

(No Model.)

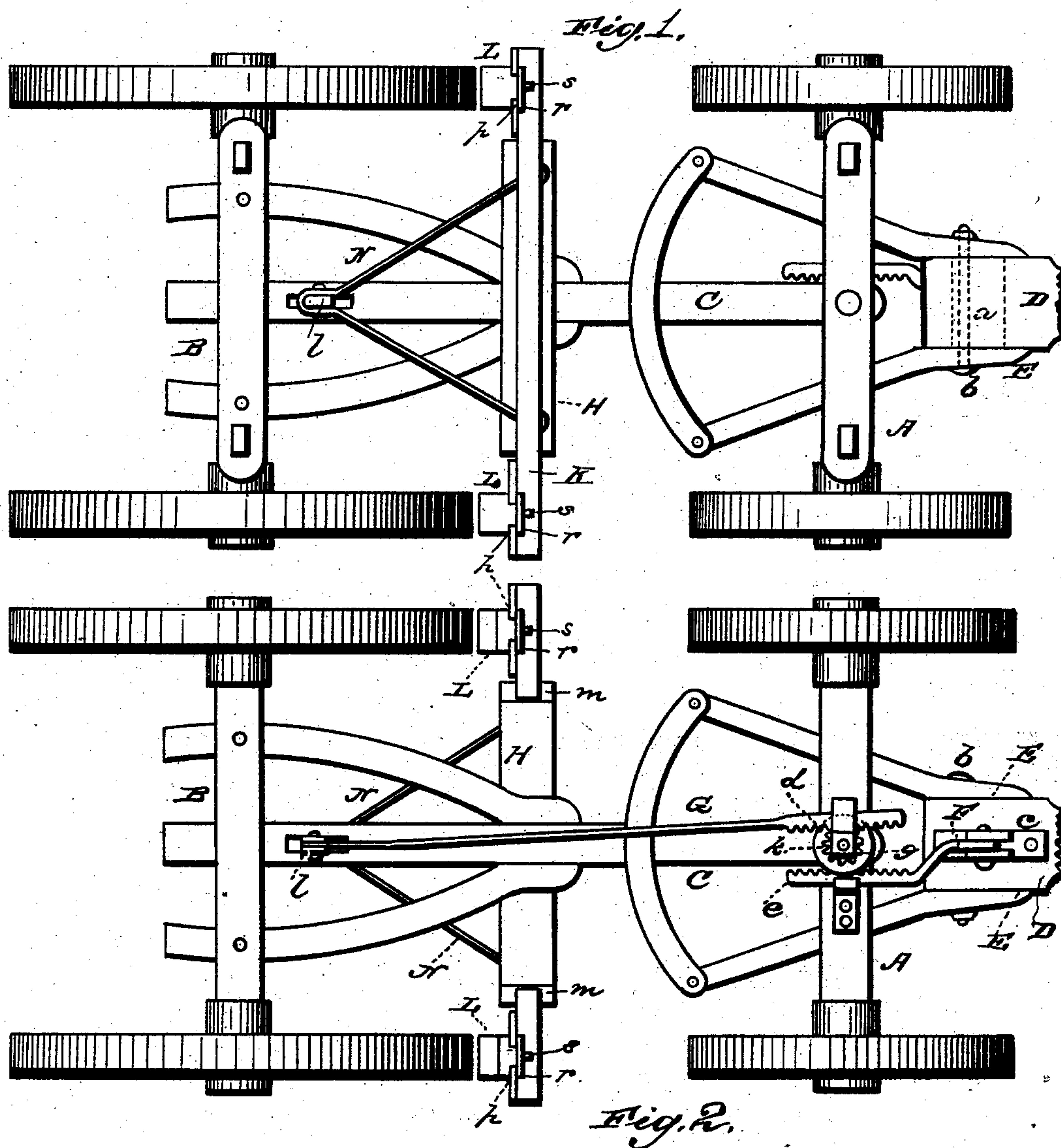
2 Sheets—Sheet 1.

J. D. RUSSELL.

WAGON BRAKE.

No. 292,139.

Patented Jan. 15, 1884.



WITNESSES
E. H. Bates,
J. J. Sheehy.

INVENTOR
James D. Russell,
by Anderson Smith
his ATTORNEYS

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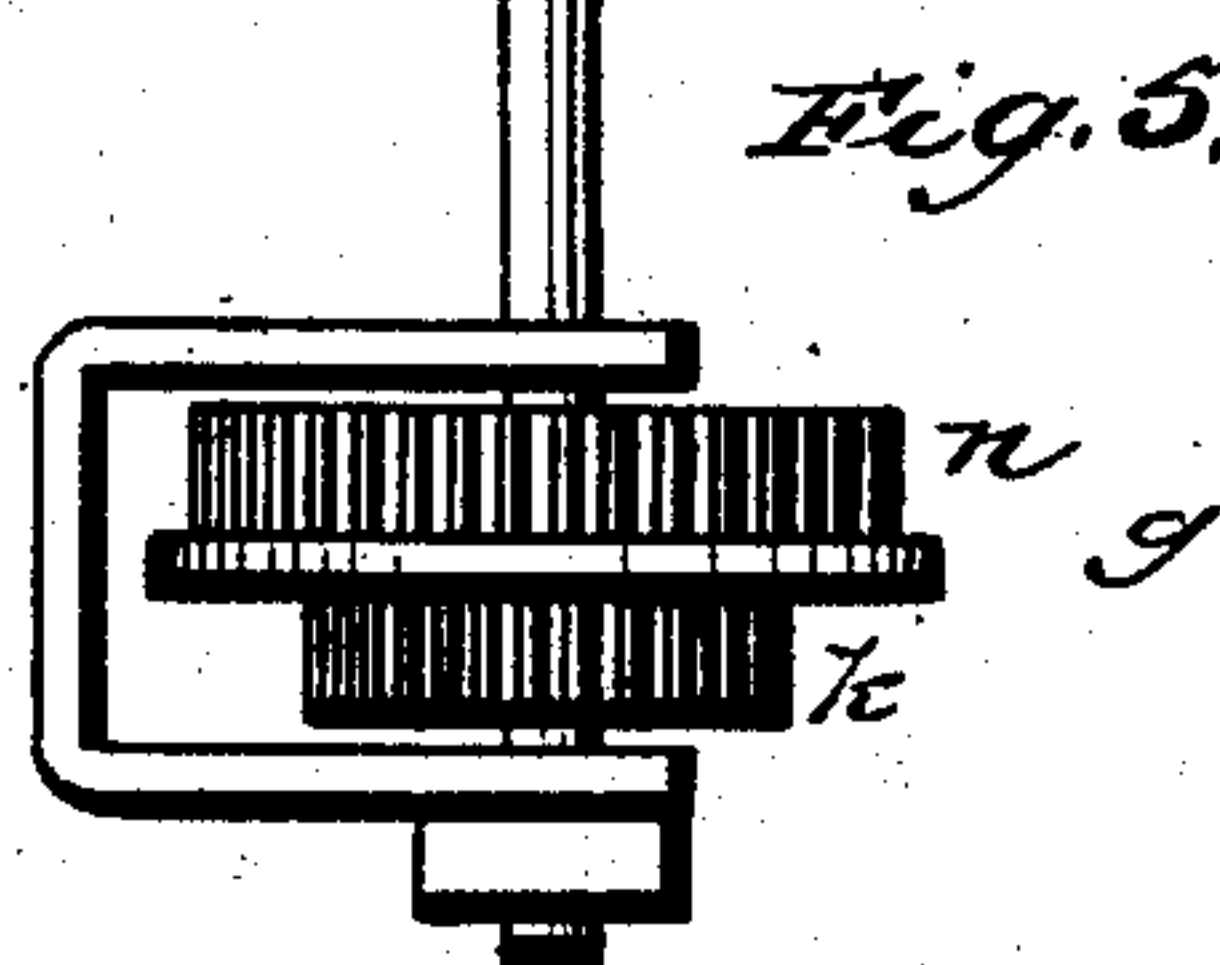
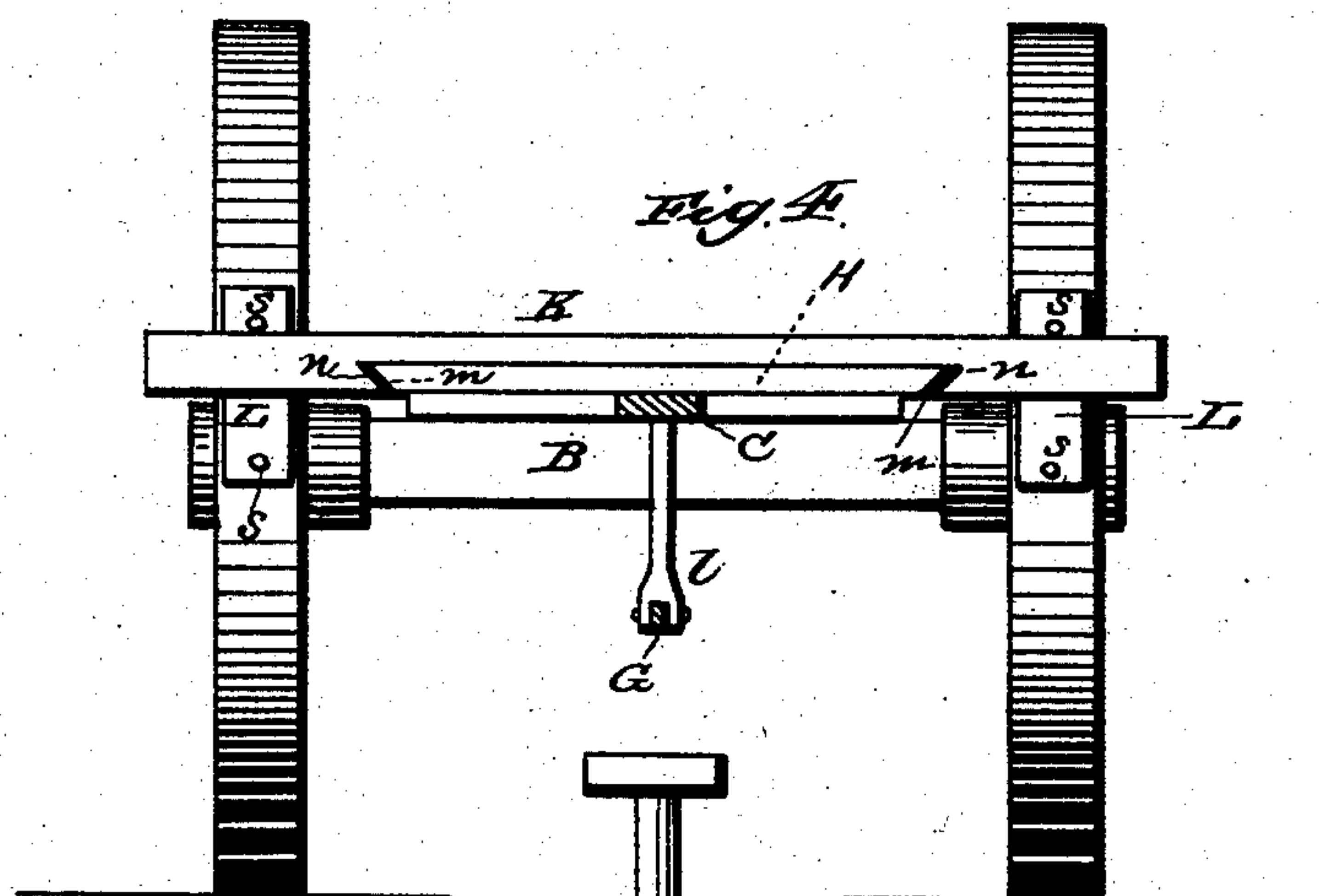
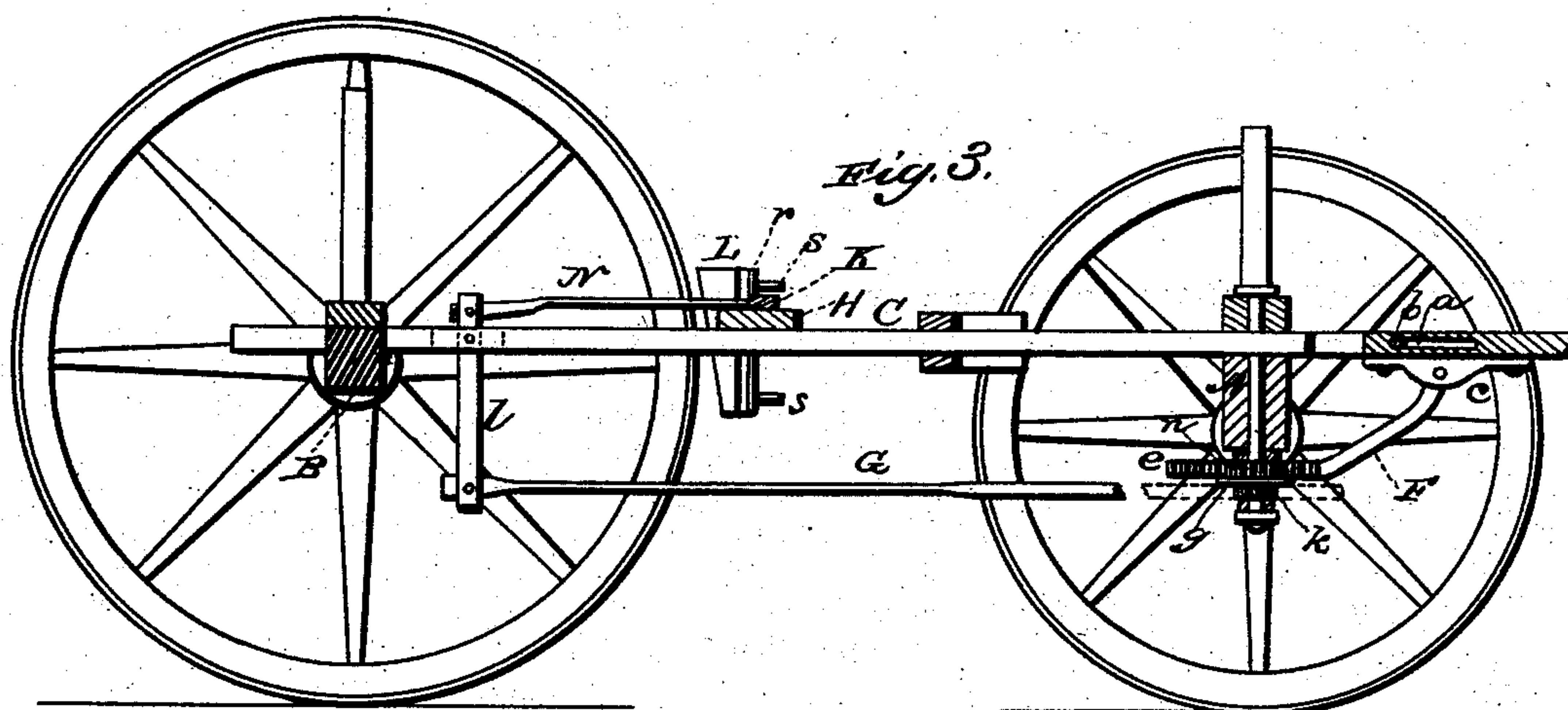
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UNITED STATES PATENT OFFICE.

JAMES D. RUSSELL, OF NORTH HAMDEN, NEW YORK.

WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 292,139, dated January 15, 1884.

Application filed May 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. RUSSELL, a citizen of the United States, residing at North Hamden, in the county of Delaware and State of New York, have invented certain new and useful Improvements in Wagon-Brakes; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a top view. Fig. 2 is a bottom view. Fig. 3 is a vertical section. Fig. 4 is a cross-section, and Fig. 5 is a detail view.

This invention has relation to automatic wagon-brakes; and it consists in the construction and novel arrangement of the rack-and-pinion connection under the front axle, whereby the brake-bar is operated; in the parallel moving brake-bar and its guide; in the vertically-slung brake-blades, and in the gunnel combination, with said brake-blades, of the parallel-moving brake-bar, its lever, the rod connections, and double pinion, all as hereinafter set forth.

In the annexed drawings, the letter A designates the front axle, and B the rear axle, of a wagon; C, the reach, and D the pole sliding in its seat E, formed in the front hounds. The pole is slotted at *a* horizontally and transversely for the passage of the transverse horizontal bolt *b*, whereby the tongue is connected to the hounds. A bearing, *c*, is secured to the under side of the tongue, and to the bearing is pivoted the front end of a connection, F, the rear end of which is provided with a rack, as shown at *e*, to engage a pinion, *g*, which is pivoted on the lower end of the king-bolt under the front axle. Usually I prefer to make the pinion double, or with two sets of teeth, the upper set, *n*, being arranged on a larger circle than the lower set, *k*, as shown in the drawings.

G represents a long connecting-bar, which is provided with a rack end, *d*, in front, to engage the pinion *g* on the opposite side from the connection F. The latter connection is designed to engage the teeth of the upper part of the pinion, which is of larger diameter than the lower part, which is engaged by the rack of the long connection. In this

manner an advantage is obtained in the leverage. The rear end of this connection is pivoted to the lower end of a lever, *l*, which is pivoted to a bearing on the rack, near the rear axle. To the rack is secured a transverse piece, H, formed with beveled or tenon-shaped ends *m*, which are engaged by notches or bearings *n* of the brake-bar K, which extends laterally in front of the rear wheels, and is provided with bearings *p* for the attachment of the brake-blocks L. These brake-blocks are of beveled form on their rub-faces, and are provided with vertical lateral flanged bearings *r*, which engage the bearings *p* of the brake-bar, so that the brake-blocks can slide up and down. Stops *s* are provided on the brake-blocks to limit their movement in either direction. The brake-bar is provided with oblique brace-rods N, which extend rearwardly from its lateral portions inwardly to the upper end of the short lever *l*, to which they are pivoted. In going down hill the forward pressure of the wagon carries the front hounds forward on the tongue, so that the pinion is turned by the front rack-bar, F, and operates to draw the long rack-connection G forward and through the lever *l*, to cause the brake-bar to move to the rear, putting on the brakes. The movement of the entire brake-bar is parallel to the line of motion of the wagon, so that the brake-blocks are applied squarely to the wheels.

In backing the wagon on level ground the wheels have a reverse movement, and as the brake-blades are arranged to slide in the vertical direction they are carried upward by the wheels, so that they do not interfere with the backing motion of the wagon.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wagon-brake, the combination, with a sliding tongue and brake-bar, of the rack-and-pinion connection under the front axle, substantially as specified.

2. The combination, with the vertically-sliding brake-blocks L and the parallel moving brake-bar K, of the lever *l*, the rack-connection F and G, and the double pinion *g*, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

Witnesses: JAMES D. RUSSELL.
ALBERT D. PEAK,
D. DOUGLASS BRANDT.