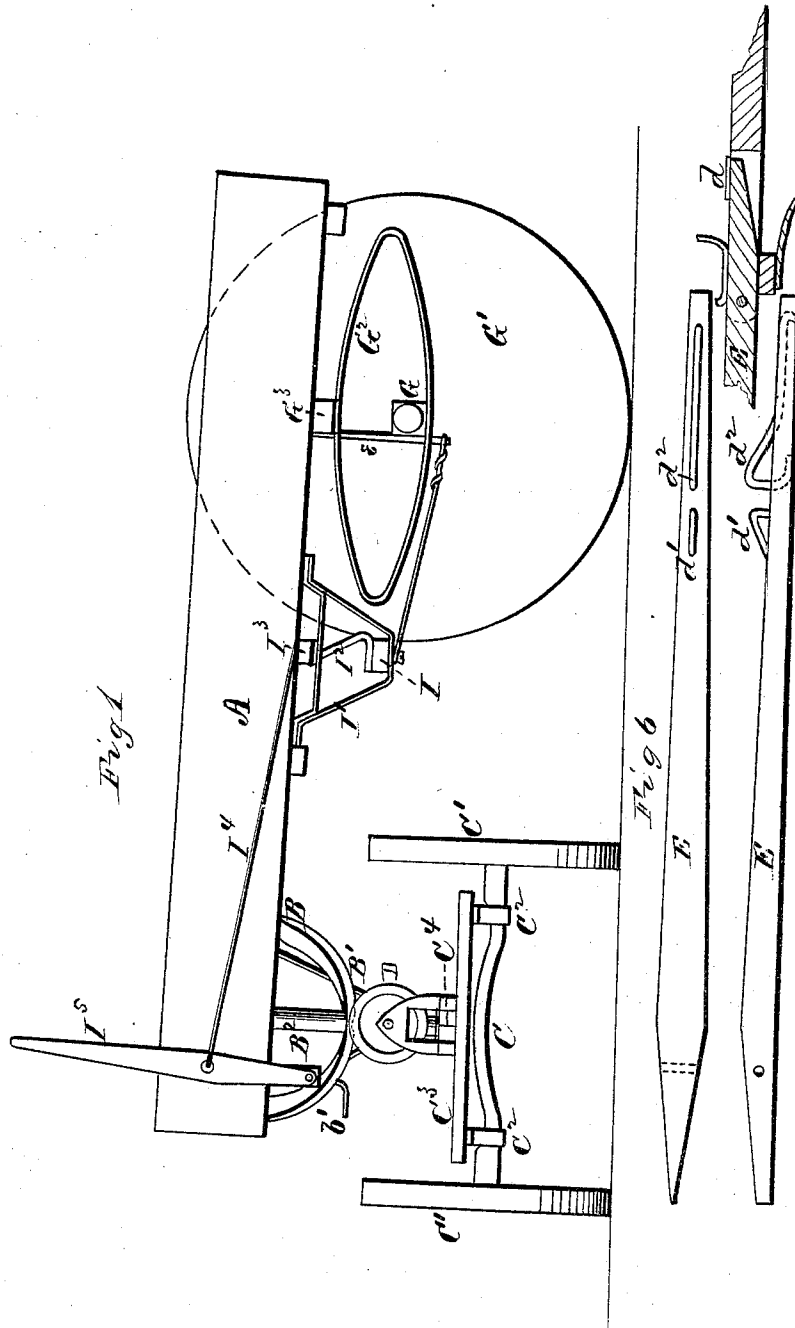


P. B. CUNNINGHAM
Running-Gear for Vehicles.

2 Sheets--Sheet 1.

No. 150,833.

Patented May 12, 1874.



WITNESSES.
Frank L. Ourand
C. L. Evert.

By

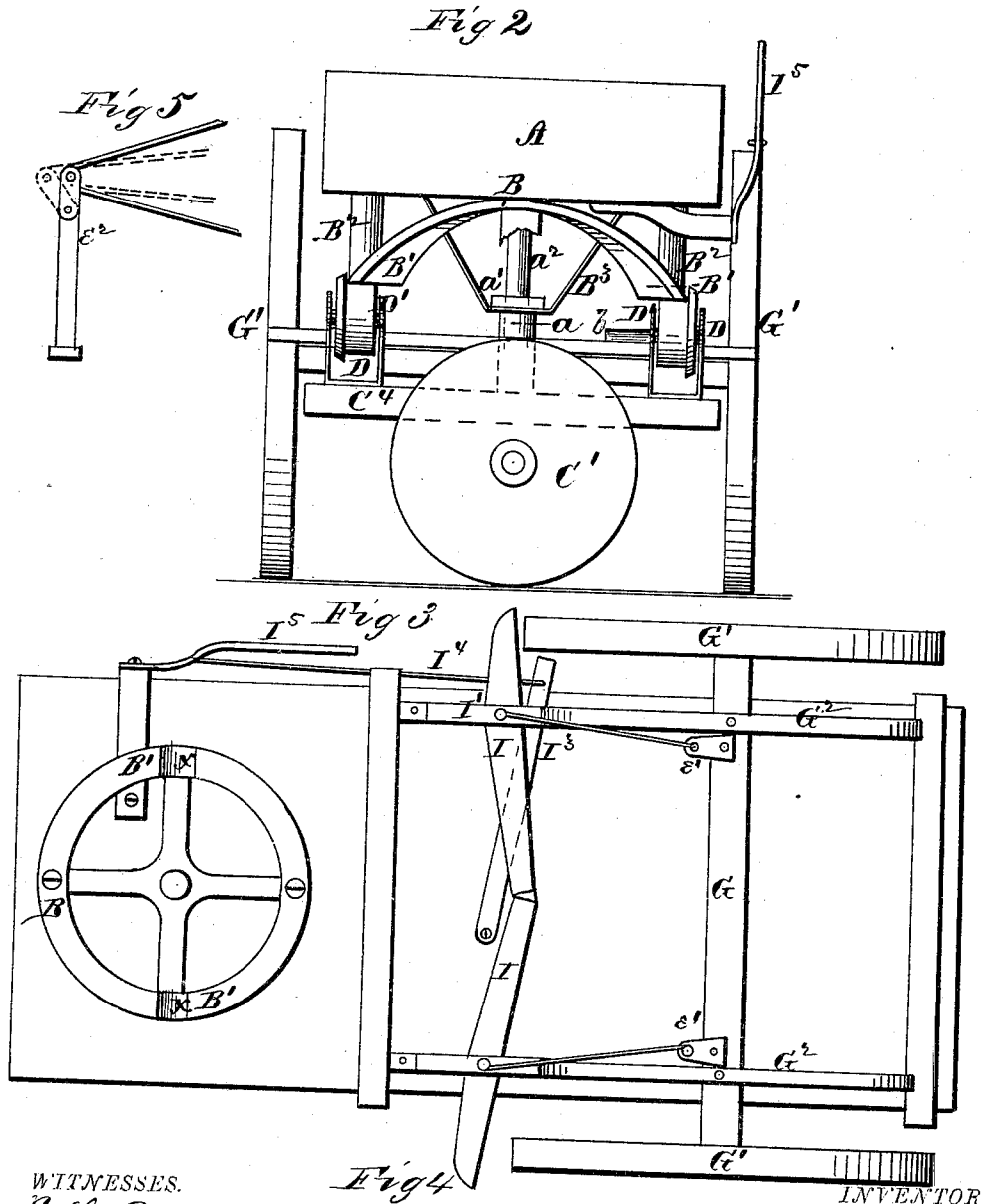
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UNITED STATES PATENT OFFICE.

PETER B. CUNNINGHAM, OF FREEHOLD, PENNSYLVANIA.

IMPROVEMENT IN RUNNING-GEARS FOR VEHICLES.

Specification forming part of Letters Patent No. **150,833**, dated May 12, 1874; application filed March 18, 1874.

To all whom it may concern:

Be it known that I, PETER B. CUNNINGHAM, of Freehold, in the county of Warren and in the State of Pennsylvania, have invented certain new and useful Improvements in Wagon; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of the running-gear of a wagon, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of a wagon embodying my invention, and showing the front wheels turned to one side. Fig. 2 is a front-end view of the same. Fig. 3 is a bottom view of the wagon with the front wheels and axle removed. Fig. 4 shows a part of the brake-levers. Fig. 5 is a view of a jointed sliding bolt attached or connected to one end of a buggy-spring. Fig. 6 shows the construction of the tongue.

A represents the wagon-body, constructed in any of the known and usual ways, on the under side of which, near the front end, is secured a circle, B. This circle lies flat on the bottom of the wagon-body at the front and rear, and the sides are bent downward, forming cams B¹, which are supported or braced by means of vertical posts B². C represents the front axle, with a wheel, C¹, at each end. This axle is supported upon two side springs, C² C². The ends are attached to two cross-bars or springs, C³ C³. The bars or springs C³ are securely attached at their centers to the under side of a bar or beam, C⁴. In the center of this beam is firmly secured a tube or sleeve, a, which extends vertically upward through a bracing-frame, B³, arranged on the under side of the wagon-body in the center of the cam-circle B. The sleeve a is, at its upper end, provided with a circumferential flange, a¹, to form a stop, so that the sleeve cannot come out of

the frame B³. a² is the king-bolt, attached to the bottom of the body A, and passing down through the tube or sleeve a. It will thus be seen that the axle C is entirely independent of the king-bolt. On the upper side, at each end of the bar or beam C⁴, is a frame, D, containing a flanged roller, D', to run on the circle B. In turning the front axle C to either side, the rollers D' D' run up the cams B¹ B¹, thereby raising the front end of the wagon-body, which admits of the use of high front wheels, and allows them to pass under the wagon-body. At the same time it places the wagon-body in an inclined position, facilitating the loading and unloading of the same. In the extreme point of each cam B' is a shallow recess, x, in which the rollers D' settle when the axle C is turned around, so as to prevent any accidental turning of the same. The journal of either or both of the rollers D' is extended inward, and provided with a friction-roller, b, which, when the axle is turned in proper position for running, passes above an L-shaped arm, b', attached to the frame B³, which prevents the wagon-body from flying up when the front wheels pass over ruts in the road or other obstructions. E represents the tongue, the rear end of which is pointed and inserted in a V-shaped notch or slot made in the end of the bar or beam C⁴, and the tongue is pivoted therein. When the tongue is in a horizontal position it rests on the front bar C³, and its rear end held by a plate, d, secured on top of the bar C⁴, thus making it a stiff tongue. By raising the front end of the tongue it becomes limber, and by this arrangement the draft will be much easier on the horses. On the under side of the tongue E is a rigid stop, d', and in front thereof a spring-stop, d², between which two stops the neck-yoke is held so that it cannot slip off, and yet be easily removed when desired. G represents the hind axle, with a wheel, G¹, at each end. This axle is supported by two elliptic springs, G² G², attached to a cross-bar, G³, on the under side of the wagon-body A. To this cross-bar, near each spring, is secured a rod, e, which passes vertically down through a perforated plate or arm, e', secured to the axle G. This device secures the perfectly-perpendicular vibration of the hind end of the wagon-body on its springs.

On vehicles where two springs are used at right angles with the axle, as above described, the rods *e e* are perfectly straight and solid; but on buggies or other vehicles using only one spring parallel with the axle, a rod, *e*², is used, which is jointed near the upper end, and the spring is attached to the upper end of the rod, one rod being used at each end of the spring, which allows or compensates for the contraction and expansion of the spring. I represent two brake-levers pivoted to two frames, I¹ I¹, attached on the under side of the bottom of the wagon-body, so as to be removed therefrom a suitable distance and be out of the way of the wheels. The inner ends of these brake-levers are pivoted to the arms of a T-shaped connection, I², which extends upward, and is fastened to the inner end of a lever, I³. The outer end of this lever is, by a rod, I⁴, connected with a lever, I⁵, which is pivoted on the side of the box A, near the front end. This arrangement gives a strong power of the brakes on the wheels.

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

1. The circle B, provided with cams B¹ B¹ on opposite sides, the extreme point of each cam being provided with a recess, *x*, substantially as and for the purposes set forth.

2. The combination, with the axle C and wheels C¹ of the frame C² C³ C⁴ and rollers D', to act against the cam-circle B, substantially as and for the purposes set forth.

3. The friction-roller *b* upon the extended journal of the roller D', in combination with the L-shaped arm *b*¹, for the purposes set forth.

4. The flanged tube *a*, attached to the axle C, in combination with the frame B³ and the king-bolt *a*², both of the latter attached to the bottom of the wagon-body, substantially as and for the purposes set forth.

5. The tongue E, pivoted in a slot on the bar C⁴, in combination with the bar C³ and plate *d*, substantially as and for the purposes set forth.

6. The combination of the two springs G² G², surrounding the axle G, and the stiff rods *e*, plates *e*¹, and cross-bar G³, all substantially as set forth.

7. The jointed rod *e*², in combination with a vehicle-axle and a single spring, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of March, 1874.

P. B. CUNNINGHAM.

Witnesses:

A. N. MARR,
C. L. EVERT.