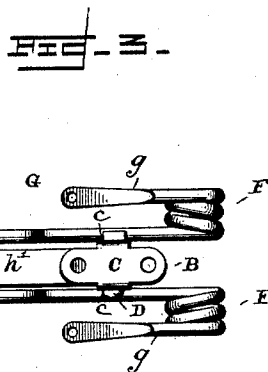
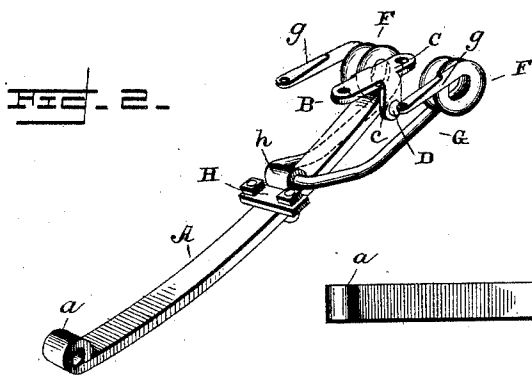
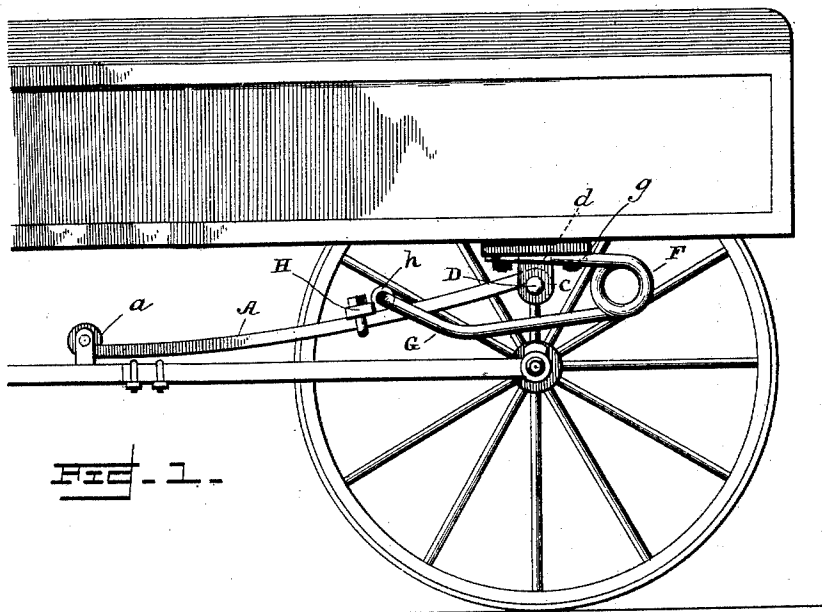


(No Model.)

E. H. BOOTH.
VEHICLE SPRING.

No. 468,234.

Patented Feb. 2, 1892.



Witnesses

E. S. Duvall Jr. By his Attorney,
P. B. Massi.

Inventor
E. H. Booth.
E. W. Anderson.

UNITED STATES PATENT OFFICE.

EBENEZER H. BOOTH, OF KIRKWOOD, NEW YORK.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 468,234, dated February 2, 1892.

Application filed October 17, 1891. Serial No. 408,971. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER H. BOOTH, a citizen of the United States, and a resident of Kirkwood, in the county of Broome and State of New York, have invented certain new and useful Improvements in Vehicle-Springs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation. Fig. 2 is a perspective view of spring, and Fig. 3 is a top plan view of same.

This invention has relation to certain new and useful improvements in vehicle-springs; and it consists in the novel construction and combination of parts, as hereinafter specified.

In the accompanying drawings the letter A designates a spring arm or lever having at one end an eye *a* or other suitable means for connection with the running-gear of a vehicle. To the opposite end of said arm or lever is pivotally connected a shackle B, which comprises the perforated attaching-plate portion C, having the depending lugs *c*, through which is passed a pivot-bolt D, said bolt also passing through a horizontal eye *d* on said lever.

F designates the lateral coils, located one on each side of the arm A and formed in an approximately W-shaped wire or spring G. The free ends of the spring G are formed into the parallel arms *g g*, tangent to the coils F. The intermediate portion of the spring between the coils is bent into an inverted-U shape, the side arms thereof being bent upwardly, as shown, and united by a band having loose bearings in an eye *h* on a clip H, held on the arm A. This clip may be adjustable longitudinally on said arm, in order to adjust it to light or heavy vehicles, the shape of the arm being entirely dependent upon the height at which it is desired to support the vehicle-body, and as said arm will usually be curved to a greater or less extent the adjustment of the clip thereon

will regulate the power or action of the spring. The free ends of the arms *g*, together with the plate portion C of the shackle, are bolted to the under side of the vehicle-supporting bar.

By means of the construction described the arms *g g* may be short, and, together with the curved portions of the central bow, operate in such a manner as to avoid all backward crowding on the coils and the consequent breakage thereof. The number of the coils may be regulated according to the tension desired; also, if desired, the two coils may be made independent of each other by forming the spring G in two parts, the upwardly-turned lower portion of each having a bearing in the clip on the arm or lever, as by eyes on either side of bolt.

These springs are capable of application to either heavy or light vehicles, as will appear from the above description, and by varying the form of the spring arm or lever can be made to support the vehicle-body at any desired height.

Having described this invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a vehicle-spring, the combination, with the lever or arm having the shackle pivotally secured at one end thereof and adapted to be attached to the running-gear at the opposite end, of the lateral coils having the parallel attaching-arms and the upwardly-curved arms bearing in a clip held to said arm or lever, substantially as specified.

2. In a vehicle-spring, the combination, with the spring arm or lever adapted to be secured to the running-gear at one of its ends and having a shackle provided with a perforated attaching-plate portion pivotally secured at its opposite end, of the lateral coils arranged on either side of the said arm or lever, said coils having the arms *g g* and the curved arms bearing in a clip on the arm or lever, substantially as specified.

3. The combination, with the spring arm or lever having the shackle pivotally secured thereto, of the coils F, arranged on either side of said bar, said coils having the upper arms *g g* and united by the U-shaped por-

tion having the curved side arms connected by a bow having loose bearing in a clip adjustable on said arm or lever, substantially as specified.

- 5 4. The combination, with the arm or lever and the shackle pivotally secured thereto, of the clip adjustable longitudinally on said arm and forming a bearing for the arms of

spring-coils arranged on either side of said arm, substantially as specified. 10

In testimony whereof I affix my signature in presence of two witnesses.

EBENEZER H. BOOTH.

Witnesses:

JOHN J. BOOTH,
JESSE C. BOOTH.