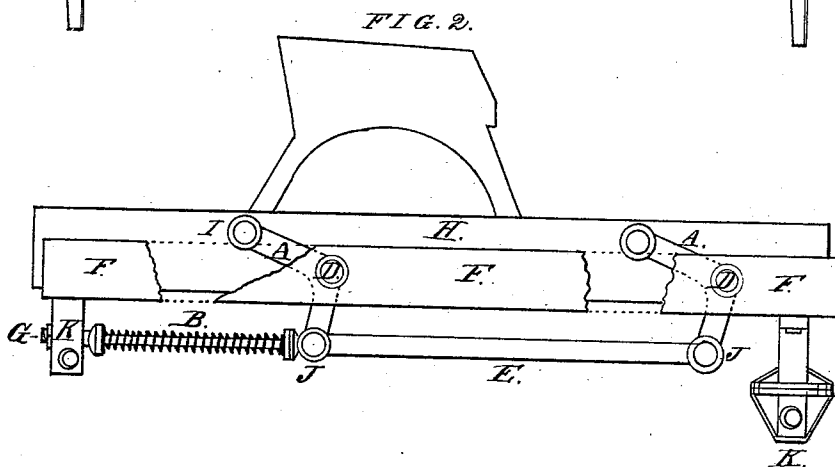
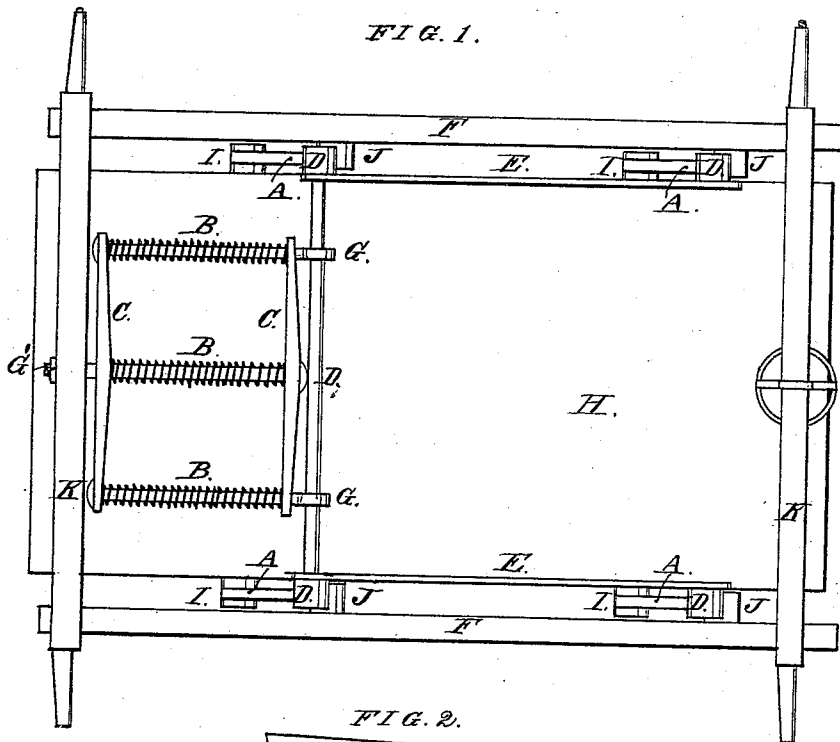


Vehicle-Spring.

No. 211,866.

Patented Feb. 4, 1879.



Attest:

Sam'l Knight.  
Geo. H. Knight!

*Inventor:*

Morrill, A. Shepard

# UNITED STATES PATENT OFFICE.

MORRILL A. SHEPARD, OF LEBANON, ILLINOIS.

## IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **211,866**, dated February 4, 1879; application filed April 19, 1878.

*To all whom it may concern:*

Be it known that I, MORRILL A. SHEPARD, of the city of Lebanon, in the county of St. Clair and State of Illinois, have invented a new and useful Spring Attachment, especially adapted to vehicles, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, forming a part of the same, in which—

Figure 1 is a plan view of my improvement, showing its connections with the springs, axles, and various parts. Fig. 2 is a side view with part broken away, showing more definitely its relation to the bed or body H.

The object of my invention is to transmit the power of a horizontal spring or springs to bell-crank levers, which are supported on suitable bearings at D; to the bars or couplings F F at I, secured to the body or seat H; and at J there is a connection with said bell-cranks, either movable or stationary, to the wrist-shaft D. To this shaft are attached the rods G G at one end, and secured at the other end to the clamp-bar C. The reverse rod G' is secured to the axle of the vehicle or a traverse-bar at one end, and at the other to the opposite clamp-bar C.

The springs may be multiplied to suit the position they may occupy, in order to afford all necessary strength and elasticity.

Two wrist-shafts, D, may be used instead of one, thereby dispensing with the connecting-rods E E, and substituting one central coupling-rod; or it may be secured to the front

bell-cranks and coupled to the rear bell-cranks by the rods E E; or the springs B B may be arranged on each side to connect direct with the rods E E.

The arrangement can be made to accommodate the style of the vehicle and suit the fancy of the manufacturer.

By virtue of this arrangement with movable connections at I and D, the springs B B will be compressed when a weight is placed on the body H, giving it a very easy and pleasant vibrating and vertical movement.

The parts necessary for my improvement are all simple, cheap, strong, and light.

The bell-crank levers may be made of malleable or wrought iron, and of such pattern as may be desired.

The size and strength of each part will be in proportion to the requirements of the vehicle.

I claim as my invention—

1. The combination of body H, bell-cranks A, side bars, F, wrist-shaft D, rods G and G', bars C and C', and springs B, substantially as and for the purpose set forth.

2. The combination of the body H, bell-cranks A, bearings I and D', side bars, F, connecting-rod E, wrist-shaft D, rods G and G', clamp-bars C and C', and springs B, all substantially as and for the purpose specified.

MORRILL A. SHEPARD.

Witnesses:

W. J. BODLEY,  
J. A. SHEPARD.