparatively small capacity and are subject to a serious defect in that the wheels do not follow in the tracks of the wheels of the traction-engine when turning a corner or moving in a general circular direction and tend to plow into the ground, causing much strain in front and rear.

The object of the present invention is the provision of a running-gear especially adapted for use in supporting the tenders of traction-engines used for operating threshing-machines, so that the tender may be supported by four wheels, and thus made much larger to accommodate double the fuel and water supply.

The invention contemplates the provision of a running-gear of improved construction which will be so arranged and adapted in relation to the traction-engine that the wheels of the tender will follow in the tracks of the front and rear wheels of the traction-engine and all sluing or plowing of the ground when the tender and traction-engine are turning will be obviated, besides permitting turning in a very small circle.

The invention is set forth fully hereinafter, and its novel features are recited in the appended claims.

In the accompanying drawings, Figure 1 is a plan view with parts broken away, showing the axles shifted as when the running-gear is moving in the arc of a circle; Fig. 2, a cross-section showing the construction used with the front axles; Fig. 3, a cross-section showing the construction used with the rear axles; Fig. 4, a diagrammatic view showing how the parts operate and how they are connected to the traction-engine, and Fig. 5 a diagrammatic view showing how the

rear axle alone may be used to constitute a two-wheeled tender.

The main frame consists of upper and lower parallel reaches 1 and 2, front transverse frame-pieces 3 and 4, and rear transverse frame-pieces 5 and 6.

The frame-pieces 3 and 4 are similar to the frame-pieces 5 and 6, and these frame-pieces are bowed and at their outer ends are connected by bolts 7 to trussing or bracing frames 8 and 9, said frame-pieces 8 and 9 crossing each other and being connected to the top reach 1 at a point central of its ends, so that said frame-pieces are 8-shaped. The extremities of said frame-pieces 8 and 9 are connected by bolts 10 and 11 to the extremities of the upper reach 1. Frame-pieces 8<sup>a</sup> and 9<sup>a</sup>, identical in every way to the frame-pieces 8 and 9, are located underneath the lower reach 2 and connected thereto at the center thereof and also connected to the bolts 7, 10, and 11. With this construction the entire frame is rigidly braced. The frame-pieces 3, 4, 5, and 6 are connected to the reaches 1 and 2 by king-bolts 12 and 13. Stationary fifth-wheels 14 and 15 are secured to the lower reach 2 and to the lower frame-pieces 4 and 6.

The front axles 16 are pivoted between the ends of the frame-pieces 3 and 4 by bolts 7, and at their inner ends they are provided with clevises 17. Parallel arms 18, which are journaled on the king-bolt 12 at points intermediate their ends, being separated from the frame-pieces 3 and 4 by sleeves 19 and 20, are themselves secured together by bolts 21 and 22, which are located about midway the ends and pivotal points of said parallel arms 18 and pass through the clevises 17.

The rear axles 23 are pivoted on the bolts 7, which connect the frame-pieces 5 and 6, being located between the ends of said frame-pieces, and at their inner ends said axles are provided with clevises 24. Parallel arms 25 are mounted on the king-bolt 13, and sleeves 26 and 27 are provided in a manner similar to the pivotal mounting of the arms 18; but instead of having the bolts 21 and 22 positioned intermediate the ends of the arms and king-bolt, as is the case with the arms 18 and king-bolt 12, bolts 28 are provided, which connect the extreme ends of the arms 25 and pass through the clevises 24 on the inner ends of

axles 23, said clevises being properly formed and positioned for this purpose. The fifth-wheels 14 and 15 support the parallel arms 18 and 25. The extreme ends of the parallel arms 18 are connected to the bolts 28 by connecting-rods 30 and 31, having turnbuckles 32. These rods are connected to the ends of the parallel arms 18 by the additional bolts 33.

As thus described the invention constitutes a complete and improved and novel running-gear. Our running-gear, however, is particularly adapted for use in connection with traction-engines, and it will be understood that the latter are arranged with their steering-wheels in front, while their traction-wheels do not turn or swing in a horizontal plane.

The front ends 34 of the reaches 1 and 2 are connected together by angle-irons, (not shown,) to which the coupling at the rear of the traction-engine may be fastened. The extreme ends of the parallel arms 18 are connected, by means of rods 35 and 36, to the axles of the front or steering wheels of the traction-engine.

By reason of the distance between the pivot-bolts 7 of rear axles 23 and the bolts 28 being much less than the distance between the pivot-bolts 7 of the front axles 16 and the bolts 21 (and 22) it is clear that on a given movement applied through the rods 35 and 36 the rear axles 23 will be shifted faster and will assume a greater angle than will be assumed by the front axles 16, and as the rear axles 23 are directly actuated from the front or steering axles of the traction-engine said traction-engine axles and the rear axles 23 move parallel, and hence the wheels on the rear axles 23 will follow exactly in the tracks of the steering-wheels of the traction-engine, while the disposition of the bolts 21 and 22 will cause the wheels mounted on the front axles 16 to follow exactly in the tracks of the rear or traction wheels of the traction-engine, and in consequence there is no sluing of the tender and the wheels thereof do not plow into the ground to any extent.

As shown diagrammatically in Fig. 5, the invention may be adapted for use as a two-wheeled tender by employing only the rear axles and directly connecting them to the front axles of the traction-engine. The body of the tender would be mounted on the framework. In this construction the wheels of the tender follow in the tracks of the front or steering wheels of the traction-engine and all sluing or plowing of the ground by the wheels is avoided.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A frame for running-gear, comprising upper and lower parallel reaches, upper and lower transverse bowed members located

near the ends of said reaches, upper and lower 8-shaped bracing members secured to said reaches and transverse members, and fifth-wheels secured to the lower members at the points of intersection of the reaches and the transverse members.

2. A frame for running-gear, comprising upper and lower parallel reaches, upper and lower transverse bowed members located near the ends of said reaches, upper and lower 8-shaped bracing members secured to said reaches and transverse members, and fifth-wheels secured to the lower members at the points of intersection of the reaches and the transverse members, axles pivoted between the outer ends of said transverse members, arms pivoted concentric with and resting upon said fifth-wheels, and slidably connected with said axles, and rods connecting said arms.

3. The combination with a frame comprising upper and lower transverse members, a fifth-wheel secured to the lower member, upper and lower reaches, upper and lower braces connected to the ends of said transverse members and to the reaches, axles pivoted between the ends of the transverse members, upper and lower parallel arms pivoted concentric with and resting upon said fifth-wheel, and receiving between them the inner ends of the axles, and means for connecting said axles with the steering-wheels of a propelling vehicle.

4. In a running-gear, the combination with a pair of independently-pivoted axles, of an arm pivoted intermediate its ends, pivotal slidable connections between the arm and the respective axles which are disposed inwardly from the ends of said arm, another pair of independently-pivoted axles, another arm pivoted intermediate its ends and having slidable pivotal connections with the axles last named, connecting members between the outer ends of the arm first-named and the ends of the arm last named, another running-gear for another vehicle which has steering-wheel axles, and connections between said steering-wheel axles and the aforesaid connections between the arms of the first-named running-gear, whereby the wheels of the first-named running-gear will travel in the tracks of the wheels of the last-named running-gear.

5. The combination with a frame, of two pairs of axles pivoted near the ends thereof, connections between the inner ends of each pair of axles for turning them in opposite directions, and connections between the axles on the same side of the frame for causing them to move in the same direction.

6. The combination with a frame, of two pairs of axles pivoted near the ends thereof, connections between the inner ends of each pair of axles for turning them in opposite di-

rections, and connections between the axles  
on the same side of the frame for causing  
them to move in the same direction, said lat-  
ter connections being so attached as to cause  
5 the axles in one pair to have a greater angu-  
lar movement than those in the other pair.

In testimony whereof we have signed our

names to this specification in the presence of  
two subscribing witnesses.

FRANK J. PATTERSON  
SPENCER E. MAGEE.

Witnesses:

L. A. BALL,  
T. J. CONE.