(No Model.)

C. A. HOWARD.

BOLSTER SPRING FOR VEHICLES.

No. 261,349. Patented July 18, 1882.

Fig. 1.

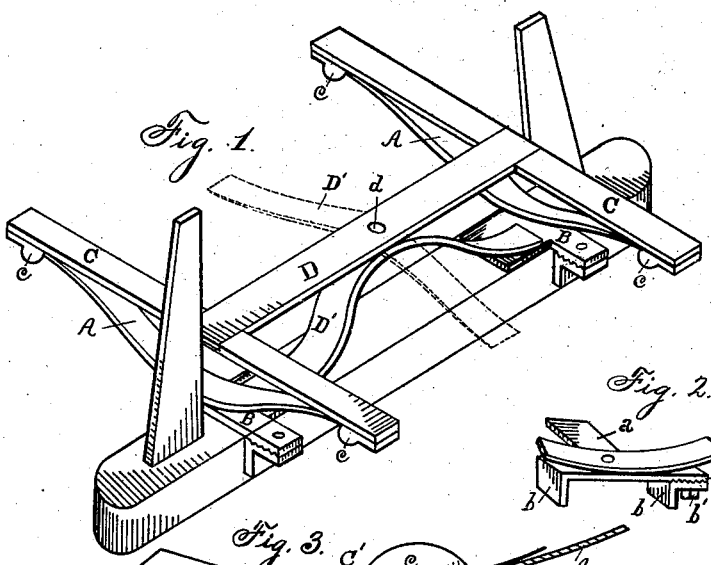


Fig. 2.

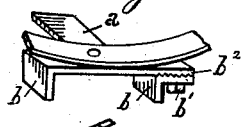


Fig. 3.

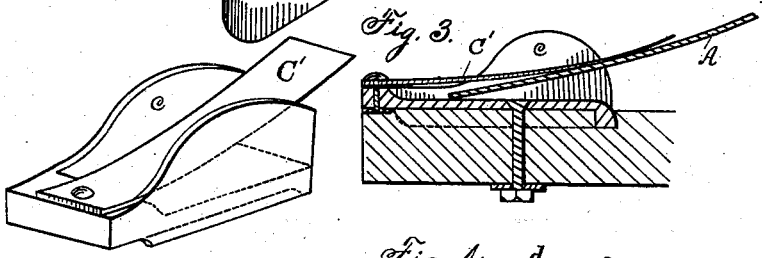
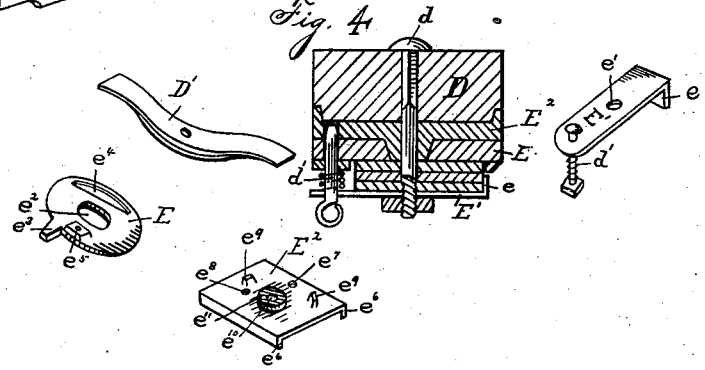


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES A. HOWARD, OF PONTIAC, MICHIGAN.

BOLSTER-SPRING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 261,349, dated July 18, 1882.

Application filed March 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. HOWARD, of Pontiac, county of Oakland, State of Michigan, have invented a new and useful Improvement in Removable Bolster-Springs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists in the combination of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a device embodying my invention as applied to a wagon-bolster. Fig. 2 is a separate view of the mechanism whereby the device is attached to a bolster. Fig. 3 represents separate views of the socket underneath the bar. Fig. 4 represents separate views of the attachment of the cross-spring underneath the brace.

The object of my invention is to provide a removable spring for wagon-boxes which may be applied to or removed from the bolster at pleasure, and is particularly designed as an improvement upon a spring for which Letters Patent were issued to me January 10, 1882, No. 252,036.

In carrying out my invention, A A represent ordinary semi-elliptical metallic springs.

B represents a shoe attached to the under surface of each spring midway between their upturned extremities, and provided with projecting jaws *b*, one or both of said jaws adjustably secured by a bolt, *b'*, to the upper portion of the shoe, and preferably serrated therewith, as shown at b^2, said shoe thus adapted to be applied to any bolster, as may be required, and to support the springs at right angles thereto.

a is a wearing-plate attached to each shoe.

C C represent cross-bars supported upon the extremities of the springs A A, provided at either end with a suitable socket, *c*, to engage the ends of the spring and permit their necessary movement when the spring is depressed, and vice versa, said socket preferably provided with a subsidiary spring or lip, C', adapted to press upon the ends of the spring A and prevent undue motion and noise or rattle.

D is a cross-brace parallel to the bolster, halved or mortised into the bars C C, constructed to hold them firmly at each end of the bolster and preferably made flush with the surface of the bars. It is preferably provided with an additional semi-elliptical cross spring or springs, D', pivoted to the under surface of said brace midway from its extremities, as shown at *d*.

In Fig. 4, E and E' are plates upon the upper and under surfaces of the spring D'. E^2 is a shoe between the plate E and the brace D. The plate E' is provided with a flange, *e*, to engage the spring, an orifice, *e'*, for the pivot *d*, and a spring-bolt or other similar device, *d'*. The plate E is provided with a central orifice, e^2, a projection, e^3, upon its edge, and flanges e^4 and e^5 to engage the spring D', e^5 having an orifice for the spring-bolt *d'*. The shoe E^2 is provided with flanges e^6 to engage the brace D, sockets e^7 e^8 for the reception of the bolt *d*, lugs e^9 to engage the projection e^3, and a central orifice, e^{10}, said orifice provided with a shoulder, e^{11}, adapted to fit into the orifice e^2 of the plate E.

When the spring D' is desired to be adjusted upon the bolster the spring-bolt *d'* is caused to engage in its appropriate socket e^7 in the shoe E^2, in which condition the ends of the spring D' bear upon the wearing-plates *a*. When this said spring D' is not desired to be thus adjusted upon the bolster the construction is such that by disengaging the spring-bolt *d'* from the socket e^7 the spring D' may be turned at right angles to the brace D, the bolt *d'* being then engaged in the corresponding socket, e^8, in the shoe E^2, thus securing the spring D' in that position.

In the use of this device it is evident that by raising the box of the wagon it may be easily adjusted upon any bolster and the box be readjusted upon it, resting upon the cross-bars C C and the cross-brace D.

What I claim is—

1. A removable spring mechanism consisting of two semi-elliptic springs, each provided at the middle of its convex surface with a shoe adapted for attachment to a wagon-bolster, and bars connecting the ends of each spring, and having sockets for receiving the ends of said springs loosely, substantially as described.

2. In a removable bolster-spring mechanism, the combination, with the semi-elliptic springs provided at the middle of their convex surfaces with shoes for engaging a wagon-bolster, of the bars connecting the ends of each spring, and a cross-brace connecting said bars, substantially as described.

3. In a removable spring mechanism for wagon-boxes, semi-elliptic springs provided with means for engaging a wagon-bolster, and bars provided with spring-sockets for uniting the free ends of the springs, substantially as described.

4. In a removable spring mechanism for wagon-boxes, the combination, with a brace and cross-spring, of a plate, E, and shoe E^2, and a spring-latch for holding the spring in place on or off the bolster, substantially as described.

5. In a removable spring mechanism for wagon-boxes, an adjustable shoe provided with a projecting wearing-plate adapted to receive the wear of the extremity of the center spring, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES A. HOWARD.

Witnesses:
J. EDWARD WARREN,
N. S. WRIGHT.