

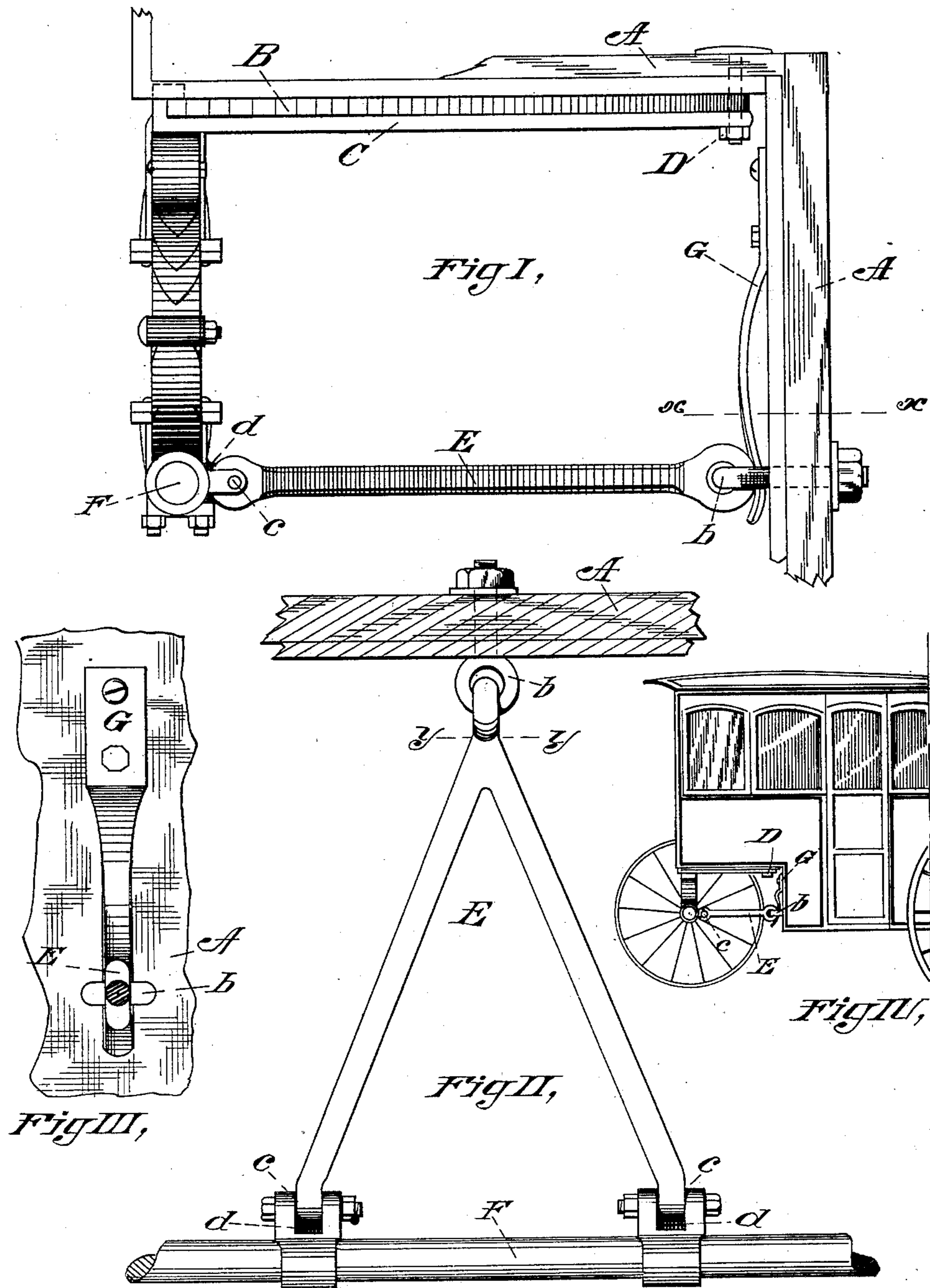
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M. O. WICKES.
LOW DOWN SHORT TURN GEAR FOR VEHICLES.

(Application filed Mar. 20, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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LOW-DOWN SHORT-TURN GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 660,608, dated October 30, 1900.

Application filed March 20, 1900. Serial No. 9,370. (No model.)

To all whom it may concern:

Be it known that I, MILTON O. WICKES, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Low-Down Short-Turn Gear for Vehicles, of which the following is a specification.

My improvements relate to that class of vehicles used for mercantile purposes by tradesmen—such as pie-men, milkmen, butchers, and others—and is prominently distinguished by the king-bolt being arranged in rear of the front axle to permit the vehicle to turn in short space and above the level of the axle in line with the top of the front spring or springs, the object of the invention, in brief, being the relief of the king-bolt and the turning-gear to which it is immediately connected; and the invention consists in the combination and arrangement, as hereinafter described, and more fully set forth in the claims.

My invention is fully illustrated in the accompanying drawings, in which—

Figure I is a vertical section of so much of a vehicle-body with my device combined as is necessary to illustrate the invention. Fig. II is a top plan view of a portion of my device and on the dotted line $x x$ of Fig. I. Fig. III is a front elevation of a part of the device and on the dotted line $y y$ of Fig. II, and Fig. IV is a partial side view of a vehicle in reduced scale having my improvements combined therewith.

Referring to the drawings, A is a portion of the body-frame of a low-down vehicle, a section near the medial center of said body.

B is the semicircle or fifth-wheel secured to the under part of the body, upon which the segment C, secured at one end to the top of the spring, turns in cutting the forward wheels.

D is the king-bolt by which the inner end of segment C is hinged to the body A as a turning-center for the front wheels and by which the strain of the running-gear is transmitted to the body. So much of the construction of a low-down vehicle is old, and also a brace in the form of a straight rod rigidly attached at one end to the axle in the medial center and hinged at its other end to the ve-

hicle-body in a line with the king-bolt has been used; but in cutting the wheels or in attempting to move the vehicle in either direction with the wheels cut said straight brace becomes neither a tie nor a strut to transmit the strain in a line at right angles to the axle to the carriage-body, and as a consequence in either starting to cut the wheels or to restore them from a cut position the angle at which the force is applied buckles or bends the straight brace, so that in practice it has failed to be an efficient reinforce to the king-bolt and segment C, also from said brace being hinged at only one end the lost motion necessary at a hinge to permit the up-and-down motion of the front axle was concentrated at one point, causing the hinge to soon wear out and rendering it impossible to use a spring capable of taking up the rattle.

In my invention the brace E, as more particularly shown in Fig. II, is in the form of a V, having a hinge at each of its three ends. One end, forming the apex of the V, is hinged to an eyebolt b , secured to the body or its frame, so that said hinge is in vertical alignment with the king-bolt, and the other two ends at equal distance from the medial center of the front axle are secured on hinges $c c$ to the axle F. The brace E thus hinged is parallel to the segment C, and with the same radius and from its configuration one or the other of its legs is always in direct line with force transmitted by the axle F. The forked construction of the brace E makes each arm of said brace the base of a triangle, of which the segment C is the apex. Consequently the structure as a whole is braced not only in lateral but in vertical direction, and while it permits yielding to the inequalities of the ground is really very strong and rigid as against excessive movement.

The hinges $c c$ are formed of the ordinary draw or thill couplings, with their bolts passing through eyes in the ends of the brace E, by means of which wear of any kind at these joints can be quickly taken up, or if a new brace E was required, owing to too much wear on any of its three hinges, the brace can be removed without disturbing any part of the vehicle and can be replaced by a new one made by any country blacksmith.

By the employment of three hinges the rattle due to the longitudinal motion when the vehicle has the pulling strain nearly in equilibrium or to the up-and-down motion can be taken up by springs at all three joints, the strain being so divided that springs which can be applied in the limited space are effective, and to that end rubber pieces *d d* are inserted between the extreme ends of the brace-
legs and the corresponding surface of the thill-couplings, as shown in Figs. I and II, and a binding-spring G, secured to a wall of the body A, above eyebolt *b*, has its free end passed through the eye in rear of the brace end to normally bear on said brace end, with space within the eye to give to the motion of the brace. The effect of this binding-spring, in conjunction with the rubber, is to make a noiseless vehicle, and the spring from its construction can be easily removed to be replaced or retempered where it has set.

In Fig. IV the relative position of the turning-gear is shown, together with the shape of the vehicle.

By these means a brace is constructed to reinforce the fifth-wheel which has a largely-increased life and one which can be removed

easily for repairs or can be made anew by any ordinary workman available in the country.

Now, having described my invention, what I claim is—

1. In combination with the V-shaped brace E provided with springs at the axle-points of attachment, as shown—of binding-spring G, secured to a wall of the body above eyebolt *b*, and adapted to have its free end bear upon the end of the brace within the eyebolt, as and for the purpose set forth.

2. In a vehicle as described, the “fifth-wheel” or segment secured to the under part of the body, the segment C pivoted to the rear part of said fifth-wheel by the king-bolt, and connected to the spring in front of said king-bolt, the axle and spring mounted thereon as described, and the forked brace having each of its branching ends connected to the axle, and having its closed end pivoted to the downward extension of the body directly under the king-bolt, all combined substantially as described.

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