(No Model.)

W. W. GRIER.

FIFTH WHEEL.

No. 362,504. Patented May 10, 1887.

Fig. 1.

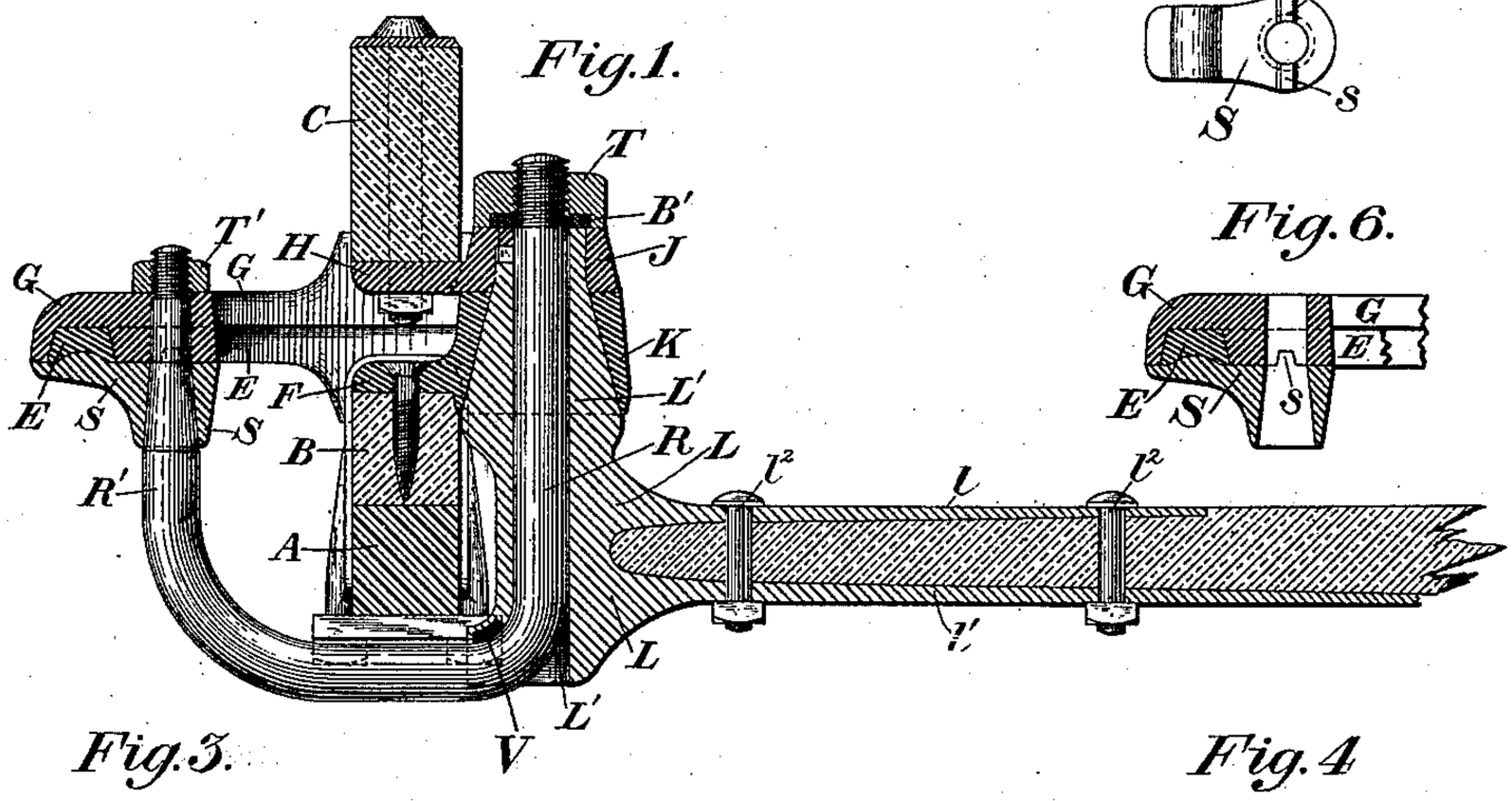


Fig. 5.

Fig. 6.

Fig. 3.

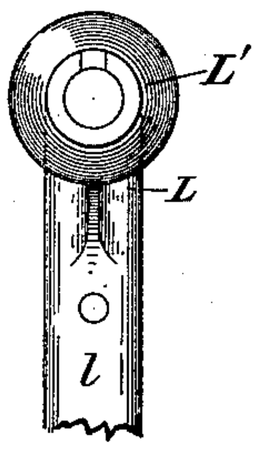


Fig. 4

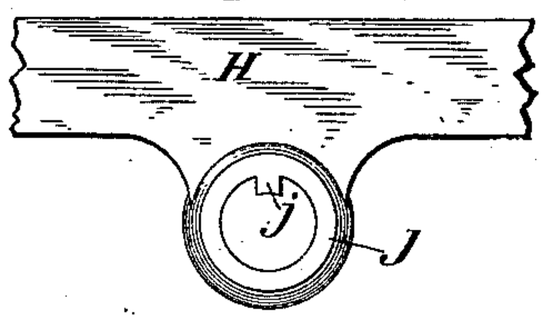
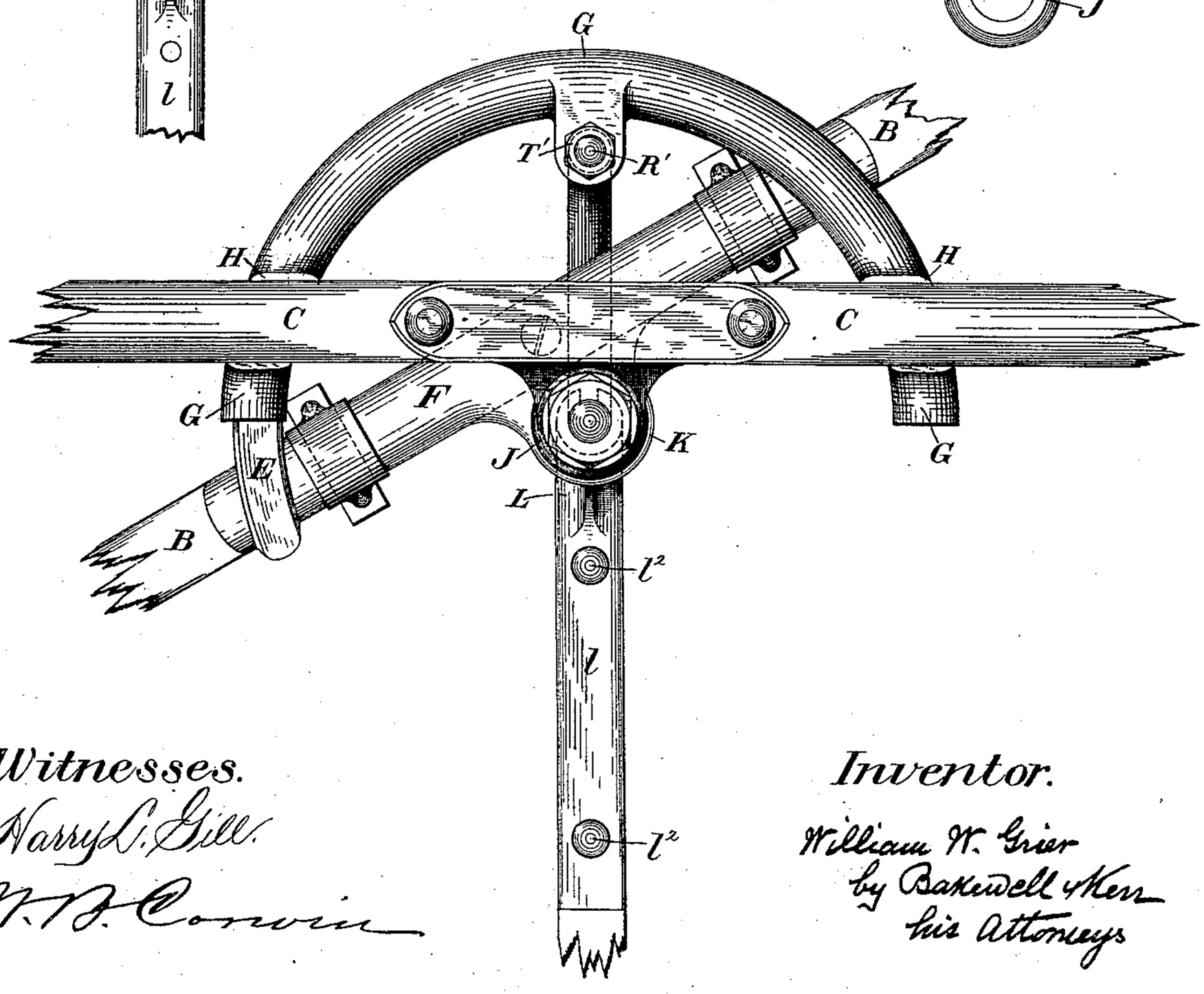


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM W. GRIER, OF HULTON, PENNSYLVANIA.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 362,504, dated May 10, 1887.

Application filed January 24, 1887. Serial No. 225,275. (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 upon the fifth-wheel shown and described in my Patent No. 345,585, dated July 13, 1886; and it consists in a new and useful arrangement and construction of the brace marked O in said patent, and in the arrangement of the spring or reach-hanger thereon. In the patent above referred to the king-bolt is back of the axle, and carries a spring-hanger or shackle whose hollow socket surrounds the king-bolt, and a brace, O, extends from the foot of the king-bolt forward under the axle and up to the upper circle-plate of the fifth-wheel, to which it is attached by a bolt and nut. The lower end of the brace has an eye or collar which encircles the foot of the king-bolt, and it is retained in place by a nut on the king-bolt, which bears against the under side of the eye. This device is practical, and is of great use in strengthening the parts of the fifth-wheel and keeping them firmly together. It is, however, subject to the disadvantage that if the nut at the foot of the king-bolt or the nut at the upper circle-plate should become detached the spring-hanger socket might fall and throw the running-gear of the vehicle out of place.

It is one of the objects of my invention to provide means to prevent this danger.

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

Figure 1 represents 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. Figs. 3, 4, 5, and 6 are detail views.

Like symbols of reference indicate like parts in each.

In the drawings, A is the front axle of the vehicle. B is the axle-bed placed upon 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.

G is the upper or fixed circle-plate, which is secured to the under side of the head-block by a saddle, H. I make the king-bolt integral with the brace-rod, which connects it with the upper circle-plate. Both together constitute a single U-shaped rod, having two upright legs, R and R′, the leg R constituting the king-bolt, which extends vertically through a lug or collar, J, which projects from the saddle H back of the head-block, and through a similar lug or collar, K, which projects from the saddle F. The axial lines of the collars J and K are coincident, as shown in Fig. 1, and 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 tubular socket, L′, fitting around the king-bolt R and extending up through the collars J and K, the socket being made conical to fit within the flared portion of the collar K. The bottom of the socket L′ rests upon the bend or angle at the base of the king-bolt. The upper end of the socket L′ has a keyway or slot, into which fits a key, *j*, which projects from the inner periphery of the collar J, Figs. 1, 3, and 4. This arrangement prevents the hanger-socket from turning on the king-bolt relatively to the head-block. The arm R′ extends up through the upper circle-plate, G, and projects above the same.

S is a shoe-piece with a conical socket, which fits around a tapered part of the arm R′, under the circle-plate G. This shoe extends forward under the lower circle-plate and serves as a guide or rest for holding it in place. The shoe S is held in a stationary position by the keys or lugs *s*, which fit within corresponding grooves or keyways on the face of a lug on the upper circle-plate, Figs. 1, 5, and 6.

If desired, the collar J and the part of the king-bolt fitting therein may be made polygonal as an equivalent substitute for the keyway and slot. This feature of my improvement is of importance, because it enables me to dispense with braces connecting the reach with the head-block.

T T′ are nuts, which are screwed on the upper ends of the U-shaped piece R R′, above the upper circle-plate and the collar J. B′ is a plug underneath the nut T, to hold it and

prevent rattling. By reason of the fact that the end of the arm R′ is tapered at its junction with the shoe S, and that the upper part of the socket S is conical at its bearing with the collar K, it is clear that tightening of the nuts will draw the parts of the device together, and if the parts should wear loose by friction they may be retightened by screwing up the nuts. This is provided for by elongating the groove in which the key *j* fits.

In the drawings I show the hanger L adapted for use with a rigid reach, instead of spring reaches or springs, as shown in my previous patent, though, unless expressly so limited in the claims, I do not limit myself to the device with which the hanger is used. Either springs or a rigid reach may be attached to the hanger. To adapt the hanger L for a reach, it is forked and has two arms, *l* and *l′*, which inclose the reach on two sides thereof, and bolts l^2 extend through the reach and through the forks and hold them rigidly together. I have shown a single reach in the drawings; but without other substantial modification a double reach with divergent branches may be substituted.

The lower end of the socket L′ is preferably flared outwardly at V, to afford a recess for the reception of a rubber plug, which, being interposed between the socket and the king-bolt, prevents rattling of the parts.

The device, when constructed as above described, affords great strength and security. The position of the nuts T and T′ enables them to be more readily adjusted, and they are less apt to become displaced than in the arrangement shown in the patent above referred to. If, however, one of them should jar loose, the other would hold the part R R′ in place, because it is firmly braced laterally by the collars J K, the socket L′, and the upper circle-plate. The curvature of the king-bolt R at its base prevents the socket L′ from dropping out of place unless both nuts T and T′ be detached.

I claim—

1. In a fifth-wheel for vehicles, the combination, with the circle-plates, of a brace, R R′, one arm of which is back of the axle and constitutes the king-bolt, while the other arm extends forward under the axle and is attached to the circle-plate, substantially as and for the purposes described.

2. In a fifth-wheel for vehicles, the combination, with the circle-plates, of a U-shaped brace, R R′, one arm of which is back of the axle and constitutes the king-bolt, and the other arm of which extends to the upper circle-plate, and nuts T T′, arranged on the upper ends of the arms, substantially as and for the purposes described.

3. In a fifth-wheel for vehicles, the combination, with the circle-plates, of the U-shaped brace R R′, and the hanger L, arranged on the arm R, back of the axle, substantially as and for the purposes described.

4. In a fifth-wheel for vehicles, the combination, with the circle-plate, of the U-shaped brace R R′, the hanger L, arranged on the arm R, back of the axle, and the anti-rattling plug V, interposed between the socket of the hanger and the arm, substantially as and for the purposes described.

5. The combination of a fifth-wheel, a king-bolt back of the axle, a reach, and a hanger mounted on the king-bolt, said hanger being attached to the reach and forming the sole support for the front end thereof, substantially as and for the purposes described.

6. The combination, with a fifth-wheel, of a king-bolt back of the axle, collars encircling the king-bolt, and a hanger-socket, L′, mounted on the king-bolt and fitting around the same, inside the said collars, substantially as and for the purposes described.

7. The combination, with a fifth-wheel, of a king-bolt back of the axle, collars encircling the king-bolt, and a hanger-socket, L′, mounted on the king-bolt and fitting around the same, inside the said collars, and secured to the collar of the upper circle-plate so as to be prevented from rotation independently thereof, substantially as and for the purposes described.

8. The combination, with the king-bolt back of the axle and the circle-plates, of a brace extending from the king-bolt to the upper circle-plate, and a shoe, S, fitting around the brace and projecting therefrom under the lower circle-plate, substantially as and for the purposes described.

9. In a fifth-wheel for vehicles, the combination, with the circle-plates, of a U-shaped brace, R R′, one arm of which is back of the axle and constitutes the king-bolt, and the other arm of which extends to the upper circle-plate, nuts T T′, arranged on the upper ends of the arms, and an elastic plug under the nut T′, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 20th day of January, A. D. 1887.

WILLIAM W. GRIER.

Witnesses:
W. B. CORWIN,
THOMAS W. BAKEWELL.