(Model.)

A. H. CADUGAN.

WAGON SPRING.

No. 263,853. Patented Sept. 5, 1882.

Fig. 1

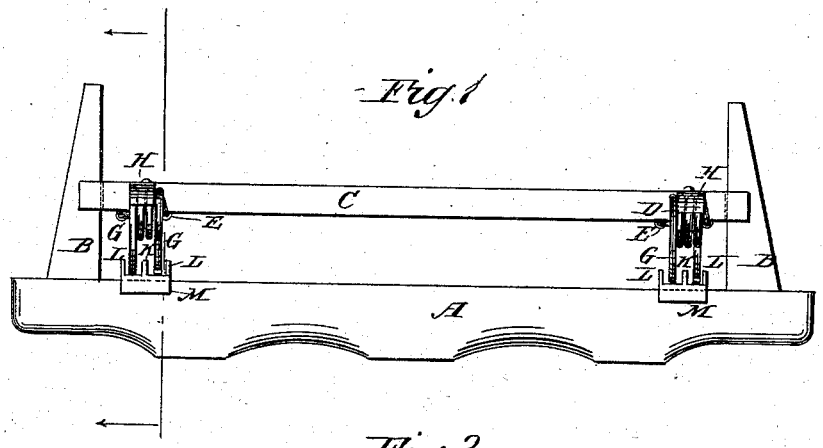


Fig. 2.

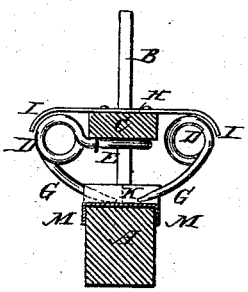


Fig. 4.

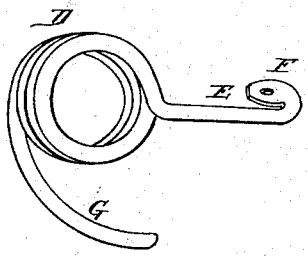


Fig. 3.

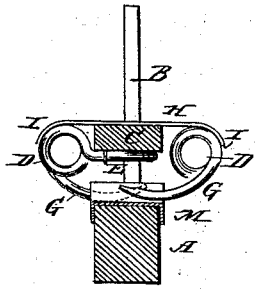
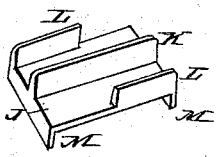


Fig. 5.



WITNESSES:

Francis M. Ardle

C. Sedgwick

INVENTOR:

A. H. Cadugan

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALBERT H. CADUGAN, OF WALES CENTRE, NEW YORK.

WAGON-SPRING.

SPECIFICATION forming part of Letters Patent No. 263,853, dated September 5, 1882.

Application filed May 19, 1882. (Model.)

To all whom it may concern:

Be it known that I, ALBERT H. CADUGAN, of Wales Centre, in the county of Erie and State of New York, have invented a new and Improved Wagon-Spring, of which the following is a full, clear, and exact description.

My invention consists in coiled springs arranged between the bolsters of a farm-wagon, and riders for the wagon-box bed to rest on, said riders being located over the bolsters, and secured and guided by the bolster-stakes in their play upon the springs, the said springs being so contrived that as they are compressed by the load their power is proportionately increased by the shortening of the distance between the bearing-points of the supporting-arms and the coils of the springs, thereby more effectually adapting the springs for uniformity of elasticity with light and heavy loads, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the bolster of a farm-wagon with springs applied according to my invention. Fig. 2 is a transverse section showing the position of the springs with a light load. Fig. 3 is a transverse section showing the position of the springs with a heavy load. Fig. 4 is a perspective view of one of the springs, and Fig. 5 is a perspective view of a bearing-plate for the springs.

A represents the bolster; B, the stakes of the bolster, and C the rider located over the bolster for the support of the wagon-box bed on the springs, said rider being notched at the ends to fit on and be secured and guided by the stakes. Near each end this rider is supported by a pair of coiled springs, D, whereof E is an arm of one end of a steel rod fitted with an eye, F, and attached to the under side of rider C, so that the coil projects beyond the side of the rider, and G is an arm of the other end of the coil, bearing at the end on the top of the bolster, the springs of a pair being arranged on the respective sides of the rider, so as to act one against the other, with a resultant effect of vertical play of the rider.

The connecting-arms E are re-enforced by the bars H, attached to the upper side of the rider and bearing on the upper side of the coils, said bars being curved at I in conformity with the shape of the coils for suitable bearing thereon.

J represents bearing-plates of chilled iron, to be placed on the bolster where the springs work to afford smooth and durable bearings for them, said plates having a partition-flange, K, and side flanges, L, to keep the springs in place, and also having flanges M to keep them in place on the bolster.

It will be seen that when the load is light and the springs are relaxed they rise up and rest on the ends, as represented in Fig. 2, and when loaded and pressed down, as in Fig. 3, the bearing-point on the bolster changes along arms G toward the coils, and thereby the carrying power of the springs is proportionately increased with the retention of the elasticity in great measure.

These springs are very simple, light, and cheap, and also durable. They are also readily removable, and new ones may be as readily applied when required. They can be readily taken off and be dispensed with at any time when not required.

For springs of greater power I propose to employ two or more additional springs between the two here shown, with arm G so set that said arm will not touch the bolster-plate until the others have been compressed to some extent, when they will act in re-enforcement of the first springs. I may also use such re-enforcing springs in combination with the ordinary elliptic or half-elliptic springs.

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

1. The combination, with rider C and bolster A, of coiled springs D, having arm E, connected to the rider, and arm G, resting on the bolster, substantially as described.

2. The combination of bar H with rider C and springs D, substantially as described.

3. The combination of bearing-plates J, having flanges K L, with springs D and bolster A, substantially as described.

4. The combination of bearing-plates J, having flanges K, L, and M, with springs D and bolster A, substantially as described.

ALBERT H. CADUGAN.

Witnesses:
E. G. KENT,
GEO. C. NUTTING.