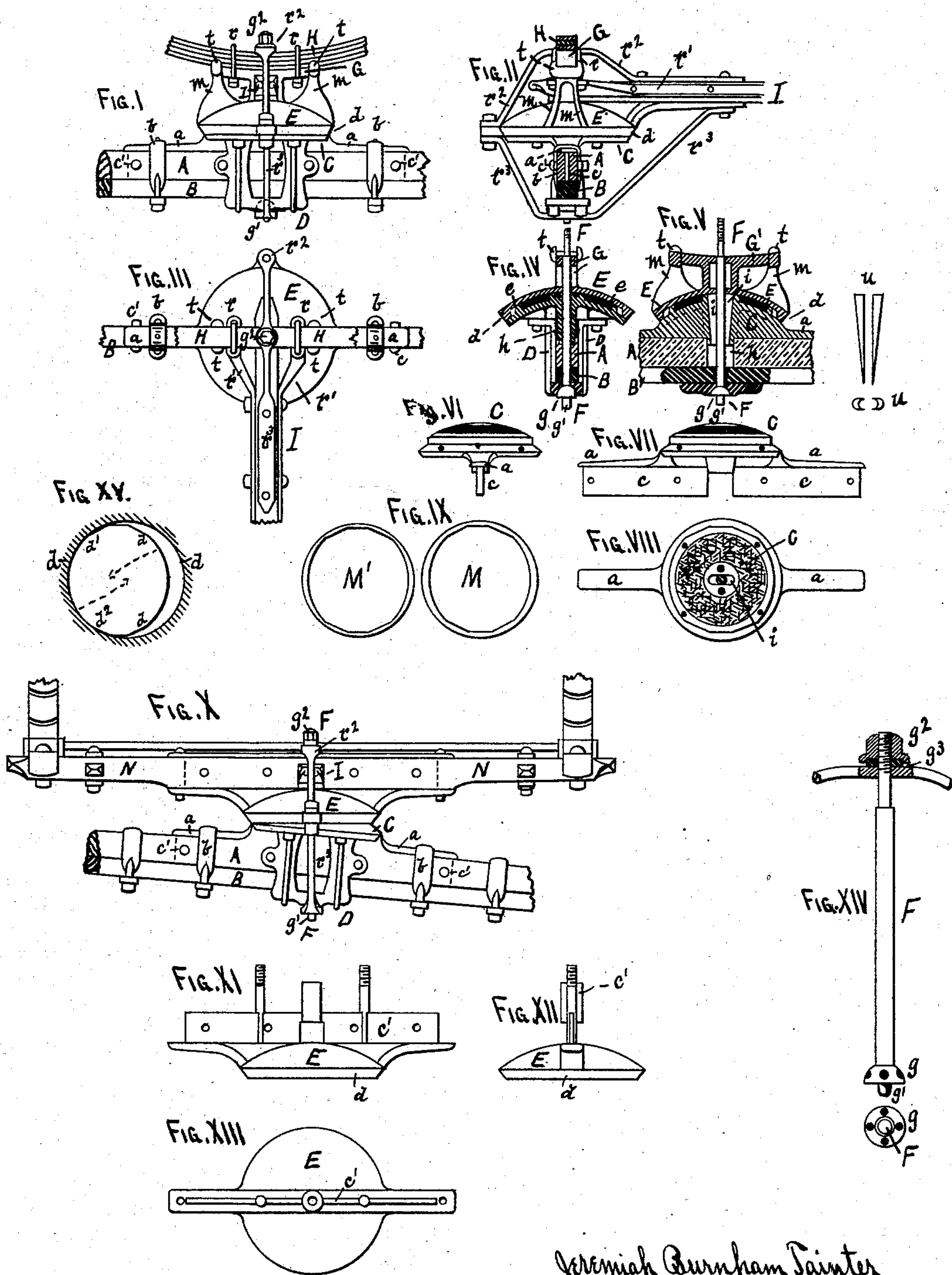


(No Model.)

J. B. TAINTER.
Fifth Wheel for Vehicles.

No. 241,443.

Patented May 10, 1881.



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JEREMIAH B. TAINTER, OF MENOMONEE, WISCONSIN.

FIFTH-WHEEL FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 241,443, dated May 10, 1881.

Application filed September 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH BURNHAM TAINTER, of Menomonee, in the county of Dunn and State of Wisconsin, have invented certain new and useful Improvements in the Running-Gear of Vehicles, &c., of which the following is a specification.

This invention relates to that class of vehicles in which the fifth-wheel is so arranged that a longitudinal as well as a horizontal movement is permitted to the forward axle to allow the body of the vehicle to retain its level position when the wheels run over obstructions, &c.; and it consists in the manner of arranging the coupling between the forward axle and springs or bolsters, whereby a broad ball-and-socket-formed bearing is obtained, and the axle and bolsters strengthened and stiffened, as hereinafter set forth. I accomplish these results by the use of the mechanism illustrated in the accompanying drawings, in which—

Figure I is a front elevation, Fig. II is an end elevation, and Fig. III is a plan view, of a portion of the forward axle and spring, showing the manner of applying my invention thereto. Fig. IV is a sectional end view, and Fig. V is a sectional side view, of the curved plates, axle, &c. Fig. VI is an end elevation, Fig. VII is a side elevation, and Fig. VIII is a plan view, of the lower curved plate detached; Fig. IX, views of the graduated rings detached; Fig. X, a front elevation of the axle and bolster of a side-spring buggy, showing the manner of applying the invention to that style of vehicles; Fig. XI, a front elevation, Fig. XII an end elevation, and Fig. XIII a plan view, of the upper curved plate, showing its form when adapted to a side-spring buggy; Fig. XIV, a view enlarged and detached of the king-bolt and its packed nut; Fig. XV, a detail view, illustrating the operation of the curved plates.

A is the wooden axle; B, the iron axle, and C a convex plate, cast in one piece with a flat horizontal bar, *a*, the same width as the axles and secured thereto by clips *b*.

Projecting down from the center of the bar *a* is a fin or plate, *c*, adapted to fit into a slot cut through the wooden axle A, and secured therein by bolts *c'* passing through the axle and plate, as shown.

D is a clip bolted to the lower part of the

convex plate C, and inclosing the axles A B, and bolted to the wooden axle, as shown. By this means the convex plate is not only firmly secured to the axles, but the weight of the body of the vehicle and its load, distributed over the whole length of the plates *a c*, (nearly one-half the whole length of the axle,) thereby greatly reducing the chances of springing the axle by strengthening and stiffening it.

The center of the upper part of the plate C is raised above the common surface and provided with a large annular cavity, in which plumbago and sulphur, in about equal parts, are run to form a lubricant.

Fitting over the plate C is a concave plate, E, with a rim, *d*, and sunken center *e*, curved the same radius as the plate C, but with the rim *d* somewhat larger than the raised center of the plate C, (see Fig. XV,) so that a degree of play will be allowed the upper plate upon the lower one.

F is the king-bolt passing upward through the axles and both plates C and E, and provided at its lower end with a curved shoulder, *g*, setting into a curved cavity in the lower part of the clip D, the center of the curve of this shoulder and the cavity in the clip D being the same as the plates C E.

Upon either side of the bolt F, where it passes through the axles A B and plate C, spaces are left, as shown at *i*, in Figs. V and VIII, to allow the bolt to move sidewise a short distance, the plate C being provided where the bolt passes through it with a projecting collar, *h*, to further strengthen and stiffen it.

The radius of the curves of the sides of the projecting center of the plate C will occur at the centers of the curves forming the ends of the slot *i i*, while the inside of the rim *d* will be the same, so that when the rim strikes against the projection on the plate C a much longer distance of the side of the inside of the rim will come in contact with the projection than if the projection was a complete circle. This is more clearly shown by Fig. XV, where it will be seen that the rim *d* is in contact with the projection the whole distance from *d'* to *d''*.

Cast upon top of the plate E are four standards, *m*, and a curved head-block, G, upon which the spring H is secured by clips *r*, while small lugs *t*, on the sides at the ends of the block G, aid in holding the spring and prevent side

movement. Beneath the center of this block G the wooden and iron reach I pass, and are connected to the block by side braces, r' , (being continuations of the clips r ,) while keepers r^2 r^3 , passing above and below the springs and axles, are secured to the front edge of the plate E.

Projecting down from the curved shoulder g is a lug, g' , which passes through the keeper r^3 , while the upper end of the king-bolt passes through the keeper r^2 , and is provided with a nut, g^2 , having rubber or leather washer g^3 beneath it, (see Fig. XIV,) by which water, grit, &c., are prevented from working in around the king-bolt. By means of the keepers r^2 r^3 the king-bolt is supported and braced against side strains.

M M', Fig. IX, are two rings, both made to fit over the projection on the center of the plate C, the right-hand one with its outer rim of the same diameter as the inside of the rim d , so that when placed upon the projection and the plate E placed over it the space between the plates C E will be filled; hence no side play can occur, while the outside diameter of the left-hand ring is smaller than the inside of the rim d , so that when placed upon the projection of the plate C the play of the plates will be reduced, and by using rings of various sizes any degree of play may be obtained. By this means, where the roads are very smooth and no obstructions occur, the large ring will be used.

To the right of Fig. V is shown a side elevation and plan view of two concave and convex wedges, u , adapted to fit into the tapered slots i , when the large ring M is used to support the king-bolt F, and prevent all the strain coming upon the ring M and rim d .

Fig. X shows the invention applied to a side-bar buggy, the only change required being the substitution of a plate, c' , for the head-block m G on the upper plate, E, this plate c' being adapted to be set into the bolster N, similar to the plate c , into the axle A. The form of this casting is clearly shown in Figs. XI, XII, and XIII. This arrangement also greatly stiffens and strengthens the bolster and prevents its being rolled and twisted inward by the strain of the springs, which is the tendency when arranged in the ordinary manner.

By this arrangement of the curved plates C

E and shouldered king-bolt F the horizontal movement is permitted to the axle, while, in addition to that, the ends of the axles are allowed free play up and down, so that in running over rough ground or obstructions the wheels and axle will rise for some distance without affecting the body of the vehicle, a very small play of the plate E (not over one-half an inch) being equivalent to a movement of ten or twelve inches of the ends of the axle, so that an obstruction of ten or twelve inches high may be run over without affecting the body of the vehicle.

Small cavities filled with plumbago and sulphur will be arranged in the shoulder g , as shown, and other parts where friction occurs.

What I claim as new is—

1. The concave body-supporting plate E and convex plate C, the latter provided with longitudinal arms a , vertical fin c , and elongated slot i , and adapted to be set into and screwed to the axle A, in combination with the king-bolt F, provided at its lower end with a shoulder, g , curved in a line in conformity with the curves of the plates C and E, substantially as set forth.

2. The combination and arrangement of the convex under plate, C, formed with the longitudinal arms a , pin c , and slot i , adapted to be secured to the axle, as described, and the clip D, provided with a concave cavity to receive the curved shoulder g of the king-bolt F, substantially as set forth.

3. The convex plate C, formed with a central projecting collar, h , and elongated slot i , substantially as set forth.

4. The combination, with the plates C and E, of the graduated rings M M', whereby the longitudinal play may be regulated, substantially as set forth.

5. The combination, with the king-bolt F and convex plate C, having the slot i , of the wedges u , substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JEREMIAH BURNHAM TAINTER.

Witnesses:

C. N. WOODWARD,
LOUIS FEESER.