

U. S. HALL.

Spring-Couplings for Carriages.

No. 133,705.

Patented Dec. 10, 1872.

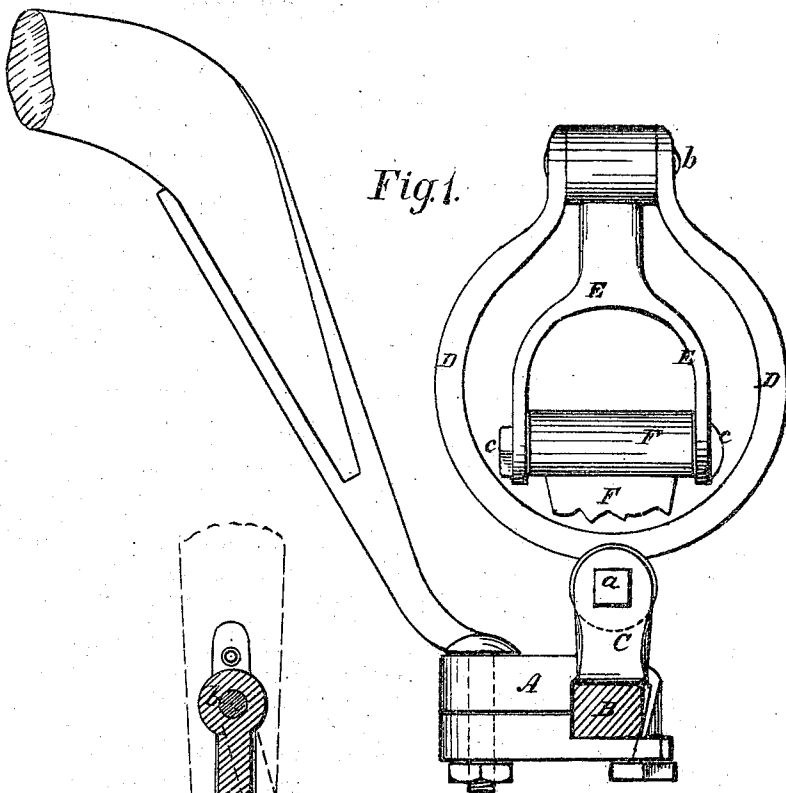


Fig. 1.

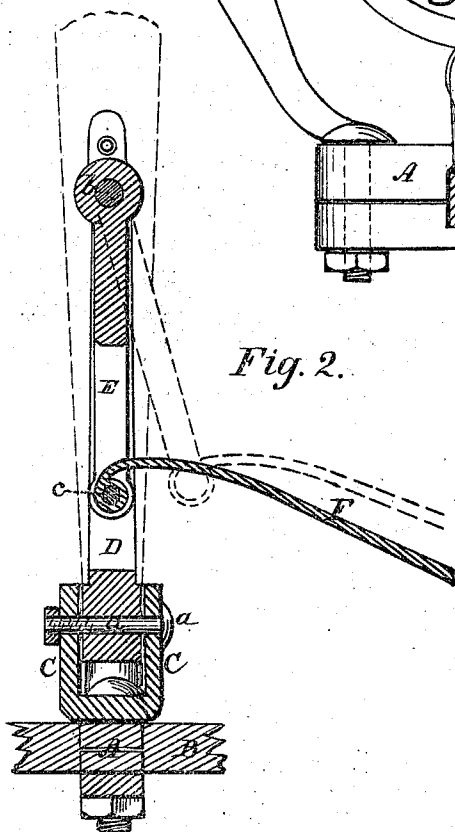


Fig. 2.

Inventor:

Uriah S. Hall,

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His Attorneys

Witnesses:

West Wagner,

Augustus H. Girard

UNITED STATES PATENT OFFICE.

URIAH S. HALL, OF WATKINS, ASSIGNOR OF ONE-HALF HIS RIGHT TO
JESSE OWEN, OF ELMIRA, NEW YORK.

IMPROVEMENT IN SPRING-COUPPLINGS FOR CARRIAGES.

Specification forming part of Letters Patent No. 133,705, dated December 10, 1872.

To all whom it may concern:

Be it known that I, URIAH S. HALL, of Watkins, in the county of Schuyler and State of New York, have invented a certain new and useful Improvement in Spring and Thill Coupling for Carriages, of which the following is a specification:

My invention has for its object the relief of carriage-springs from the destructive effects of sudden thrusts and twists from the body and running-gear; and my said invention consists of a spring-coupling having an outer pivoted bail and an inner hinged bail or link, the latter being suspended within the former so that it is free to move therein with the spring; the support for the outer bail being directly upon the axle, and the point of suspension of the inner bail being at the top of the outer one, to obtain the advantages of compactness and strength while allowing of a free yielding movement in the directions from which the thrusts and strains on the spring occur. My invention also consists in constructing the support for such spring-connection device and the thill-coupling of a united piece secured upon the axle, whereby the requisite strength and desired economy in the construction and arrangement of these parts are obtained.

In the accompanying drawing, Figure 1 represents an end view of the spring-connection device as arranged to form a united part of the thill-coupling. Fig. 2 represents a section of these parts taken lengthwise of the spring.

My present improvements are designed for connecting the ends of the front spring with the running-gear of the carriage, and to obtain a sort of universal motion to the front spring while it is sufficiently braced against undue motion.

The thill-coupling A, as shown, is made the base for the spring-connection directly upon the axle B by means of two arms, C, rising from the said coupling, between which a bow, bail, or ring, D, is pivoted by a strong bolt, *a*, upon which it is free to turn forward and backward with the thrusts of the carriage-body. Within or to this device a similar bow, bail, or ring, E, is secured so as to be suspended by a strong bolt, *b*, or have a movement upon said outer bow, but not in the same direction. To the lower end of this suspended link E the end of the spring F is secured by a strong pivot-bolt, *c*, upon which

it may turn as it yields with the weight of the body, while it also may have a movement in the direction of the length of the spring with the link E, and therefore at right angles to the first-named movement of the said spring, the two movements being produced by a duplex hinged connection for each end of the spring.

In this way I obtain a very strong and compact arrangement for the yielding connection of the spring or springs of a vehicle, and by which, in whatever direction the body of a vehicle may produce a thrust, whether forward, backward, or sidewise, the spring will be entirely relieved and protected, and hence rendered more durable than hitherto effected by devices for relieving the direct forward and backward thrusts upon the spring.

The hinges *a b* of the bails are directly above the axle B and in a line with the spring F; and the hinge of the spring is directly between and independent of those of the duplex connections, whereby the spring is free to have a rocking movement back and forth upon its outer end bails and laterally or endwise upon its inner bails, so that all sudden thrusts of the body or running-gear will be transferred from the spring to its strong yielding connections, in the manner stated.

In the drawing I have shown a thill-iron connection with the coupling; but it is obvious that the thills may be removed and a pole connection made in the same manner.

Having described my invention, I claim—

1. The outer bail D, pivoted as described, and the bail or link E for the spring F suspended within and from said outer bail, so that it is free to move therein with the spring, as and for the purpose described.

2. The combination of the bails D and E, constructed and arranged as described, with the axle B and the spring F, substantially as described.

3. The hinged couplings for the spring, supported by and hinged to an integral part of the thill-coupling, as described.

In testimony whereof I have hereunto set my hand this 24th day of August, A. D. 1872.

Witnesses:

URIAH S. HALL.

HARMON L. SMITH,
M. H. CARD.