(No Model.)

E. B. SMITH.

FIFTH WHEEL.

No. 560,442. Patented May 19, 1896.

Fig. 1.

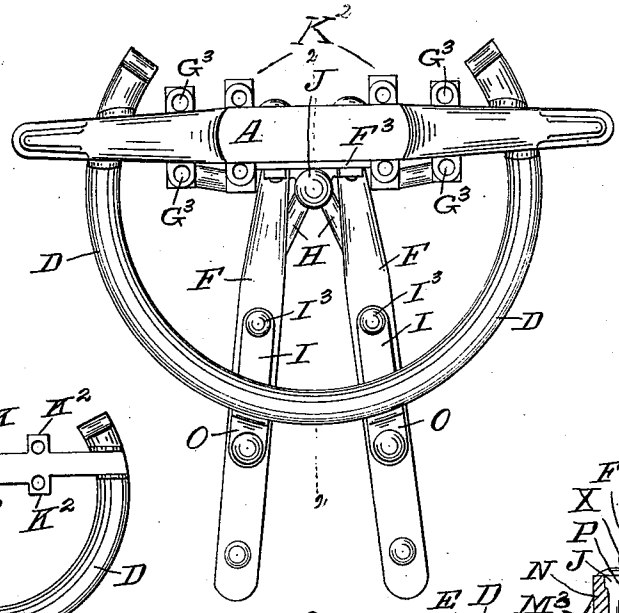


Fig. 5.

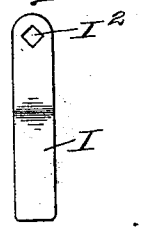


Fig. 4.

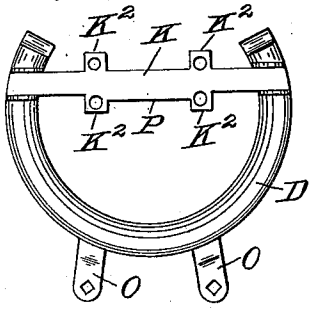
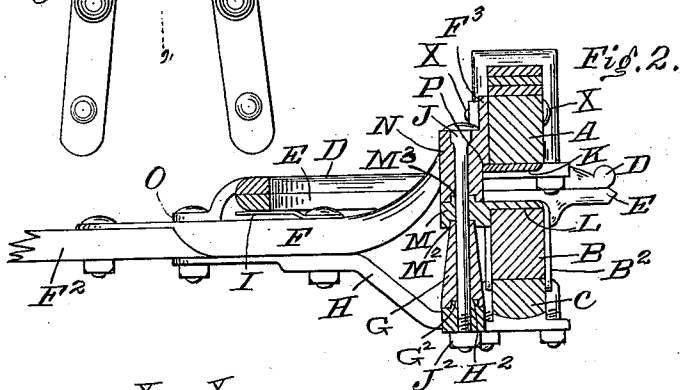


Fig. 2.



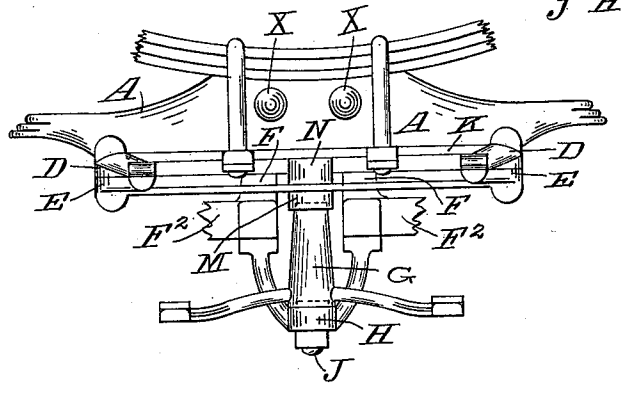


Fig. 3.

Witnesses

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EZRA B. SMITH, OF CINCINNATI, OHIO.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 560,442, dated May 19, 1896.

Application filed January 13, 1896. Serial No. 575,191. (No model.)

To all whom it may concern:

Be it known that I, EZRA B. SMITH, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fifth-Wheels, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings, making a part of this application and in which similar letters of reference indicate corresponding parts, Figure 1 is a top view of a fifth-wheel and connections embodying my invention. Fig. 2 represents one-half, in elevation, of a vertical section of the same, taken in the plane of the dotted line 2 2 of Fig. 1. Fig. 3 is a front elevation of the said structure, the axle and bed and certain clips being removed therefrom in order to better illustrate the axle-plate. Fig. 4 is a top view of the upper circle and the parts integral therewith, but shown on a diminished scale. Fig. 5 is a top view of the spring, which in and with the combination shown performs the function of an antirattler.

In the drawings, A is the head-block; B, the front axle-bed; C, the front axle; D, the upper circle, and E the lower circle. The upper circle is fastened to the head-block by means of the usual clip-lugs K^2 on head-block plate K. The plate K is provided on the rear side between the clip-lugs K^2 with a narrow rest-plate or widened part P, designed to form a resting-place for the head-block plate F^3 of perch-iron F. This rest-plate is placed in this position to prevent strain on the bolts X, that fasten the perch-iron to head-block. Besides this novel feature it makes possible a saving of metal, as the usual lug for the king-bolt projecting from the head-block plate is absent. The rear of the upper circle D is secured to the perches by means of the lugs O, altogether making the upper circle a fixed part.

The lower circle E is secured to the axle-bed B by means of clips B^2 passing over the bed-plate L and through holes G^3 in axle-plate G, and in the rear it (this circle) is held firmly against the upper circle by means of a novel arrangement of steel springs I, that are sufficiently stiff to prevent rattling of the parts after they have become loose and worn by reason of service. The bed-plate L has a rearward-projecting apertured lug M, engaging the king-bolt J, and which lug M is provided with an upward-extending annular flange M^3, interfitting with the king-bolt sleeve N of perch-iron F. The under side of lug M is counterbored at M^2 to receive the upper end of axle-plate G, and thereby forming a practically indestructible structure for preserving the king-bolt and its immediate connections.

F is the upper perch-iron, containing the forward end of the perch F^2 and carrying the upper end of king-bolt J in the sleeve N and is securely fastened at its forward end by means of the bolts X, passing through the head-block A and plate F^3, the plate F^3 resting on the solid extension P of head-block plate K.

G is an ingeniously-contrived axle-plate allowing of a considerable variation in the axle-bed B and axle C either in width or depth. The counterbore M^2 in lug M is deep enough to allow for all sizes of axles that can possibly be used on an ordinary vehicle, and by reason of the cylinder of axle-plate G being smaller than the said counterbore it will adjust itself in accordance with the thickness of the axle and axle-bed. As the cylinder of the plate is entirely independent of the axle-bed B, it is at once apparent that any variation in the width of the wood of the axle-bed will not interfere in the least with the position of the said cylinder, the latter extending upward and the wings of said axle-plate G extending outward and under the axle are made in one piece of solid metal, because I have discovered that were the cylinder A a detached part the noise resultant from it by reason of the vibration of the vehicle would condemn the fifth-wheel and destroy its commercial value. Hence after considerable experimenting I have secured a perfect device wherein the possibility of rattle is absolutely obviated. The lower side of the axle-plate is provided with a counterbore G^2 to engage an annular flange H^2 on the upper side of the lower perch-iron H, making an interfitting structure for reducing to a minimum the wear and strain

on the king-bolt J. The lower perch-iron engages the king-bolt J and axle-plate G at its forward end and is fastened securely to the under side of perch F^2 at the rear end of perch-iron F.

I indicates a novel, cheap, and practicable device to prevent the rattle which is the natural result of the wear on the circles. This contrivance is a perfect antirattler, as the springs are made slightly inclined or bent from a straight line, and when made to do duty they are, by reason of the fastening down of the lugs O, pressed out straight, and in consequence are always on a strain and pressing the lower circle up against the upper one. The production of a rattling sound by the circles striking together is therefore prevented. The springs are made with an angular hole I^2 in one end, so that the same bolt I^3 that is usually used for fastening the front end of perch to perch-irons can be brought into service. Inasmuch as carriage-bolts are square under the head, the springs cannot be moved from their position on top of the perch by the lower circle moving across them. If it were not for the angular hole for fastening the springs, the lower circle would soon have them pushed aside and out of use.

The king-bolt J passes through and holds together the interfitting perch-iron sleeve N, apertured lug M, axle-plate G, and lower perch-iron H. Any wear of the parts it is apparent can be readily taken up and corrected by tightening the nut J^2 at lower end of bolt under the perch-iron H.

The head-block plate K joins the upper circle D at its outer ends and is provided with the new and desirable rest P.

The bed-plate L joins the lower circle E at its outer ends and carries the apertured lug M for the king-bolt.

N is a sleeve attached to perch-iron F at its forward end and located between the perches at their junction with the plate F^3. This sleeve carries the king-bolt J, the head thereof resting on the upper side of the sleeve. The lower side of the sleeve is provided with a counterbore engaging the flange of king-bolt lug M.

O represents the lugs, provided for fastening the rear side of upper circle to perch.

P represents the rest, located between the clip-lugs of head-block plate K and is an extension of the width of plate K and provides a suitable rest for the forward end of perch-iron F and renders it impossible to bend the lug M should an unnatural pressure be brought to bear on the king-bolt.

The novel and desirable features are the few parts required to construct my device, the low cost at which it can be manufactured, the stylish, neat, and light appearance, the durability, the antirattler, the permissible disregard for dimension of stock used in construction, and also the fact that any size or style of axle can be used.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a fifth-wheel, the combination of the head-block and axle, king-bolt in rear holding together upper and lower circle, axle-plate, and upper and lower perch-irons, securing-eyes interlocking, upper side of axle-plate resting against under side of king-bolt projection of lower circle, substantially as and for the purposes specified.

2. In a vehicle fifth-wheel having an upper and lower fifth-wheel circle, lower circle provided with rear eye for king-bolt, upper perch-iron resting on and secured thereto by means of the king-bolt, an axle-plate and lower perch-iron, axle-plate fastened to the axle, and king-bolt passing through independent of axle-bed, substantially as and for the purposes specified.

3. In a fifth-wheel, the combination of the axle and head-block, king-bolt located back of same, two circles back of axle and over rear end of perch-irons, one circle provided with an eye for king-bolt, upper end of axle-plate resting against and interlocking with said eye, and lower end interlocking with lower perch-iron and rearward and downward extending lugs at rear of upper circle, substantially as and for the purposes specified.

4. The combination of a vehicle fifth-wheel axle-plate extending rearwardly and upwardly engaging rear king-bolt projection of lower circle and top perch-iron sleeve resting on upper side of said projection, substantially as and for the purposes specified.

5. In a vehicle fifth-wheel, the combination of a perch-iron and the circles passing the perch-iron, one of the circles held to perch by a lug, and a spring located between the perch and the circles and a bolt connecting the perch-iron and spring together, the spring having the angulated opening through which the angulated shank of said bolt passes and prevents the bolt from being shifted, substantially as and for the purposes specified.

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Attest:
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