J. B. AUGUR.

GEARING FOR WAGONS.

No. 108,085. Patented Oct. 11, 1870.

Fig. 4.

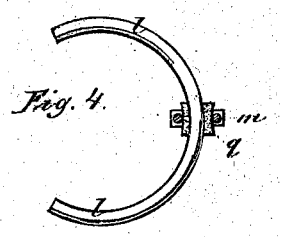


Fig. 1.

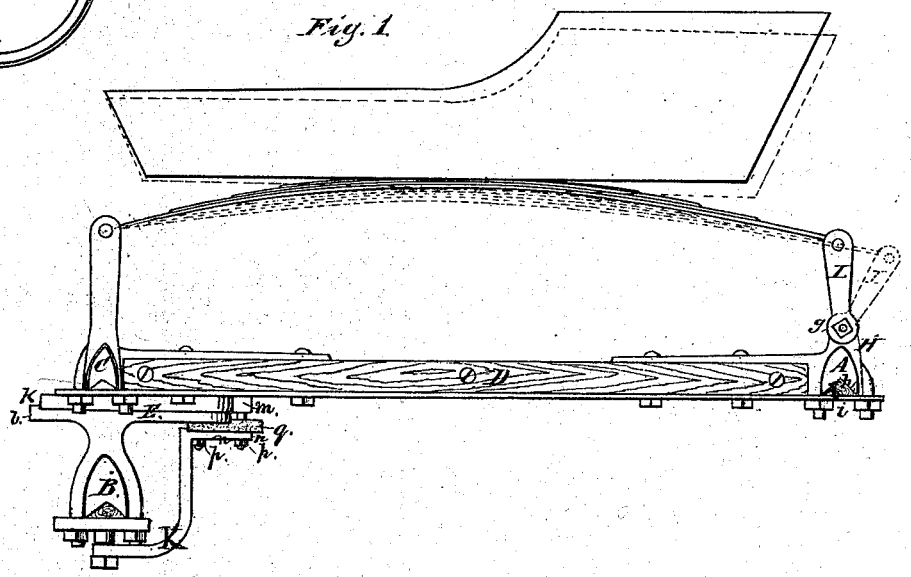
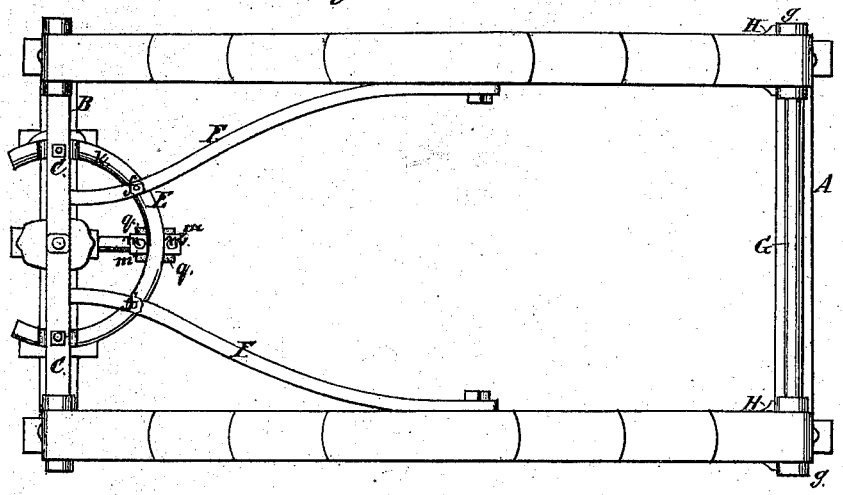


Fig. 2.

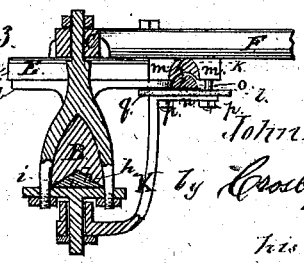


Witnesses.

H. J. Duell

J. H. Beale

Fig. 3.



John B Augur Inventor.

by Crosby, Halsted & Gould,

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United States Patent Office.

JOHN B. AUGUR, OF POUGHKEEPSIE, NEW YORK.

Letters Patent No. 108,085, dated October 11, 1870.

IMPROVEMENT IN GEARING FOR WAGONS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN B. AUGUR, of Poughkeepsie, in the county of Dutchess and State of New York, have invented certain Improvements in Gearing for Buggies and other vehicles; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My present invention is for improvements upon the buggy-gearing patented to me in patent No. 102,905, dated May 10, 1870, and antedated January 13, 1870.

My improvements consist—

First, in connecting together by a rigid rod the two pivoted links upon the clips employed on the hind axle, so that, when the weight is upon one spring, both springs, by reason of the connecting-rod, shall be caused to work together, thus preventing the roll.

Also, in constructing the steel axle with an inverted V-shaped space or cavity lengthwise of the same, on its under side, thus materially lightening the axle and saving stock, while leaving the axle in the best form for strength.

Also, in combining with a fifth-wheel lugs at its middle, which, in conjunction with a lug and bolts upon the brace connecting it with the bolster, serve to compress a rubber pad placed between the bottom of the wheel and the under lug on the brace, and prevent rattling.

Also, in the employment of braces running from the bolster, and preferably bolted to the fifth-wheel, over which they pass, and firmly secured to the reaches.

Also, in certain details, hereinafter mentioned.

In the drawing—

Figure 1 represents a side view of my improvements, the springs being shown in two positions, to show the action of my improved clip connection;

Figure 2 is a top view of my improvements; and

Figure 3, a central vertical transverse section through the front axle, fifth-wheel, and their connections and adjacent parts; and

Figure 4 is a top view or plan of the under "circle" or portion of the fifth-wheel.

A represents the hind axle;

B, the front one; and

C, the bolster.

D D are the reaches connecting the bolster and hind axle.

E, the fifth-wheel.

F, the braces connecting the bolster and reaches, the point at which the braces are connected to the fifth-wheel being shown at *f*.

The rod which connects together the swinging links on the hind axle is shown at G, the clips being seen at H and the links at I.

The rod G is turned down at each end, to pass through the eyes of the links and through the clips, and is threaded at each extreme end, to receive a nut, *g*. This rod turns in its bearings in the clips, the links having square or equivalent openings in their inner eyes, to receive a correspondingly-shaped portion of the rod. This insures a positive rocking of the rod upon its axis whenever either link is swung forward or back by the action of its own spring, and positively compels (through the agency of the rod) the simultaneous and equal movement, and with positiveness, of both the links, and, as a consequence, an equal action of both springs of the vehicle, even though all the weight may be upon one side. In short, one spring cannot act without forcing the same action upon the other, and hence, the weight is brought to bear upon both ends of the axle. Anything like a roll is prevented, and there is no undue straining or contorting of the springs, axle, or any other parts.

Instead of having the connecting-rod serve also as the axis for the swinging links, it may be made separately, and connect the links at a point above their centers of motion. I prefer, however, the construction shown, as it conduces to greater strength and security, and certainty of action.

Instead of making the axle flat or square at the bottom, as described in my above-named patent, I form it on its under side, as shown at *h* in the drawing, that is, with an arched or V-shaped portion cut away. This dispenses with a large percentage of the weight and cost of the metal, and inasmuch as the axle is still left of sufficient vertical thickness to withstand all the requirements of an axle, and is less clumsy, is found to be a great advantage. The form given to the cut-away part imparts to the axle the properties and strength of the arch, and it is actually less liable to break, and can better withstand and resist severe shocks than if made without the groove. This groove need not necessarily be made angular in cross-section, but may be in the form of a gothic, or of a true arch, the same general principle existing in either form, and the same advantages flowing therefrom, for the purpose intended.

The space in the groove admits of the insertion, if desired, of a correspondingly-shaped piece or fillet of wood, to form a bed or bottom for the axle, and the same will be, when used, securely held to place against lateral displacement by virtue of its own form. Such a piece or bed is shown at *i*, in fig. 1, and also in fig. 3, and, by reason of its thickness and shape, will last longer and keep its place better than the flat strips heretofore used, and better preserve its contact with the axle.

The upper part *k*, of the fifth-wheel, it will be seen by reference to fig. 3, is made concave upon its under

side, and the lower part *l* is made in one continuous piece, of about the same length as the upper part or circle, and continuously convex on its upper side; therefore, as the front axle turns, the one part rides without any break or interruption in the groove of the other. This serves to keep both of them, throughout their whole length, from lateral displacement in any direction, and, also, as a consequence, to take away from the king-bolt the stress and strain, and relieve it almost entirely from the jars and jerks to which it is subjected under other known constructions, and from the risk of damage or accident likely to result therefrom, and insures, also, an equal distribution of the wear throughout the whole of the concave or grooved surface, and causes much less wear than if the convex portion was made in two short segments like brackets, and placed distant from each other on opposite sides of the center of the bolster, as has been heretofore practiced. By my construction, also, each circle steadies the other, and braces it most effectively; and, at the same time, I have all the advantage due to the prevention of any accumulation of dust between the circles, as it must drop away by its own gravity, because of the double inclined or arch form of the upper side of the lower circle which prevents any dirt or dust from remaining thereon.

Lugs *m*, upon the upper part *k* at its center, are connected with a similar lug, *n*, upon the piece or bracket, K, which extends from beneath the king-bolt, and bolts and nuts, *o p*, as seen, serve to clamp together these lugs and the interposed lower part *l*, of the fifth-wheel, so as, nevertheless, to permit the latter to move as may be required.

Between the lower lug *n* and the part *l* I place a rubber or equivalent pad, *q*, which, by means of the nuts upon the bolts, may be screwed as tightly as may be found desirable, in order to avoid direct contact of the parts *l* and *n*, and thus prevent their rattling, the same compression which effects this serving, at the same time, to keep in sufficiently close contact the concave and convex parts of the wheel, which thus cannot rattle.

Rigidly connected with, and forming one with the bolster C, I employ two braces, F F, extending therefrom to the reaches D D, to which they are firmly secured, as seen. These braces pass directly across the stationary part of the fifth-wheel, and may be fastened also to it, thus adding to their firmness and efficiency, and each bracing the other.

In fig. 2 the springs conceal the reaches D D, and one only is visible in fig. 1.

The front axle is shown of form similar to the back one, and may, if desired, have a similar wooden bed. The bolster also may be made of similar arched form on its under side, and for the same purpose

The dotted lines in fig. 1 show the positions of the buggy-body, springs, and pivoted links, under the action of any weight, the springs and links on both sides of the carriage descending equally, whether the weight be on one side or not.

I claim—

1. The herein-described method of equalizing the action of springs of vehicles, and distributing the weight of the load.

2. The combination of the pivoted links with a rod connecting the same, the rod compelling both links to move in unison, as and for the purpose described.

3. An axle or bolster having its under side cut away or arched, as and for the purposes described.

4. In combination with an axle or bolster having such an under side, a wooden bed, arched or ∧-shaped on its upper side, to adapt it thereto.

5. A fifth-wheel, constructed as shown and described, that is, with a concave under side on its upper part or "circle," and with a continuous convex upper side on its lower part or "circle," the two having an unbroken or continuous bearing-surface, one upon the other, and operating together, as and for the purpose set forth.

6. The combination, with a fifth-wheel, of the lugs *m m* and *n*, connecting-bolts, and rubber pad, or its equivalent, as and for the purpose set forth.

7. The combination of the bracket K and its lug with the fifth-wheel and its lugs *m m*, bolts, nuts, and rubber pad, or its equivalent, substantially as shown and described.

8. The combination, with the bolster and reaches D D, of the braces F F, as and for the purpose set forth.

JOHN B. AUGUR.

Witnesses:
W. B. PLACE,
J. J. WARNER.