(No Model.)

C. M. BROWN.

CARRIAGE SPRING.

No. 262,567 Patented Aug. 15, 1882.

Fig. 1.

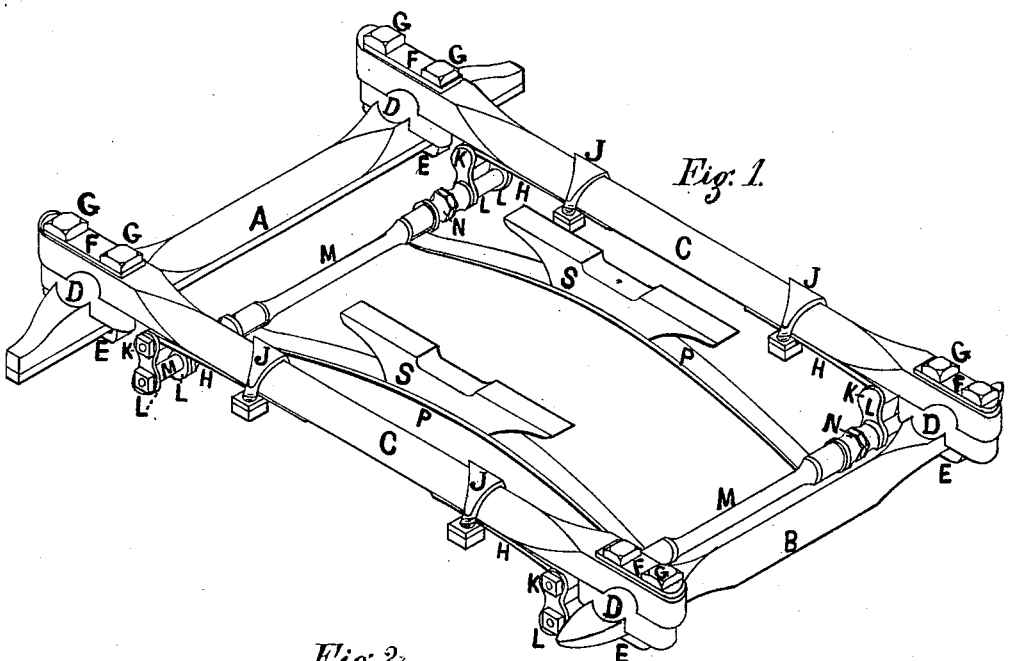


Fig. 2.

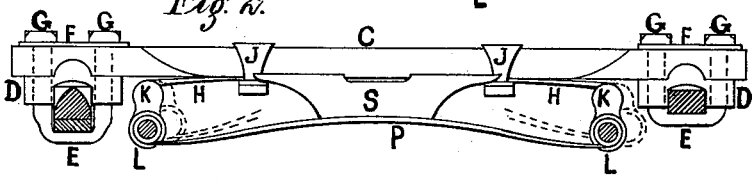
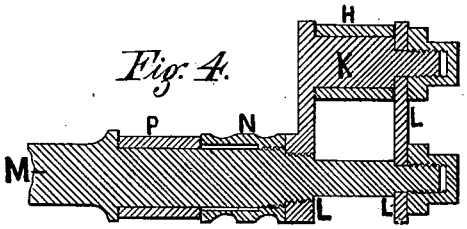


Fig. 4.



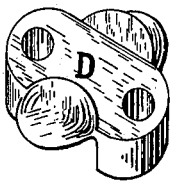


Fig. 3.

Witnesses;

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UNITED STATES PATENT OFFICE.

CALVIN M. BROWN, OF NEWPORT, NEW HAMPSHIRE.

CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 262,567, dated August 15, 1882.

Application filed January 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, CALVIN M. BROWN, of Newport, in the county of Sullivan and State of New Hampshire, have invented certain new and useful Improvements in Carriage-Springs, of which the following is a specification.

The objects of my invention are to provide such details of construction and arrangement of the several parts connected with the side springs and their attachment to the running-gear as shall overcome the objections existing in this class of springs as heretofore constructed, wherein two sets of straight side springs have been employed, connected respectively with the side bars and body at their central portions, and having their front and rear ends each mounted upon or connected with a cross-rod and in the same plane, which construction renders the carriage-body very liable to strike upon such cross-rods when heavily laden if the carriage be driven with speed over water-bars or rough roads; and in order to partially remedy this defect it has been found necessary to hang the body quite too high, which is also objectionable; and further objections to this class of springs is that the body of the carriage is rigidly held against longitudinal movement in relation to the running-gears thereof, in which case sudden jerks are communicated to the occupants by the contact of the wheels with obstructions, water-bars, and other irregular surfaces passed over. These and other similar defects are fully overcome by my invention, wherein I connect or mount the front and rear ends each of one set of springs to a cross-rod suspended from the outer ends of the other set of short springs secured underneath the side bars, whereby the cross-rod is lowered in its relative position to the bottom of the body, which is mounted upon the pair of curved springs, the front and rear ends of which are connected with the cross-rods on a plane lower than the former ones, which construction allows the two sets of springs to contact and expand, or lengthen and shorten unequally, thus avoiding the undue strain and friction which would result were the two sets of springs connected to cross-rods and in the same plane. The construction I have invented also allows the body of the carriage to have a longitudinal or swinging motion imparted to it in relation to the running-gear when the wheels thereof are brought suddenly into contact with sand-bars or water-bars or other obstructions. This feature is essential and important to the comfort and ease of the occupants.

My invention further consists in the construction and adaptation of double-seated chairs, whereby the ends of the side bars are more firmly secured in position upon the rear-axle bed-piece and front "rocker," as hereinafter more fully described, and set forth in the claims.

Figure 1 represents a perspective view of my invention. Fig. 2 represents a side elevation of the same. Fig. 3 represents a perspective view of one of the details of construction. Fig. 4 represents a section view of further details of construction.

A represents the hind axle and its bed-piece; and B represents the front rocker, near the ends of which, and upon the top thereof, is permanently secured the front ends of the side bars, C C, by means of the double-seated chairs D D, which are provided with upward projecting ears, which fit closely to each side of the said side bars, C, near the ends thereof, thus forming a seat for the same, while the double chairs D are in similar manner seated upon the said rocker, near the ends thereof, and have at the front and rear sides of the said rocker projections extending downward and in close contact with the same. These projections are provided with suitable bolt-holes extending vertically through the same, and having a clasp, E, the screw-threaded prongs of which are passed upward through said holes at opposite sides of said rocker and through a plate, F, provided with corresponding holes and placed upon the top of the said side bars, C, which have corresponding holes to receive the screw-threaded ends of the said clasp E, which are provided with the screw-threaded nuts G G, screwed upon the same so as to bear upon the said plate F, and thereby draw the said clasp E up firmly against the bottom surface of the end of said rocker B, and thereby secure the said side bar, C, therewith in a very strong and durable manner. The rear ends of the said side bars, C, being secured to and upon the top of the hind-axle bed-piece, A, in precisely the same manner as described, it will

not be necessary to repeat said construction in detail. It will be seen that this manner of attaching the ends of the side bars with the front rocker and rear axle and its bed-piece renders the connection so permanent, strong, and durable that the usual central reach or "perch" may be dispensed with, thereby permitting the carriage-body to be hung very much lower, which is a desirable object to attain.

To the under side of the side bars, C, I attach the short flat springs H H H H, two front ones and two rear ones being secured thereto at a point about one-third the distance between the said rocker and bed-piece, (more or less, as desired,) and by means of the clasps J, provided with screw-threaded ends and corresponding nuts, as heretofore, the ends of the said short springs H being provided with turned ends, forming eyes or lateral holes, in which are inserted the screw-bolts or projections K, extending at right angles through or from the vertical link or links or drop-link supports L L, fitting against each side of the said spring-eyes and extending downward a short distance, and provided with screw-threaded or plain holes, into which are screwed or otherwise fitted the ends of the cross-rods M, which are provided inwardly from said shackles L with a screw-thread, upon which is fitted a screw-threaded tubular nut, N, provided with a square or other angled surface adapted to be turned by means of a wrench. This nut N fills the space intervening between the inner drop-link supports, L, and the outer face of the eyes turned upon the ends of the long curved elliptic or flat side springs, P, which eyes or openings formed at the ends of the said springs P fit upon bearings formed upon the said cross-rods M, which are also provided with collars R, against which rest the opposite sides of the said eyes formed in the ends of the springs P, so as to retain the same in position thereon, and by means of the said tubular nuts N being thus adjusted therewith so as to prevent rattling and compensate for any wear which may occur. The side springs, thus constructed and arranged, are provided centrally with the usual spring-blocks or spring-bars, S, upon which the carriage-body is to be placed and secured in the usual manner.

The dotted lines shown in Fig. 2 illustrate the longitudinal movement or swinging motion which may be imparted to the inner set or pair of springs and body by means of this construction and arrangement of the above-described springs and their connecting devices.

It will be seen and understood that the front and rear connections and devices of the whole springs, as well as the short springs, are exact counterparts or identical in construction and in their connections, attachments, and operation with the front rocker and rear bed-piece and axle.

By connecting the short springs to the side bars at about the points shown, said side bars yield downwardly or spring somewhat, thereby contributing to render the carriage very easy in its spring motions or "easy riding."

I am aware that heretofore equalizing-rods have been employed with a single pair of side springs, said rods being placed with the bow upward, and one of which was rigidly attached to the body of the carriage, thus in a great measure preventing the free endwise action of the side springs connected to said rods. Therefore I do not claim either such construction, combination, or arrangement, as it would not serve the purposes contemplated by my invention.

Having thus described my invention, what I claim is—

1. The combination of the short flat springs H, secured under the side bars, C, toward the ends thereof, the drop-links L, pivoted to the ends of the said springs, the straight cross-rods M, connected to the lower ends of the said drop-links, and the long curved side springs, P, connected at their ends with said cross-rods and held in position therewith by means of the tubular screw-threaded nuts N, all being constructed and arranged substantially as shown and described, as and for the purposes set forth.

2. The combination, with the side bars, C C, rocker B, and bed-piece A, of the flanged double-seated chairs D, provided with bolt-holes, and having connected therewith the screw-bolt clasps E, whereby the ends of said side bars are rigidly secured to the said rocker and bed-piece, substantially as shown and described, as and for the purposes set forth.

3. The combination of the tubular screw-threaded nuts N with the cross-rods M, side springs, P, and drop-links L, constructed and arranged substantially as described, as and for the purposes set forth.

CALVIN M. BROWN.

Witnesses:
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S. C. P. WELLCOME.