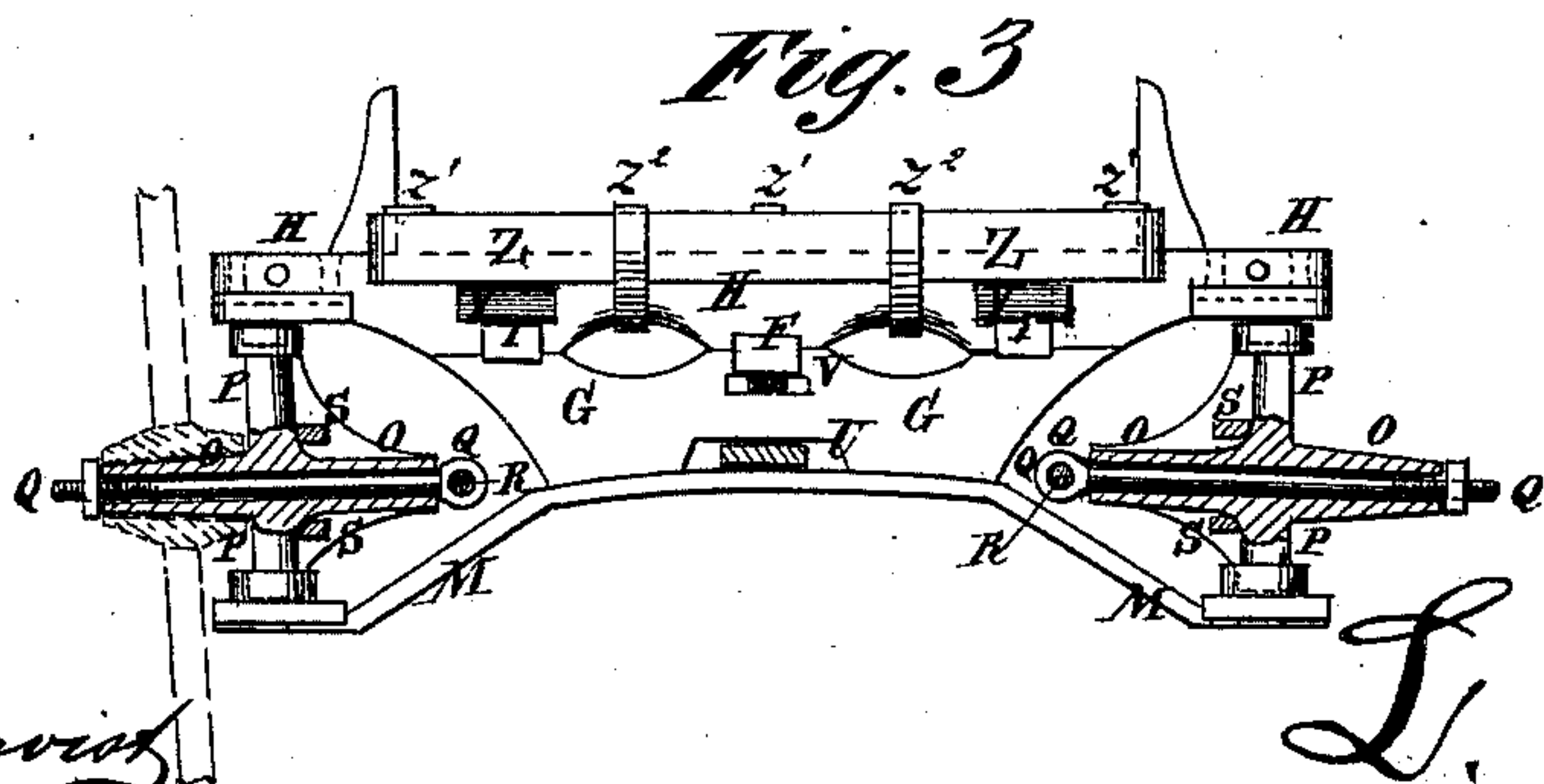
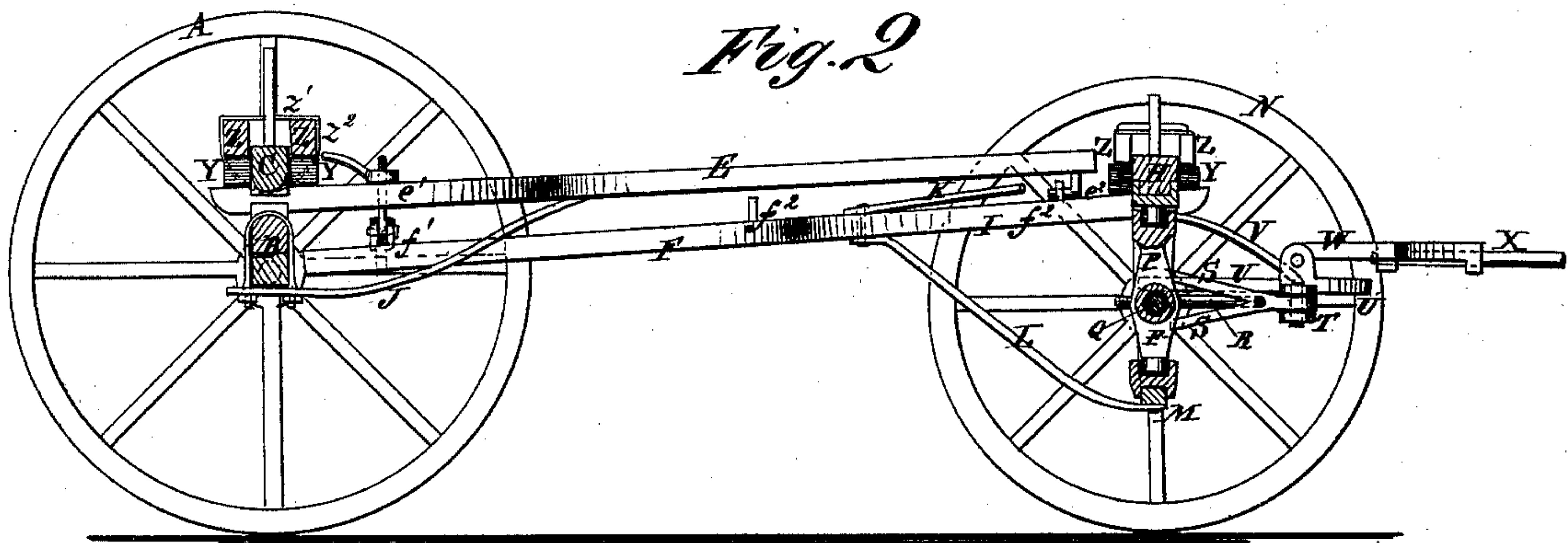
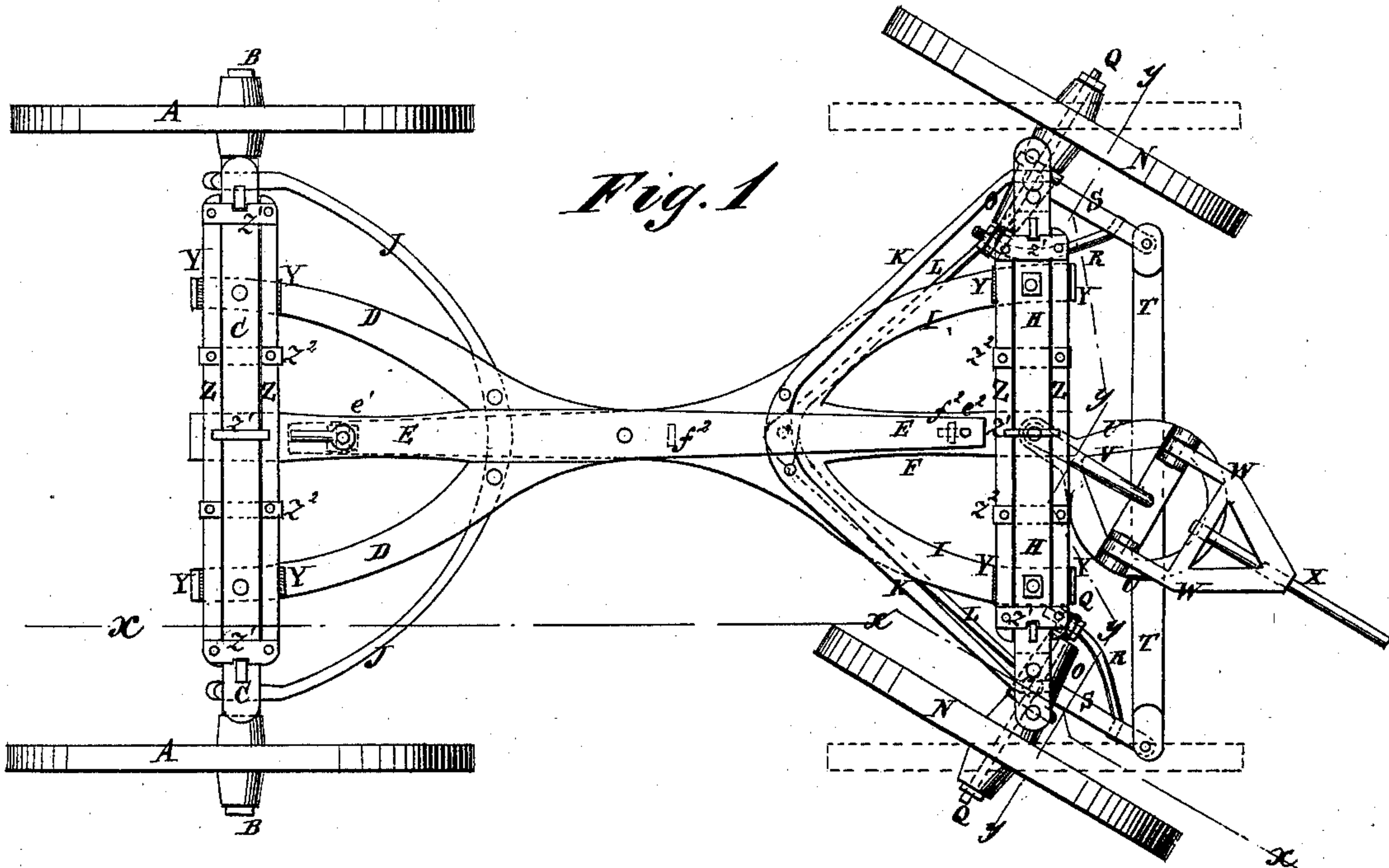


L. D. HURD.  
RUNNING-GEAR.

No. 170,858.

Patented Dec. 7, 1875.



WITNESSES:

A. W. Almgren

A. F. Terry

INVENTOR:

L. D. Hurd

BY

Munn & Co

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

LORENZO D. HURD, OF WELLSVILLE, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO THOMAS PULLER, OF SAME PLACE.

## IMPROVEMENT IN RUNNING-GEARS.

Specification forming part of Letters Patent No. **170,858**, dated December 7, 1875; application filed August 28, 1875.

*To all whom it may concern:*

Be it known that I, LORENZO D. HURD, of Wellsville, in the county of Allegany and State of New York, have invented a new and useful Improvement in Wagons, of which the following is a specification:

Figure 1 is a top view of my improved wagon, showing it cramped for turning. Fig. 2 is a vertical longitudinal section of the same taken through the line *x x x*, Fig. 1. Fig. 3 is a vertical cross-section of the same, taken through the line *y y y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with drawing, and then pointed out in the claims.

A are the rear wheels, which revolve upon the journals of the rear axle B, to which the rear bolster C and the rear hounds D are attached in the usual way. E is the upper part of the reach, the rear end of which is secured between the rear axle B and the rear bolster C, and which is also secured between the forward ends of the rear hounds D. To the rear end of the part E of the reach is secured an eyebolt, *e*<sup>1</sup>, by means of a hand-nut, the eye of which bolt *e*<sup>1</sup> is pivoted to lugs *f*<sup>1</sup> attached to the rear end of the lower part F of the reach. To the forward end of the upper part E of the reach is attached a hook, *e*<sup>2</sup>, to hook into an eye, *f*<sup>2</sup>, attached to the forward end of the part F. One or more eyes, *f*<sup>2</sup>, may be attached to the lower part F of the reach at different distances from its forward end, and one or more holes may be formed in the part E at corresponding distances from its rear end, to receive the eyebolt *e*<sup>1</sup>, so that the length of the gearing may be adjusted as required. The forward end of the lower part F of the reach is secured between the head-block G and the forward bolster H, and between the rear ends of the forward hounds I. This construction allows the two parts E F of the reach to roll upon each other, so that any one of the wheels may rise to pass over an obstruction or elevation, or sink to pass through a hollow, without affecting the other wheels or straining the reach. J is a brace-rod, bent into angular form, and secured at its bend or angle to the rear hounds

D, and the upper part E of the reach at their point of contact. The ends of the brace-rod J are secured to the end parts of the rear axle B. K is a brace-rod, bent into angular form and secured at its bend or angle to the upper side of the forward hounds I, and the lower part F of the reach at their point of contact. The ends of the rod K are secured to the ends of the forward bolster H. L is a brace-rod, bent into angular form and secured at its bend or angle to the lower side of the forward hounds I, and of the lower part F of the reach at their point of contact. The ends of the brace-rod L are attached to the ends of the bar M, attached to the lower side of the head-block G. N are the forward wheels, which revolve upon the journals of the short axles O, which may be hollow or solid. Upon the middle parts of the short axles O are formed studs or uprights P. The upper ends of the studs P have sockets formed in them to receive pivots attached to the lower sides of the ends of the forward bolster H. The lower ends of the studs P have pivots formed upon them which enter and work in sockets attached to the upper sides of the ends of the bar M. The studs P may be made hollow and have rods or long bolts passed through them and through the ends of the forward bolster H and the bar M, to strengthen the connection between said parts. Q are rods that pass through the short axles O, when made hollow, and have nuts screwed upon their outer ends to keep the wheels N in place upon their axles O. In the inner ends of the rods Q are formed eyes, through which pass the rear ends of the brace-rods R. The rear ends of the rods R have screw-threads cut upon them to receive the nuts which are screwed upon them, one upon each side of the ends of the rods Q, so that, by adjusting the said nuts, the position of the axles O may be adjusted to cause the wheels N to tend to run on or off said axles O. The forward ends of the brace-rods R are attached to the forward ends of the arms S, the rear ends of which are forked and are attached to or formed upon the studs P, above and below the axles O. To the forward ends of the arms S are pivoted the notched or slotted ends of the cross-bar T, by which the forward wheels N are kept parallel with each



other. U is a plate or frame which rests upon the middle part of the cross-bar T, and the rear end of which, or an arm formed upon said rear end, enters a notch in the lower edge of the head block G, and has a hole formed in it to receive the king-bolt. The plate or frame U is pivoted to the center of the cross-bar T, by a bolt, V, the upper part of which is bent to the rearward, enters a notch in the upper edge of the head-block G, and has a hole formed in it to receive the king-bolt. To the side parts of the plate or frame U are hinged the hounds W of the tongue X. To the hounds D and I, upon the front and rear sides of the bolsters C and H, are secured rubber blocks Y, upon which rest two pairs of bars, Z, which are thus in front and rear of the said bolsters C H, and which are kept in place by plates  $z^1$  attached to their upper sides, and by straps  $z^2$  attached to them, and which pass around the said bolsters C H. The false bolsters Z and rubber springs Y receive the load and prevent it from resting dead upon the bolsters C H.

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

1. The combination of the rods Q and the brace-arms R and their nuts with the pivoted hollow axles O and the arms S, substantially as herein shown and described.

2. The combination of the plate or frame U and the pivoting-bolt V with the cross-bar T, the pivoted axles O, and the king-bolt passing through the bolster H, the head-blocks G, and the bar M, substantially as herein shown and described.

3. The combination of the reach made in two parts, E F, and provided with the eyebolt and lugs  $e^1 f^1$  and the hook and eye  $e^2 f^2$ , with the rear bolster, axle, and hounds, and the forward bolster, head-block, and hounds, substantially as herein shown and described.

LORENZO D. HURD.

Witnesses:

WILLIAM SPARGUR,  
ZENAS H. JONES.