(No Model.)

A. W. FIELDER & E. KELLY.

Vehicle Spring.

No. 232,019. Patented Sept. 7, 1880.

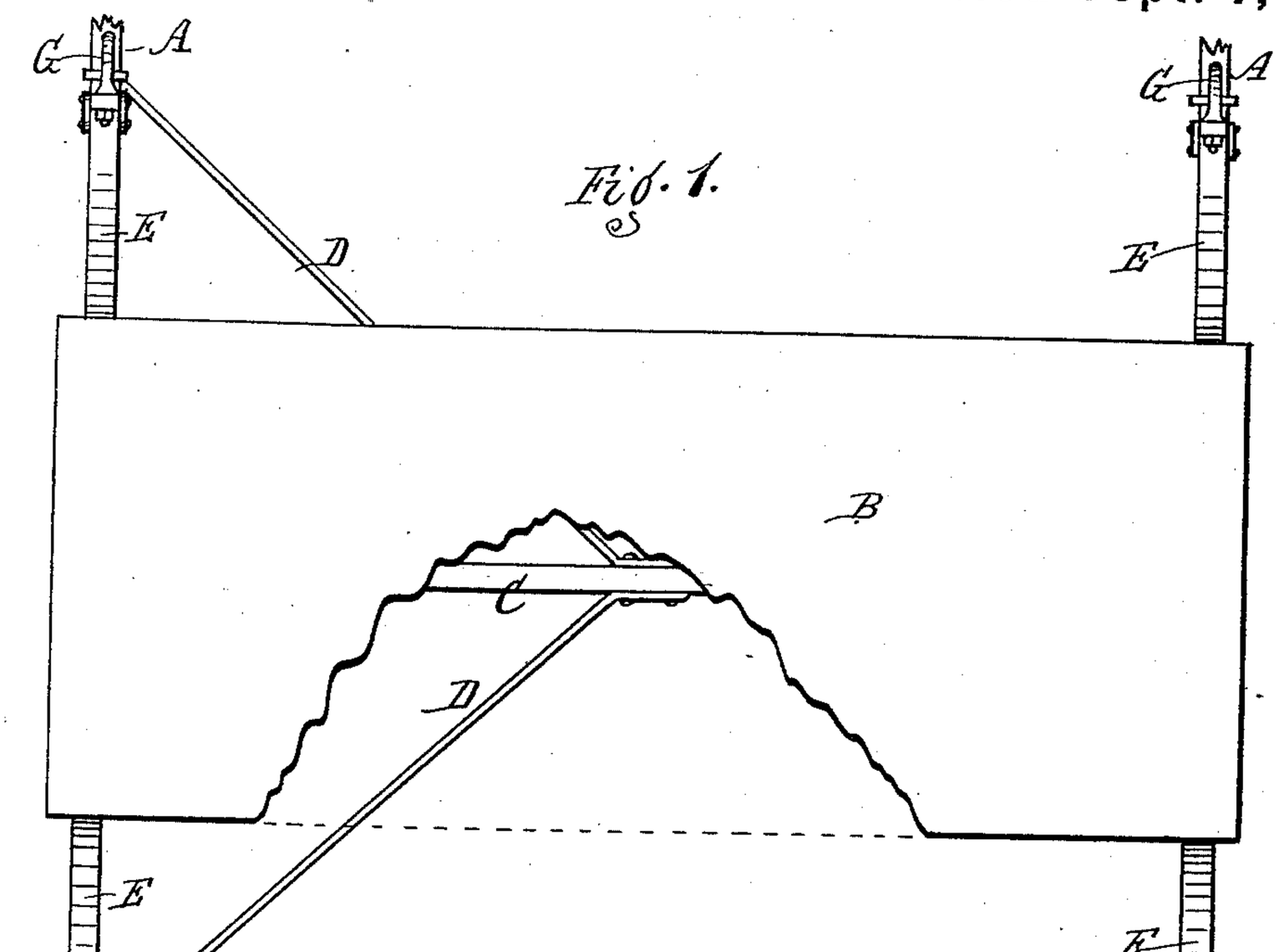


Fig. 1.

Fig. 2.

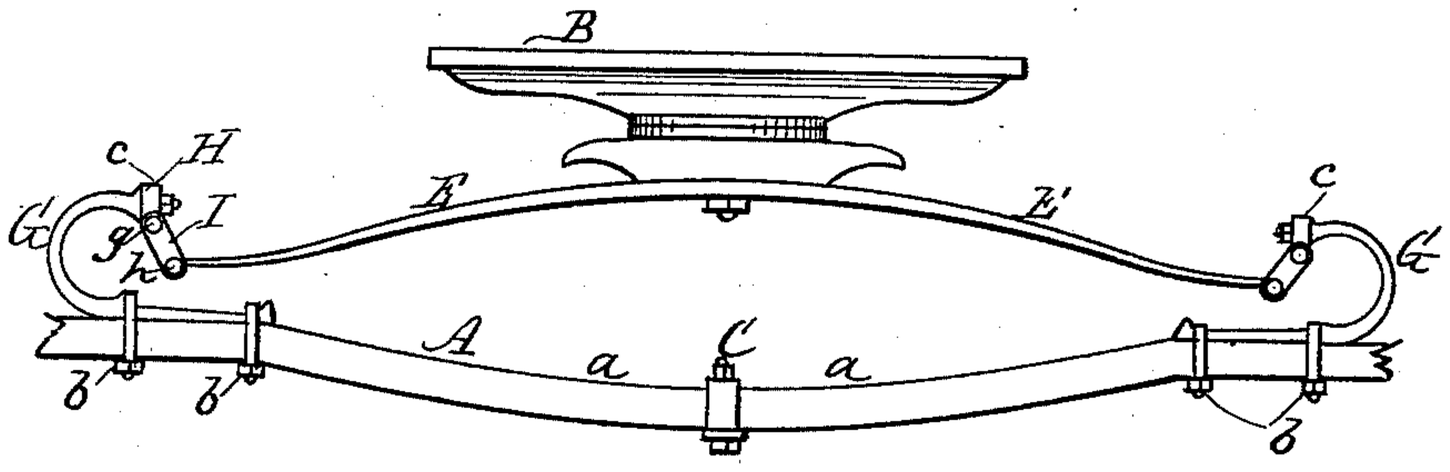


Fig. 3.

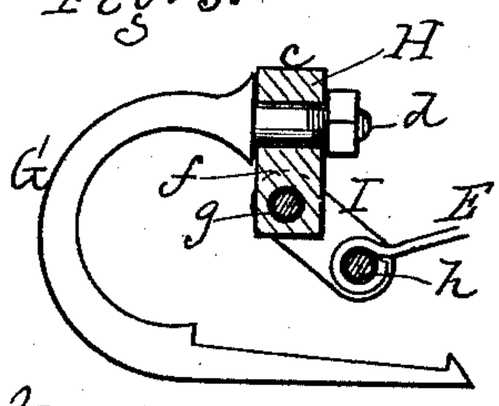
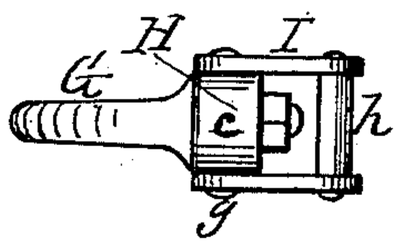


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALFRED W. FIELDER AND EDWARD KELLY, OF DANSVILLE, NEW YORK.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 232,019, dated September 7, 1880.

Application filed June 9, 1880. (No model.)

To all whom it may concern:

Be it known that we, ALFRED W. FIELDER and EDWARD KELLY, both citizens of the United States, and residents of Dansville, Livingston county, New York, have invented a certain new and useful Improvement in Vehicle-Springs; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of the running-gear of a vehicle, showing our improvement. Fig. 2 is a front elevation of one of the springs. Figs. 3 and 4 are detail views.

Our improvement relates to what is known as "buckboard-wagons."

As usually made such wagons have no reach, and braces extend from the rear axle up to and are attached to the under side of the spring-board, forming the wagon-body. The springs are also made so as to preserve a vertical plane with the axle. When the board springs down, as it does under weight, the axles being bent more or less, they roll on their centers and consequently change the position of the wheels.

Our invention consists in an improved construction of the springs, whereby this difficulty is avoided and less strain comes upon the springs.

In the drawings, A A represent the axles; B, the spring-board; C, the reach, and D D angular braces extending from the ends of the rear axle to the reach, where it is attached, instead of extending up to the board, the latter being free, therefore, to spring up and down with great freedom and ease. The axles are bent downward in the center, as shown at *a*, Fig. 2.

E is the spring, made in half-elliptic form, and made of one or more leaves, as necessity requires. G G are hangers or goose-necks at opposite ends of the spring, attached to the axle by clips *b b*, and adjustable forward and back to different positions, by which means they may be adapted to longer or shorter springs and fitted to give proper action to different springs. H is a double knuckle attached to the hanger and forming the support for the end of the spring. It consists of an eye or bearing, *c*, which turns on a journal, *d*, of the hanger in a direction at right angles to or crosswise of the axle and spring, and also of a block, *f*, which forms a bearing for a swivel-link, I, which turns up and down in line with the axle and spring. The link I is connected with block *f* by a pin, *g*, and the end of the spring is connected with the link by a similar pin, *h*.

By the means above described it will be seen that the spring can play up and down in the usual manner by the turning of the link I in the knuckle, and at the same time it can turn laterally or crosswise by reason of the eye *c* turning on the journal *d* of the hanger.

By connecting the two axles by a reach the axles are prevented from rolling, and by providing the springs with a double-knuckle joint, as before described, the springs have perfect freedom of action both up and down and laterally, or at right angles to the axles. Therefore, as the spring-board is vibrated so as to depress the center more than the ends, the springs can turn axially to accommodate the action without producing strain upon the springs or rolling of the axles. By this means the great objection to ordinary buckboard-wagons is obviated.

Another advantage consists in the combination of the double knuckles and the adjustable hangers or goose-necks, by which the knuckles can be adjusted exactly to the spring to produce ease of action and prevent binding of the knuckle in its lateral action.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a vehicle-spring, the combination of the adjustable hangers or goose-necks G G, the double knuckles H H, and the links I I, arranged to operate in the manner and for the purpose specified.

2. In a vehicle-spring, the combination, with the hanger G and spring E; of a knuckle, H, turning laterally on a journal, *d*, of the hanger, and a link, I, turning longitudinally on the knuckle, and forming an attachment for the spring, as herein shown and described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

ALFRED W. FIELDER.
EDWARD KELLY.

Witnesses:
FRANK FIELDER,
ANDREW J. SHAFER.