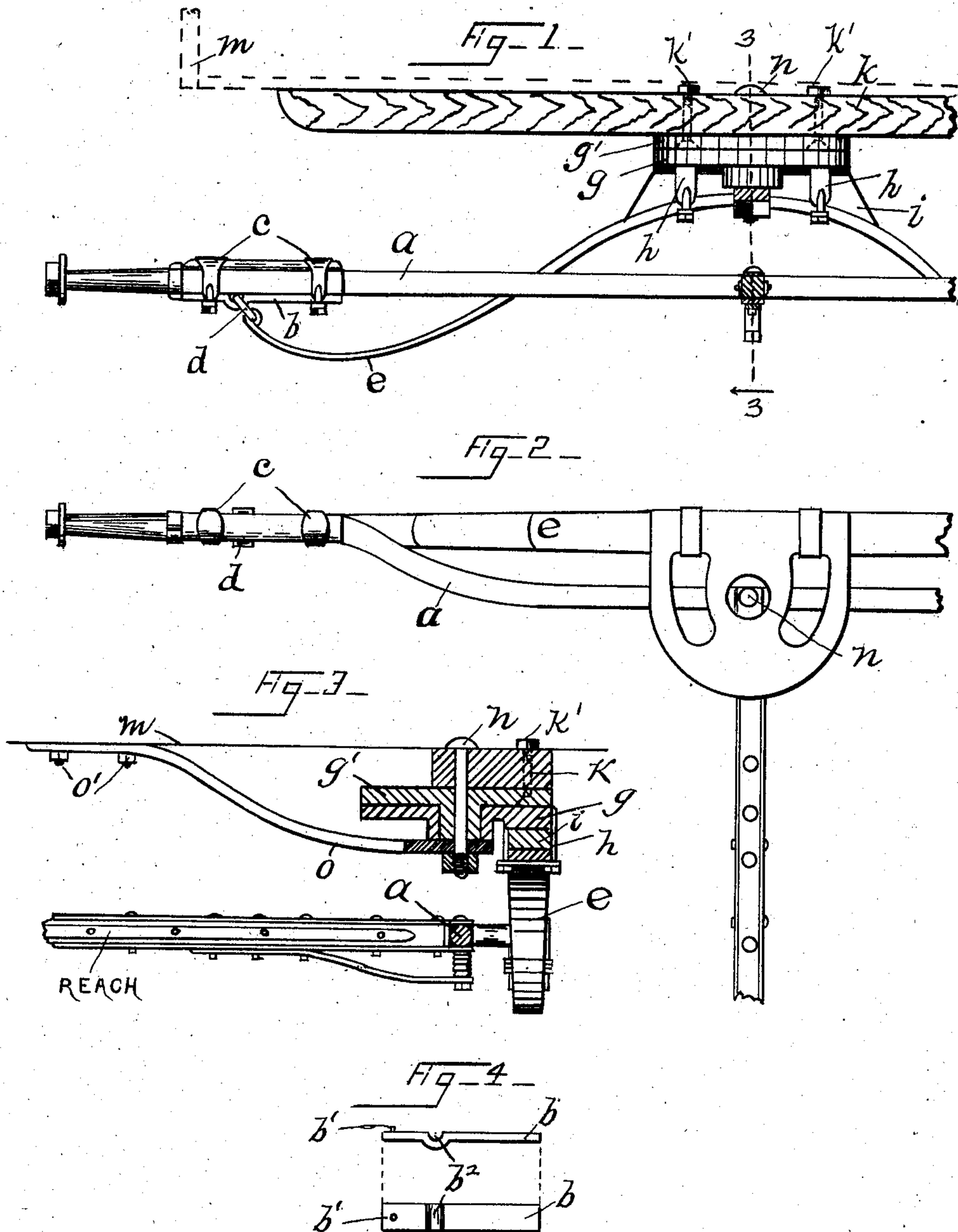


No. 827,445.

PATENTED JULY 31, 1906.

C. H. HOLDREDGE.  
VEHICLE GEAR.

APPLICATION FILED JAN. 23, 1906.



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Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES H. HOLDREDGE, OF WESTERLY, RHODE ISLAND.

## VEHICLE-GEAR.

No. 827,445.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed January 23, 1906. Serial No. 297,410.

*To all whom it may concern:*

Be it known that I, CHARLES H. HOLDREDGE, a citizen of the United States, residing at Westerly, in the county of Washington and State of Rhode Island, have invented certain new and useful Improvements in Vehicle-Gears, of which the following is a specification.

This invention is in that class of vehicle-gears in which a horizontally-cranked axle is used, my object being to improve the means provided for connecting the spring to the axle and also to improve the connection between the spring and the body of the vehicle.

My said invention is illustrated in the annexed drawings, Figure 1 being a rear side elevation of the major portion of the front axle, showing also the spring connected thereto by my improved means and showing also an improved form of circle-plate by means of which the body is mounted upon the front spring. Fig. 2 is a top view of the parts shown in Fig. 1 with the rocker-arm and upper half of the circle-plate removed. Fig. 3 is a transverse sectional view taken on line 3-3 of Fig. 1 looking in the direction of the arrow. Fig. 4 shows edge and plan views of the plate by means of which the spring end is connected to the axle-arm.

Referring to the drawings, the letter *a* denotes a horizontally-cranked axle, and *b* indicates a metallic plate secured to the under side of the axle-arm by ordinary clips *c*. The plate *b* is provided with a stud *b'*, that engages a corresponding hole in the under side of the axle-arm to prevent both endwise and lateral disarrangement of the plate *b* with respect to said arm in the event that the clips *c* become loosened. The plate *b* is formed with a depression *b<sup>2</sup>*, which serves as a half-bearing to receive and support a link *d*, whose free end portion supports the spring *e*, as is best seen in Fig. 1 of the drawings.

By means of the described arrangement of parts a low-hung gear is provided, and the spring is allowed to play freely without interference with the central or body portion of the axle. Because of this peculiar arrangement of axle and spring by which the body of the axle is located out of vertical alinement with the said spring I have found it necessary to provide a novel form of circle-plate for supporting the front portion of the body. Said plate is formed of two sections

*g* and *g'*. The lower of said sections *g* is secured to the spring *e* by clips *h*, a block *i*, of wood or other suitable material, being interposed between the circle-plate section *g* and the spring, the lower face of the said block being shaped to conform to the curve of the spring, so that a substantial bearing and support for the circle-plate are provided. The upper plate *g'* is secured to a rocker-arm *k* by bolts *k'*, and the body *m* is mounted upon the said rocker-arm, as seen in Fig. 1 of the drawings.

The two sections *g g'* of the circle-plate are pivotally connected by a king-bolt *n*, that is located immediately over the cranked axle *a*, (see Figs. 2 and 3,) and the lower end of said bolt lies in and is supported by a brace *o*, that extends rearward and upward and is secured to the body of the vehicle by bolts *o'*. It will now be understood that the upper circle-plate section *g'* is rigidly secured to the body of the vehicle, while the lower section *g* is secured to and adapted to rock with the front spring, the pivotal connection *n* between the circle-plate sections being located in vertical alinement with the front axle.

My described construction provides a low-hung gear in which all of the component parts are easily accessible and may be cheaply produced and assembled.

Having thus described my invention, I claim—

1. The combination with a horizontally-cranked axle, of transversely-depressed plates clipped to the axle and having studs engaging openings in the under side of the axle-arm, links pivotally held in said transverse depressions, and a spring connected at its ends to said links.

2. The combination with a horizontally-cranked axle, of transversely-depressed, plates clipped to the axle and having studs engaging openings in the under side of the axle-arm, links pivotally held in said transverse depressions and springs connected at its ends to said links, and a circle-plate secured to said spring and formed in sections with their pivotal connection in vertical alinement with the cranked portion of said axle.

3. The combination with a horizontally-cranked axle, and a spring connected pivotally at its ends to said axle, of a circle-plate in sections, one of which is secured to said spring, a rocker-arm to which the other section is secured, and a king-bolt pivotally con-



necting said sections and arranged in vertical alinement with the cranked portion of said axle.

4. The combination with a horizontally-  
5 cranked axle, and a spring connected pivotally at its ends to said axle, of a circle-plate in sections, one of which is secured to said spring, a rocker-arm to which the other section is secured, a king-bolt pivotally connect-  
10 ing said sections and arranged in vertical alinement with the cranked portion of said

axle, and a brace through which said bolt passes and upon which the lower section of the circle-plate rests, the other end of said brace being secured to the wagon-body. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. HOLDREDGE.

Witnesses:

FRANK H. ALLEN,  
MAY F. RITCHIE.