

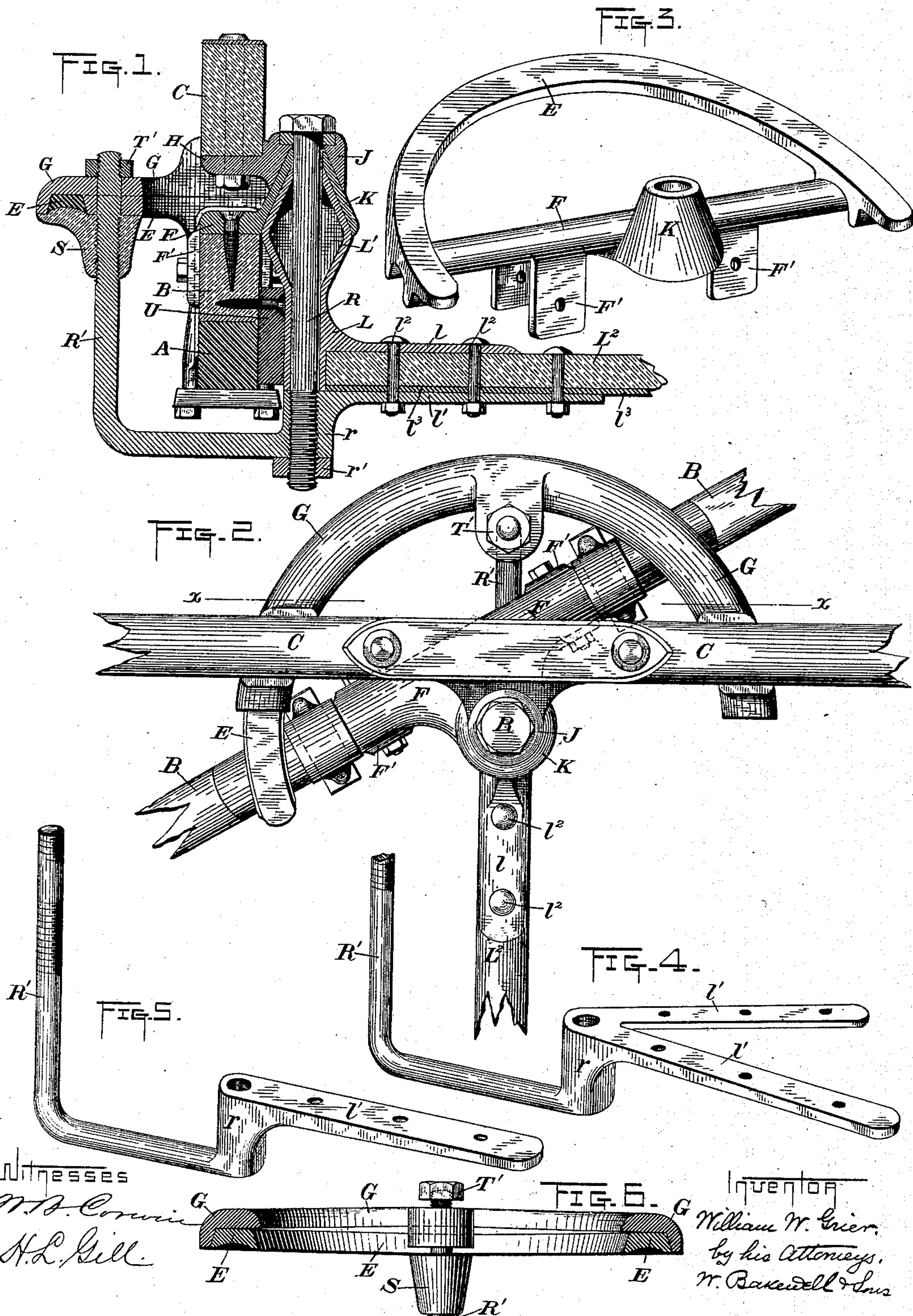
(No Model.)

W. W. GRIER.

FIFTH WHEEL.

No. 384,758.

Patented June 19, 1888.





# UNITED STATES PATENT OFFICE.

WILLIAM W. GRIER, OF HULTON, PENNSYLVANIA.

## FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 384,758, dated June 19, 1888.

Application filed June 9, 1887. Serial No. 240,737. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. GRIER, of Hulton, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fifth-Wheels; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement on fifth-wheels, particularly that class of fifth-wheels for which I have already obtained Patents Nos. 345,585 and 362,504.

It comprises four main features of improvement over the fifth-wheels described in these patents: First, the construction of the brace attached to the upper circle-plate by connecting it to the reach or making it integral with the reach-irons; second, the construction of the shoe or gib S (shown in Patent No. 362,504) with a screw-thread and screwing it on the brace; third, the interposition of a plug or filling between the axle and the king-bolt when the king-bolt is back of the axle, and, fourth, the bowing of one or both of the circle-plates, so as to prevent rattling, and in certain subordinate details.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical section of a fifth-wheel applied to the head-block and front axle of a vehicle and provided with my improvement. Fig. 2 is a plan view thereof. Fig. 3 is a perspective view of the lower circle-plate detached, showing the lugs by which it is attached to the axle. Fig. 4 shows the application of my invention to a double reach. Fig. 5 shows its application to a single reach. Fig. 6 is a vertical cross-section on the line *xx* of Fig. 2.

Like symbols of reference indicate like parts in each of the figures.

In the drawings, A is the front axle of a vehicle.

B is the axle-bed, placed on the axle, and C is the bolster or head-block.

E is the lower circle-plate of the fifth-wheel, which is secured to the axle-bed B by means of a saddle, F, and lugs F', which project downwardly from the saddle and are bolted to the axle-bed. These lugs and their connection with the saddle F are clearly shown in Figs. 1 and 3.

G is the upper or fixed circle-plate, which is

secured to the under side of the head-block by a saddle, H. The king-bolt R extends vertically through a lug or collar, J, which projects from the saddle H back of the head-block and through a similar collar, K, which projects back from the saddle F. The collar K is cone-shaped and nests within the collar J, and their axial lines are coincident. One of them serves to connect the upper circle-plate and the other to connect the lower circle-plate with the king-bolt.

L is the spring or reach hanger, which has a conical tubular socket, L', fitting around the king-bolt R and within the collar K. This nesting of the parts together makes them very compact and strong. The hanger L is suitably connected with the reach L<sup>2</sup>, preferably by means of a strap, l, and bolts l'. 70

R' is a brace, which at its upper end projects through the upper circle-plate, G, and is secured thereto by a nut, T', and which thence extends downward underneath the axle and has a threaded socket, into which the lower end of the king-bolt R is screwed. The lower reach-irons, l', are attached to the brace R' at the socket r, (preferably made integral therewith,) and extend back under the reach L<sup>2</sup>, to which they are bolted in the usual way. The brace is in this way connected with the reach, and is very greatly strengthened thereby. The lower end of the hanger-socket L' rests on the socket r of the brace, though, if desired, it may be made integral therewith. The end of the king-bolt R below the socket r is fitted for the sake of security with a lock-nut, r'. The brace R', with its attached reach-irons, is shown in Figs. 4 and 5, Fig. 4 showing it adapted to a double reach and Fig. 5 showing it adapted to a single reach. 90

On the under side of the reach, and between it and the reach-iron l', I prefer to have a strap, l<sup>2</sup>, of iron or steel, through which the bolts l<sup>2</sup> pass. This strengthens the reach and therefore adds security to all the parts. In order to make the parts more compact and to afford a brace or bearing for the axle in case the vehicle meets an obstruction on the road, I interpose a yielding plug, U, of rubber or the like, between the axle and the king-bolt, as shown in Fig. 1, and screw it to the axle. The use of this plug affords great strength to the structure. 100

S is a shoe-piece with a threaded socket,



which is screwed on a threaded part of the brace R' under the circle-plate G, and extends forward under the lower circle-plate, serving as a guide or support for holding it in place. In my  
 5 former Patent No. 362,504 this shoe was shown as fitting around a tapered unthreaded part of the brace; but the present construction is better, because it affords means for tightening and adjusting the parts. This shoe acts, as ex-  
 10 plained in my former patent, to steady and guide the circle-plates; but to hold them together with the greatest possible security and to prevent their rattling I employ an expedient, which is illustrated in Fig. 6. Instead of  
 15 making both the circle-plates plain, so that their meeting surfaces shall fit neatly together, I bow one or both of them laterally a little, so that at their middle points they shall be somewhat separated—say about one-eighth of an  
 20 inch. Then when the nut T' is screwed down on the upper circle-plate to draw the parts together the divergence of the circle-plates offers resistance, which keeps the parts in a degree of tension and holds them together, thus  
 25 preventing the unpleasant rattling frequently to be observed in fifth-wheels. In Fig. 6 I show the parts as they are before they are drawn together by tightening the nut T'.

The form and proportions of the parts may  
 30 be varied by the skilled mechanic without departing from my invention.

I claim—

1. In a fifth-wheel, the combination of circle-plates adapted for receiving the head-block and  
 35 axle-bed and provided with rearward extensions for the king-bolt, a king-bolt which is situated back of and is independent of the axle and head-block, and a king-bolt brace which connects the circle-plate with the lower end of  
 40 the king-bolt and the lower end of the king-bolt with the reach, whereby the king-bolt is supported against the strain from the axle and perch, substantially as and for the purposes specified.

2. In a fifth-wheel, the combination of the  
 45 fifth-wheel plates adapted to receive the head-block and axle-bed and provided with rearward extensions for the king-bolt, a king-bolt brace which connects the front of the circle-plates with the reach and is provided with a  
 50 socket for the reception of the lower end of the king-bolt, and a king-bolt situate back of and independent of the axle, and which connects the rear of the circle-plates with the brace  
 55 which extends from the front of the circle-plates to the reach, substantially as and for the purposes specified.

3. In a fifth-wheel, the combination, with the circle-plate, of a brace extending therefrom and a shoe screwed on the brace and supporting the lower circle-plate, substantially as and  
 60 for the purposes described.

4. In a fifth-wheel, circle-plates the meeting faces of which are bowed or separated, substantially as and for the purposes described.  
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5. In a fifth-wheel, the combination, with the axle and a king-bolt situate in the rear thereof, of a plug interposed between the king-bolt and axle, substantially as and for the purposes  
 70 described.

6. In a fifth-wheel, the combination of circle-plates adapted to receive the head-block and axle-bed and provided with rearward extensions for the king-bolt, a brace which extends  
 75 from the front of the circle-plates to the reach, a king-bolt situated back of and independent of the axle, and which connects the rear of the circle-plates with the brace, and a perch-hanger having a king-bolt socket and which extends from the rear extension of the circle-  
 80 plates to the brace, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 4th day of June, A. D. 1887.

WILLIAM W. GRIER.

Witnesses:

W. B. CORWIN,  
 THOMAS W. BAKEWELL.