

A. W. DOTY.
Carriage-Clips.

No. 163,055.

Patented May 11, 1875.

Fig. 1.

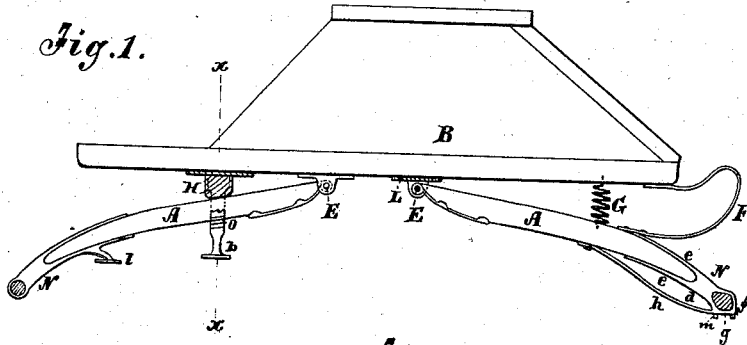


Fig. 2.

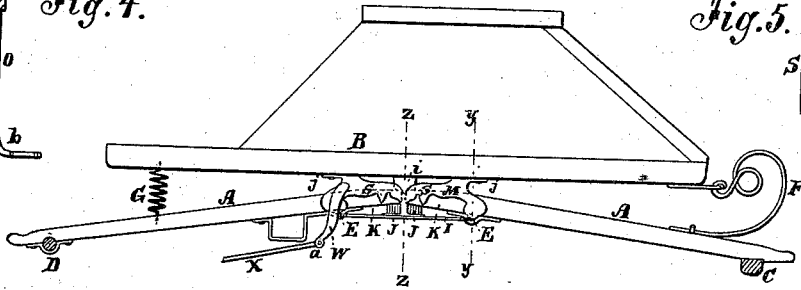


Fig. 4.

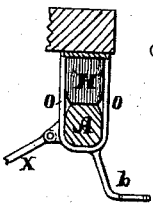


Fig. 5.

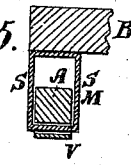


Fig. 3.

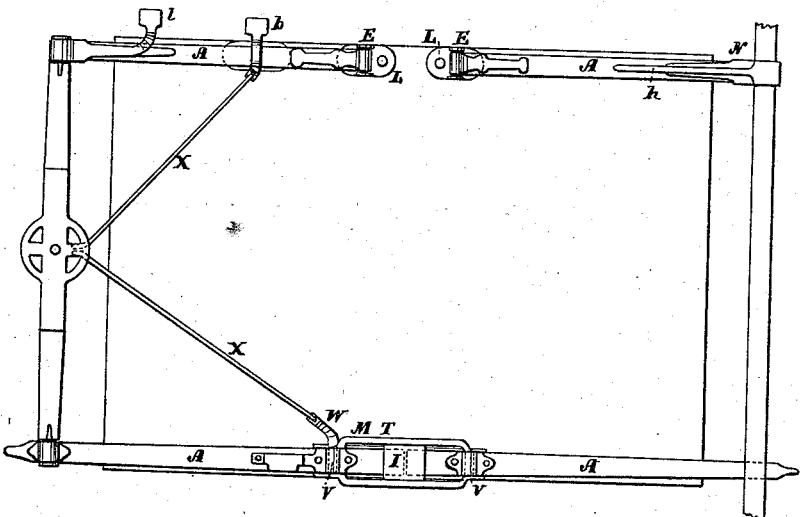


Fig. 6.

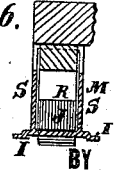
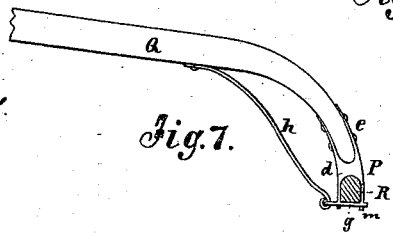


Fig. 7.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CARRIAGE-CLIPS.

Specification forming part of Letters Patent No. 163,055, dated May 11, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, ALFRED W. DOTY, of Windham Centre, in the county of Greene and State of New York, have invented new and useful Improvements in Carriages, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

Figure 1 is a side elevation of a buggy-body with springs and fittings contrived according to my invention. Fig. 2 is another side elevation, showing modifications in the fittings and springs; also, in the arrangement of the body-supporting bars. Fig. 3 is a plan of the body inverted. Fig. 4 is a section of Fig. 1 on the line *x x*. Fig. 5 is a section on line *y y* of Fig. 2. Fig. 6 is a section on line *z z*, Fig. 2. Fig. 7 is a detail, showing metallic fittings for connecting the shafts to the axle without joints, and so as to utilize the shafts to hold the axle against turning, thus dispensing with special brace for that purpose.

Similar letters of reference indicate corresponding parts.

A represents the bars by which the body B is to be supported on the axle C and the front bolster D, so as to allow of the use of simple and inexpensive springs, which may with this arrangement be used, the springs being in some form or other interposed between the bars and the body, or fittings attached thereto. The bars are jointed to the body at E to allow it to rise and fall; but they are rigidly attached to the bolster and the axle, which will oscillate sufficiently to allow the body the necessary freedom for that motion. This arrangement allows of using cheap springs of any kind by placing them between the bars and the body, as F, G, or H, or between the bars and a support, I, as at J, the bars being prolonged beyond the joints E, and the joints being contrived low down under the body for the purpose, as in Fig. 2. These latter springs, being contrived with the short arms of the bars, afford the necessary play of the box with but slight range, and can therefore be of rubber, which is perhaps the simplest and cheapest, as well as the most durable, of any, besides being more satisfactory in respect of the soft and easy motion it affords. The same kind may be used between the bars and

the body, if placed sufficiently near to the pivots, as at H. The springs F may be used together with the springs G, H, or J, or not, as may be preferred, and they may also be used without them.

My improvement of the metallic fittings, by making them in malleable iron to economize in the cost of them, consists essentially of the contrivance of them to be applied or assembled with the other parts without special fitting, except in the shaping of the wood-work and the preparing of it as to size; also, the fitting of a few rivets or bolts. The fittings differ in form and arrangement according to the particular connections to be made by them. As here represented they comprise the clips L and M for connecting the bars A to the body, clips N for connecting the bars to the hind axle and front bolster, clips O for holding springs H, and clip P for connecting the shafts Q to the front axle R. The clip L is merely a plate provided with ears for the pivot-bolt, and holes for bolting or riveting it to the body, being used when the bars are not extended beyond the pivots, and the springs are interposed between the bars and the body; but the clips M, being intended for the extension of the bars until they meet together, and for the arrangement of rubber springs J under the ends of the extensions, have their ears for the pivot extended downward from the attaching-plates *j*, to hold the pivots under the bars, and also prolonged in the form of side plates S, connecting the two pivots, and forming one double clip for the two bars of one side. They also have the horizontal flanges and bottom plates I, forming a strengthening-chord for the plates S, and affording a seat for the springs J, and they also have the pivots cast together with them to save weakening them by pivot-holes, and the bars are connected to the pivots by the grooved plates V. There is also an arm, W, cast together with these clips for the connection of the brace X, to be used for holding the axle against rolling or oscillating when the shafts are jointed or pivoted to it. This arm is extended laterally from the bar, so that the end of the brace connected to the pivot *a* is the same distance from the bar as is the end connected to the axle, thus making the brace parallel with the bar, so that although

they rise and fall or swing on different centers they remain at all times parallel, and thereby prevent oscillating the axle as much as they would if not arranged parallel. When the clips L are used to connect the body to the bars these brace-arms will be formed on the clips O, with which I have also contrived a step, *b*. The clips N and P consist of a socket, *d*, and straps *e* for the bars or shafts, and an eye, *f*, for the axle. The eye may be completed as represented at the front end of Fig. 1, or it may be formed with the bottom plate *z*, Figs. 1 and 7, detached and fastened on studs or projections *m* by nuts, as in the form in which they are commonly forged. The brace *h* may also be cast together with these clips, or it may be jointed to the bottom plate, as in Fig. 7. A step, *l*, is also cast upon the front clip N. When the clips M are used a little block, *i*, is arranged between the ends and the bottom of the body to prevent too much freedom of the body to rise. This form of clip will be very strong laterally, so that it will hold the body in place better than other connections when the carriage overturns.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in a wagon-clip, of attaching-plates *j*, side pieces S, pivots E, and the spring-rests I, substantially as set forth.

2. The combination, in a wagon-clip, of socket *d*, straps *e*, and eye *f*, substantially as set forth.

3. The combination of brace X, its attaching-arm, and clip M, for holding the brace X parallel with the bar A, substantially as set forth.

4. The malleable cast-metal spring and bar-clip O, in combination with the step *b*, substantially as set forth.

5. The combination of the block *i* with the body-bars A and clip M, substantially as set forth.

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Witnesses:

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