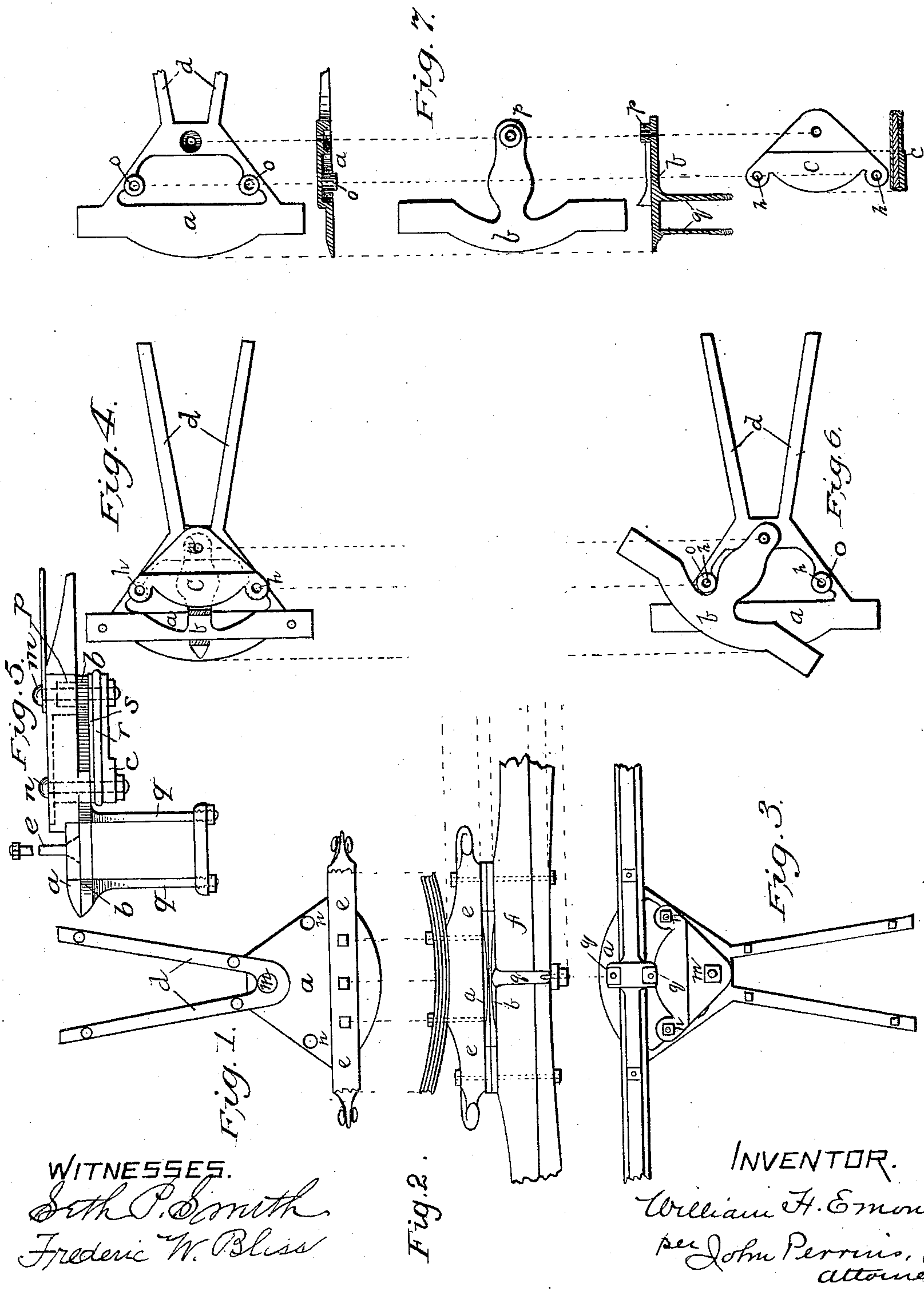


(No Model.)

W. H. EMOND.  
CARRIAGE GEAR.

No. 574,313.

Patented Dec. 29, 1896.



WITNESSES.

*Seth P. Smith*  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. EMOND, OF BOSTON, MASSACHUSETTS.

## CARRIAGE-GEAR.

SPECIFICATION forming part of Letters Patent No. 574,313, dated December 29, 1896.

Application filed November 17, 1894. Serial No. 529,121. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. EMOND, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Carriage-Gears, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to carriages, and more particularly to that class of carriage that has four wheels, the forward wheels and axle swinging horizontally on a vertical pivot.

The objects of my invention are, first, to dispense with the safety-brace and the absolute necessity for a king-bolt; second, to place the turning-center back of the forward axle; third, to provide a safety-clamp between the turning-center and head-block, and, fourth, to provide an adjustable, strong, and anti-rattling bearing or gear. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan of the gear. Fig. 2 is a front elevation of the same, showing forward axle, head-block, and spring. Fig. 3 is a bottom plan of the same, showing safety-plate. Fig. 4 is a bottom plan of the gear with concealed portions shown by dotted lines. Fig. 5 is a side elevation in part section of the device. Fig. 6 is a bottom plan of the same with safety clamp-plate removed. Fig. 7 is plans and sections of the several parts.

Similar letters in the several figures of the drawings designate like parts, referring to which—

*a* is the upper plate of the gear, having reach-plates *d*, to which are secured the reaches of the gear and to the front of which is bolted the head-block *e*.

*b* is the movable plate of the gear, and is secured to the forward axle *f* by means of clamps *g*. It is also provided with a thimble *p*, designed to engage in a socket in the upper plate *a* at *m*, and is secured by a bolt which passes vertically through the thimble-joint thus formed.

*c* is the lower or safety plate, which is bolted to plate *a* under plate *b* and forms a clamp between the head-block *e* and turning-

center *m*. It is held in position and is adjusted by bolts *n n*.

*d* are the reach-plates of the gear. These reach-plates are a part of plate *a*, and to them are bolted the carriage-reaches.

When adjusted, plates *a* and *c* are stationary.

Plate *b*, carrying with it the forward wheels and axle, to which it is secured, turns upon the pivot made by the thimble *p*, and for greater security a bolt passes vertically through the thimble-joint *m*. This bolt is not essential, however, and may be altogether omitted.

The wearing-surface of this gear is between the under face of plate *a* and the upper face of plate *b*. The upper face of the safety clamp-plate *c* is covered with rubber, which in turn is covered with a thin plate of steel. The elasticity of the rubber makes it possible to tighten the gear from time to time, so as to avoid all possibility of rattling.

By means of this device I dispense with the safety-brace and reduce the importance of the king-bolt. I do, in fact, use a bolt at the turning-center which corresponds with a king-bolt, but it is simply as an additional precaution and item of strength. It is not actually necessary to the successful operation of the gear and may be altogether dispensed with, while in the old construction the king-bolt is of vital importance, it being necessary, first, as a turning-center, and, second, as a means of holding the gear together.

The safety-clamp, located between the turning-center and head-block, is of the greatest importance, as it provides a strong and durable means of securing the gear together independent of the turning-center itself and, together with the thimble-joint, makes a most effective construction. By using the safety-clamp too we have a most convenient method of adjusting the gear and overcoming any tendency to rattle consequent upon the wearing of the bearing-surfaces.

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

1. In a carriage-gear, the upper bearing-plate provided with one or more reach-sock-

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ets, the lower bearing-plate and means for cushioning said plate against the intermediate plate: in combination therewith, the intermediate plate regulated to swing in the  
5 sector of a circle whose pivotal point is rearward of the forward axle, all substantially as shown and for the purposes set forth.

2. In a front carriage-gear, the combination of an upper bearing-plate, an intermediate  
10 bearing-plate having a rearward extension, and a safety clamp-plate provided with a cushion of rubber or equivalent material and

also provided with a light rearward extension for engaging the king-bolt nut at the turning-center, all as shown and described. 15

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 15th day of November, A. D. 1894.

WILLIAM H. EMOND.

Witnesses:

SETH P. SMITH,  
FREDERIC W. BLISS.