(No Model.)

S. E. O'DELL & C. VAN LIEW.

BUGGY SPRING GEARING.

No. 480,274. Patented Aug. 9, 1892.

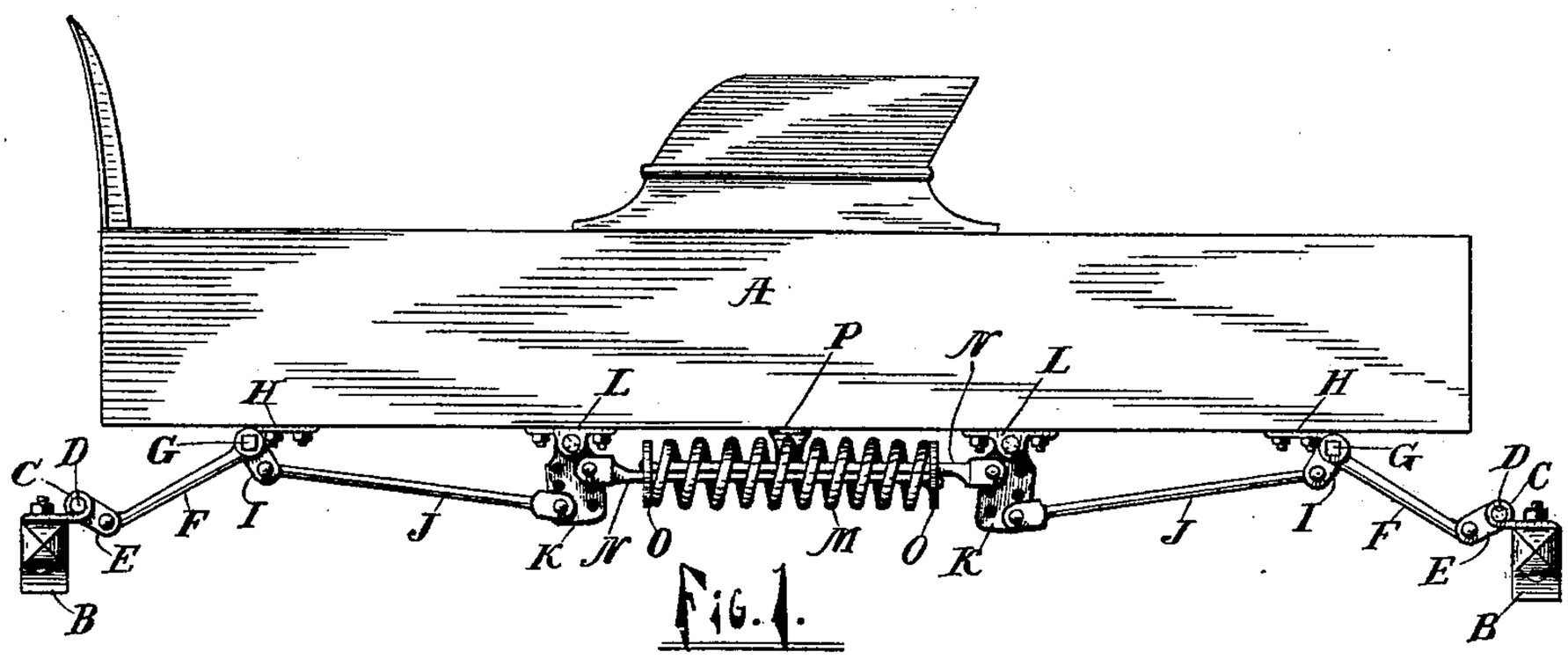

Fig. 1.

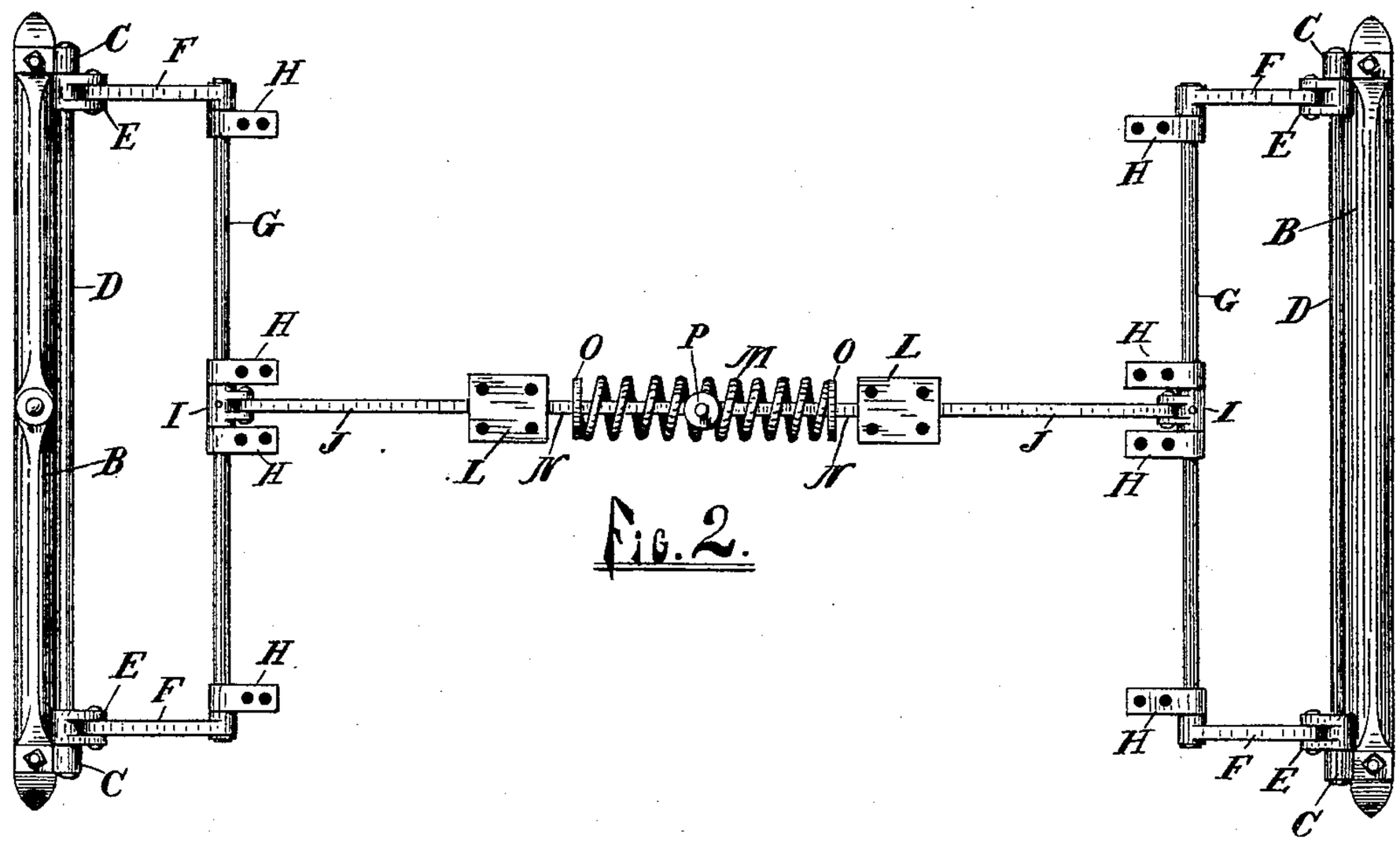

Fig. 2.

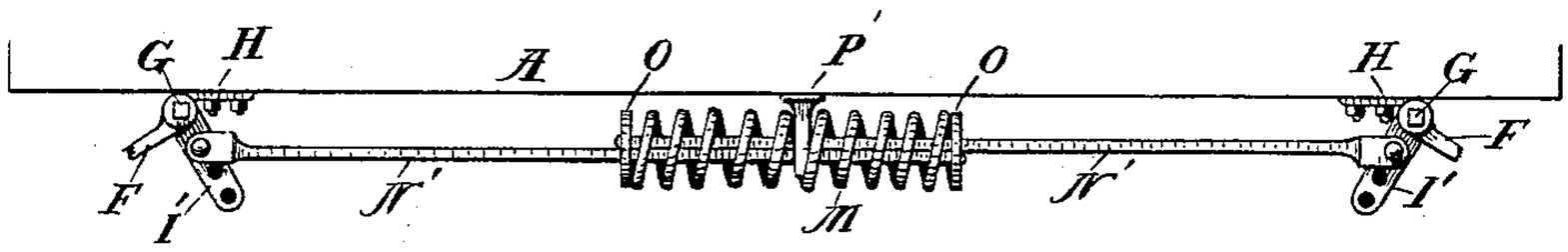

Fig. 3.

WITNESSES:

Lou Moulton.

Ada M. Harry

INVENTORS
Stephen E. O'Dell
Cornelius Van Liew
BY

Luther V. Moulton
ATTORNEY.

UNITED STATES PATENT OFFICE.

STEPHEN E. O'DELL AND CORNELIUS VAN LIEW, OF CEDAR SPRINGS, MICHIGAN.

BUGGY SPRING-GEARING.

SPECIFICATION forming part of Letters Patent No. 480,274, dated August 9, 1892.

Application filed April 23, 1892. Serial No. 430,313. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN E. O'DELL and CORNELIUS VAN LIEW, citizens of the United States, residing at Cedar Springs, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Buggy Spring-Gearing; 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 appertains to make and use the same.

Our invention relates to improvements in the gearing for attaching coiled springs to vehicles; and its object is to provide the same with certain new and useful features, hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying my invention; Fig. 2, a plan view of the same with the box or body removed; and Fig. 3, a modification of our device in side elevation, as in Fig. 1.

Like letters refer to like parts in all of the figures.

A is the box or body, and B B the bolsters, ef an ordinary buggy. C are eyes secured to the respective ends of said bolsters and overhanging the same at their adjacent sides.

D D are rods arranged parallel to each bolster, engaging the eyes C and supported thereby. Upon these rods are pivoted the shackles E, to the inner and movable ends of which shackles are pivoted the outer ends of the levers F, which levers extend diagonally inward and upward and are attached at their inner ends to the respective ends of the transverse rock-shafts G, which shafts are journaled in the bearings H, secured to the bottom of the box A.

To the middle of each shaft G is secured an arm I, arranged substantially at right angles to the levers F. To these arms I are pivoted the outer ends of the respective connecting-rods J, and the inner ends of said rods are adjustably pivoted to pendent rocker-arms K, which arms are journaled at their upper ends in bearings L, attached to the under side of the body A.

N N are two rods, which at their respective outer ends are adjustably pivoted to the rocker-arms K and extending parallel to and overlapping each other. Each rod has attached to its end a disk O, through which the other rod passes and slides freely. Said disks engage the respective ends of a coiled spring M, arranged longitudinally beneath the box A, which spring forces said disks O apart, and, pulling on the rods N, draws the rocker-arms toward each other, and through the rods J and arms I depresses the outer ends of the levers F, and thus supports the body A, the weight of which, together with its contents, tends to compress the spring M, which, yielding to such pressure, affords a spring-support to said body.

To prevent raising the opposite end of the box when the load is all in or near one end of the body, a stop P or P′ may be used to engage the middle of the spring M, which will prevent the pressure applied to one of the disks O from acting on the other. By this means the action of the spring is divided at the middle, the forward end supporting the rear end of the box only, and vice versa.

Each rocker-arm K is provided with a series of holes at each side, whereby the rods J and N may be attached to the same at various distances from the pivot L, thus changing the leverage brought to bear upon the spring M. By lowering the rods N the box is lowered and the leverage lengthened, whereby the spring will support a greater load and will not allow the box to move so far vertically. By moving the inner ends of the rods J upward the described result is further increased.

The device as shown is adjusted for the lightest possible load and the greatest possible vertical movement of the box. Each end can also be adjusted independently to any desired load. The rocker-arms and rods J may be dispensed with and the rods N extended and connected directly to the arms I, as shown at N′ and I′ in Fig. 3, in which case the arms I′ are made longer and provided with a series of holes for adjusting the pivots of the rods N′, but the range of adjustment is less than in the first-described construc-

tion. It will also be observed that any load applied to one side only depresses both sides alike by virtue of the fact that the rock shafts G cause the arms F, attached theret to move in unison about the axis of said shaft.

What we claim is—

1. In combination with the body and bolsters of a vehicle, rock-shafts journaled upon said body, levers rigidly attached to said shafts and shackled to said bolsters, arms also attached to said rock-shafts, rocker-arms pivoted to said body, connecting-rods pivoted to the arms on the rock-shaft and adjustably pivoted to said rocker-arms, a coiled spring between said rocker-arms, and rods pivoted to said rocker-arms at their outer ends and having their inner ends overlapping and connected to the opposite ends of said coiled spring, substantially as described.

2. In combination with the body and bolsters of a vehicle, eyes secured to said bolsters and overhanging the same at their adjacent sides, rods parallel to said bolsters and supported by said eyes, shackles pivoted to said rods, transverse rock-shafts journaled on the body, levers rigidly attached to said shafts and pivoted to said shackles, arms attached to said rock-shaft, a coiled spring arranged longitudinally between said arms, disks engaging the ends of said spring, and rods pivotally connected to said arms extending through said spring and attached to said disks, substantially as described.

3. In a spring-gearing for vehicles, in combination with rock-shafts having rigid levers shackled to the bolsters and arms substantially at right angles to said levers, and a coiled spring arranged longitudinally between said arms, rocker-arms near each end of said spring, rods pivoted to said arms on the rock-shafts at one end and adjustably pivoted to said rocker-arm at the other end, and rods also adjustably pivoted to said rocker-arm and passing through said spring and connected to its opposite ends, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

STEPHEN E. O'DELL.
CORNELIUS VAN LIEW.

Witnesses:
D. C. LYLE,
J. B. CALLAHAN.