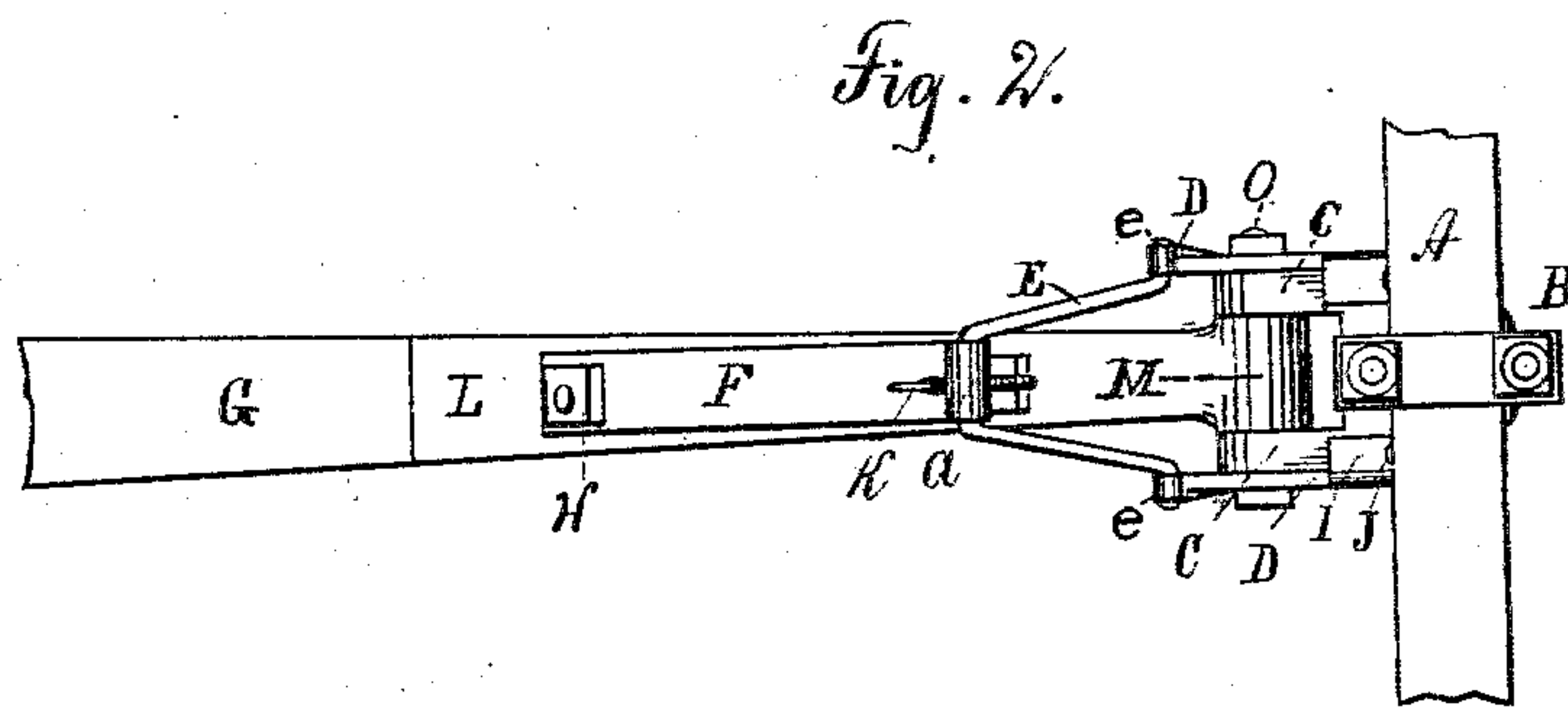
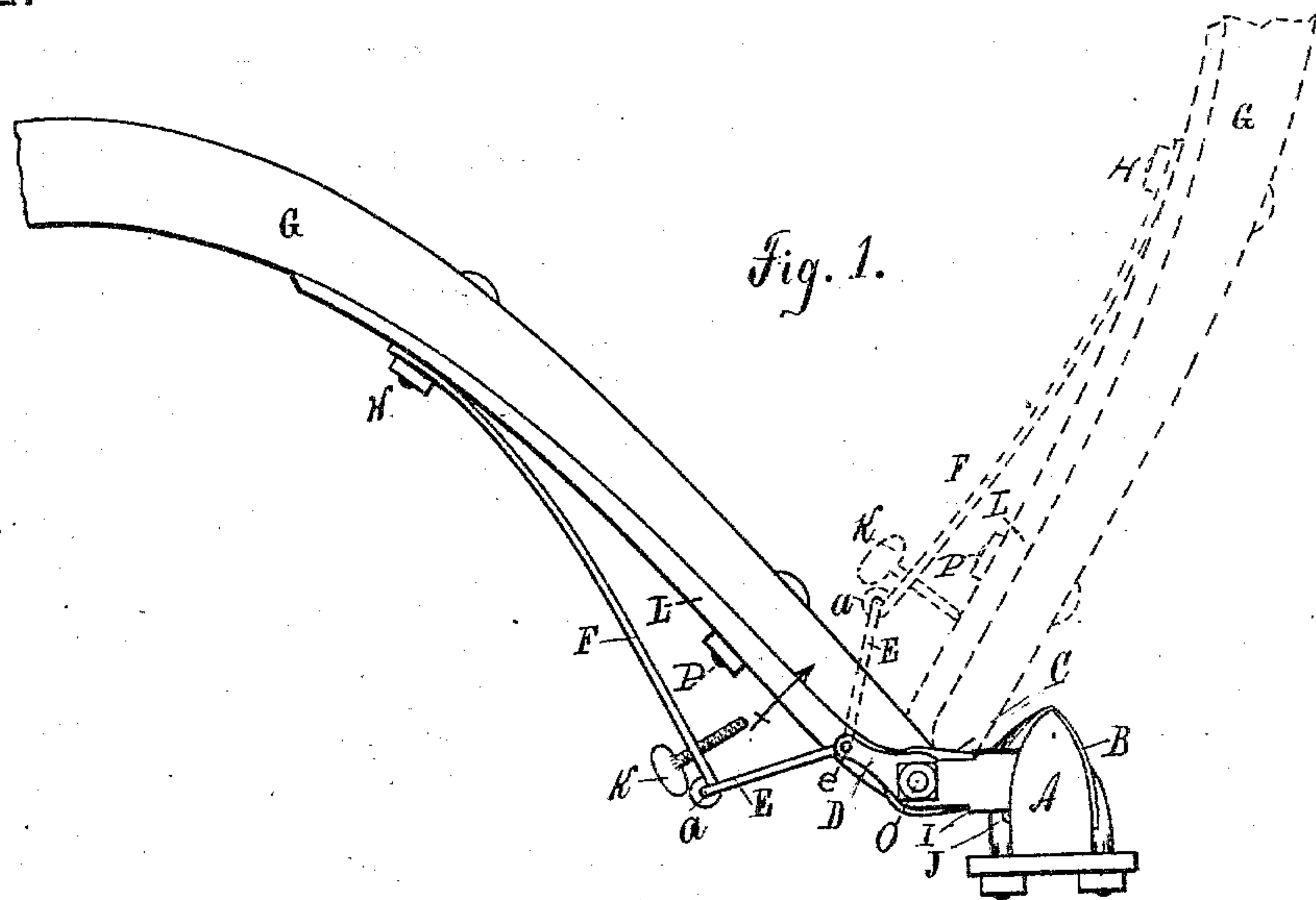


(No Model.)

E. H. & C. MORGAN.
THILL SUPPORTER.

No. 280,942.

Patented July 10, 1883.



WITNESSES:

H. V. Greene
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UNITED STATES PATENT OFFICE.

EDGAR H. MORGAN AND CHARLES MORGAN, OF FREEPORT, ILLINOIS.

THILL-SUPPORTER.

SPECIFICATION forming part of Letters Patent No. 280,942, dated July 10, 1883.

Application filed May 19, 1883. (No model.)

To all whom it may concern:

Be it known that we, EDGAR H. MORGAN and CHARLES MORGAN, residents of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Thill-Supporters; and we do hereby 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 pertains to make and use the same.

Our invention is an improved device for holding the thills of a vehicle in a vertical or nearly vertical position when not in use, and is so constructed and attached to the vehicle as to serve as an anti-rattler for the thill-coupling joint when the thills are in working position.

The invention is fully described and explained in the following specification, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the thill-supporter attached to the thills, the full lines showing the thill in working position, and the dotted lines showing it raised up and out of use; and Fig. 2, a bottom plan of the thill and supporter in the position shown by full lines in Fig. 1.

In the drawings, A is the front axle of a vehicle; B, an ordinary clip provided with two forward-projecting ears, C C; G, a thill of ordinary form, and L the thill-iron, bolted to the under surface of the thill and terminating in a knuckle, M, which lies between the ears C C, and is secured in place by a common bolt, O. The parts thus far enumerated are, in other words, a thill and axle connected by the simplest and commonest form of thill-coupler.

On the outside faces of the ears C C are two plates, D D, held in place by the bolt O, which passes through them, and also by lugs I I' on the upper and lower edges of each plate, extending inward above and below the ears C C. The plates extend forward a short distance in front of the bolt O, their forward ends being horizontally drilled for the reception of the outwardly-turned ends *ee* of a link or stirrup, E, formed of a single wire or rod, and consisting of a straight middle portion, two legs bent at an obtuse angle to the middle portion, and the ends *ee*, already referred to, which are parallel to the middle portion.

A flat spring, F, is rigidly secured to the under surface of the thill-iron by a bolt, H, which passes through it, near its forward end, while at its rear end it is provided with an eye, *a*, which encircles the straight middle portion of the stirrup E. The shape and position of the spring and the relations of the parts are such that when the thill is in working position, as shown by the full lines in Fig. 1, the end *a* of the spring is pushed away from the thill-iron, and the spring exerts its force through the link E directly against the plates D and ears C. The knuckle M is thus pressed forward tight against the bolt O, which passes through it, and all rattle of the thill-coupling joint is absolutely prevented. As the thill is raised when not in use, the eye *a* describes an arc of a circle about the points *e* as a center, the limit of the arc being determined by the height to which the thill can be raised without obstruction from the other parts of the vehicle. At one position of the thill in its upward course the eye *a*, the ends *e* of the link, and the bolt O of the thill-coupling all lie in the same plane. In this position the force exerted by the spring has no tendency either to raise or lower the thill, the points being on the "dead-center." When the eye *a* falls below this plane, the force of the spring tends to depress the thill. When it rises above the plane, the same force tends to raise the thill. When the spring is a short distance above its dead-point, the weight of the thill overcomes the tendency of the spring to raise it; but as the thill rises more nearly into a vertical position its weight is more nearly balanced upon the bolt O, which supports it, and when it reaches the position shown by the dotted lines in Fig. 1 the force of the spring is amply sufficient to hold it erect. It will be observed that when in the erect position (shown by the dotted lines) the end *a* of the spring lies very near the thill-iron, and the point of attachment H, the eye *a*, and the ends *e* of the link are very nearly in the same plane. The downward pressure put upon the thill to depress it is thus exerted almost wholly in the line of the length of the spring, and but a very small part of the force tends to push the end of the spring away from the thill-iron. By means of this relation of the parts a light spring offers

great resistance to the tendency of the thill to fall to the ground. Should the points H a e come exactly in the same plane, the thill would be locked in its upright position, and could only be released by breaking or disengaging the parts. To prevent this a set-screw, K, is inserted in the spring. Instead of using the set-screw, the bolt P may be lengthened, and will answer the same purpose.

10 In making new work it is not necessary to use the detachable plates D; but the ears C C are lengthened in front of the bolt O, and perforated at their ends for the reception of the ends e of the link E.

15 It is evident that the link E and the joints which connect it with the other parts may be varied in form in a number of ways without affecting the principle or operation of the device shown; but we think the form shown is the simplest and most satisfactory which can be devised.

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

25 1. The combination of the thill and axle of a vehicle, a suitable coupling-bolt connecting

the same, a spring, the forward end of which is rigidly attached to the under side of the thill, suitable bearings rigidly attached to the axle and extending forward beyond the thill-coupling bolt, and a link, one end of which is pivoted in the free end of said spring, while the other end is pivoted in said bearings at points in front of said coupling-joint, substantially as and for the purpose set forth.

35 2. The combination of the thill-iron L, spring F, ears C C, detachable plates D D, and link E, all constructed and operating substantially as described.

3. The combination of the thill-iron L, spring F, plates D D, and set-screw K, substantially as shown and described, and for the purpose set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

EDGAR H. MORGAN.
CHARLES MORGAN.

Witnesses:

R. H. WILES,
OSCAR TAYLOR.