(No Model.)

J. ENGLAND.

VEHICLE SPRING.

No. 378,244. Patented Feb. 21, 1888.

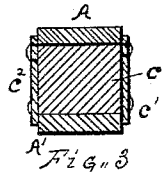

Fig. 3

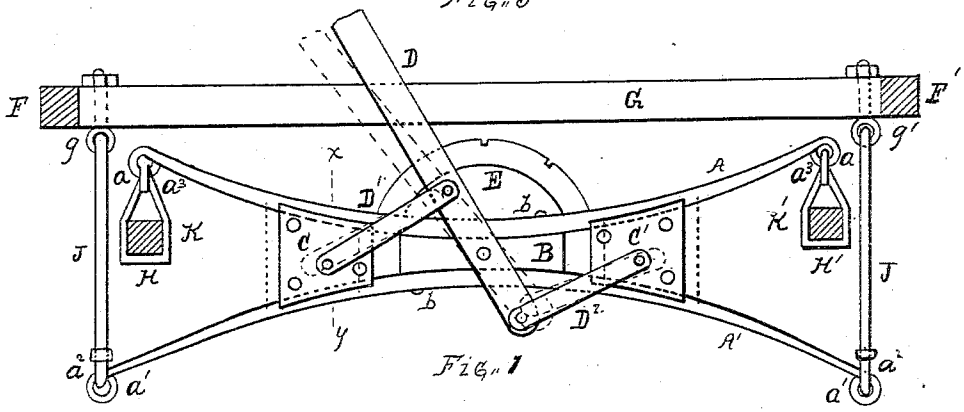

Fig. 1

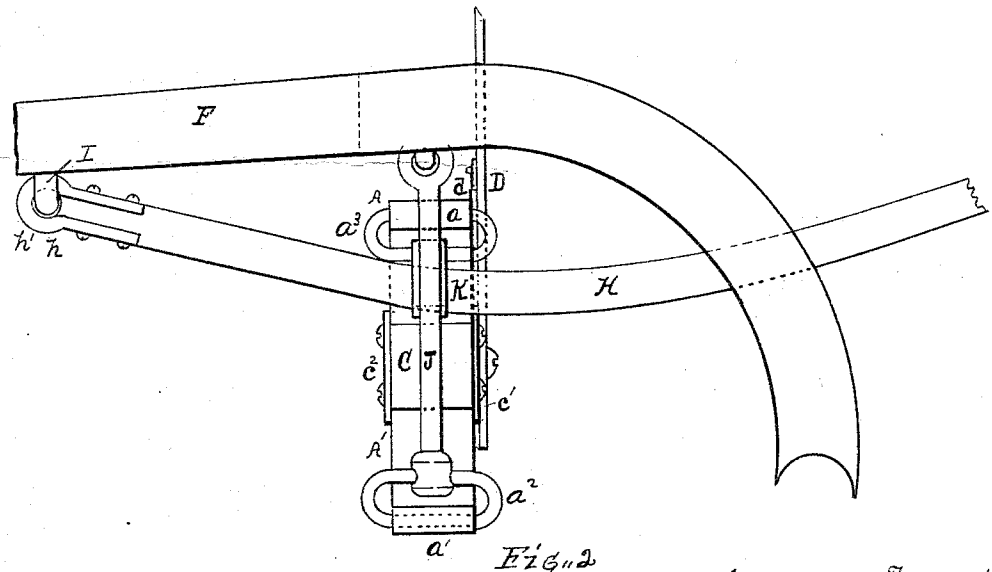

Fig. 2

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES ENGLAND, OF WHITE LAKE, MICHIGAN.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 378,244, dated February 21, 1888.

Application filed October 5, 1887. Serial No. 251,539. (No model.)

To all whom it may concern:

Be it known that I, JAMES ENGLAND, a citizen of the United States, residing at White Lake, county of Oakland, State of Michigan, have invented a certain new and useful Improvement in Vehicle-Springs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in springs for vehicles, and more particularly for use with two-wheeled vehicles.

My object is to provide a vehicle-spring which shall be readily adjustable for different weights, so as to give to the spring more or less flexibility, as occasion may require.

My invention consists, therefore, of the devices, appliances, and their combinations, as more fully hereinafter specified, and more particularly pointed out in the claims.

In the drawings which form a part of this application, Figure 1 is a vertical cross-section in the rear of the cross-bar, looking toward the front of the vehicle. Fig. 2 is a side view of features embodying my invention; and Fig. 3 is a cross-section along the line $x y$, Fig. 1.

I carry out my invention as follows:

A A′ represent springs of any suitable construction. They may be partially or semi elliptic in form, their convexed portions being located adjacent to each other. They may be made of any desired heft and provided with means of engagement at their extremities—as, for instance, with eyes at a a'.

B is a center block upon which the springs A A′ are engaged, as by means of bolts b.

C C′ represent movable supports located between the two springs at either end of the center block. These supports may be made of a wooden block, c, faced with side plates, c' and c^2, projecting above and below the upper and lower edges of the said block, so as to form projecting flanges or guides, which may embrace the edges of the springs when in juxtaposition with the center block and help to keep the supports in proper position, the springs flexing between the flanges, so as to rest in position upon the supports when weighted. To move the said supports, I provide a toggle-lever mechanism consisting of an operating-lever, D, pivotally engaged upon the center block, B, and connected by arms D′ and D^2 with the supports, respectively, so that as the operating-lever is thrown the said supports will be simultaneously moved to or from the center block, as the case may be. Thus, if it is desired to stiffen the springs or make them less flexible, so as to adapt them to sustain greater weight, the supports would be thrown toward the center block. On the other hand, if it is desired to make the springs more flexible, so that they shall be easier for lighter weight, the supports may be thrown toward the extremities of the springs, permitting them to flex more readily. Thus, if a single person were seated on the vehicle, the supports might be moved outward to make the springs easier for the rider; but should he take an additional party into the seat with him the supports might be thrown inward, so as to give less flexibility to the springs, as well as to overcome greater liability of breakage. This adjustment may be made without leaving the seat, as the operating-lever may be located within easy reach of the driver. So, also, this construction enables the operator to set the supports in any desired position between the limits of their adjustability; and to hold said supports in place, if it should be desired to do so, I provide a rack-bar, E, supported upon the upper spring, or in any other suitable manner, the operating-lever being provided with a spring-pawl, d, to engage said rack-bar. The rack-bar may or may not be employed, as may be preferred.

I support the springs in position in any proper manner—for instance, as follows: F F′ represent the shafts; G, a cross-bar connecting the shafts, while H H′ represent the seat-supporting arms. These arms may be engaged at their forward ends in any desired way. They may be provided with metallic straps h, turned at their extremities to form an eye, h', the same being engaged with an eyebolt, I, in the adjacent shaft. The spring A′ is supported at its extremities upon the cross-bar G in any way preferred. For instance, the cross-bar may be provided with eyebolts g g' and the spring with a "D" or clip, a^2, at each end, the same being united to its corresponding eyebolt in the cross-bar by a link, J. The spring A, however, is

connected at its extremities with the seat-supporting arms in any proper way—as, for instance, the said arms are provided with stirrups K K′, through which the said arms pass freely, the ends of the said spring being provided with a D or clip, a^3, connected with the corresponding stirrup.

It will readily be seen that a weight upon the seat-supporting arms will be communicated to the spring A, and thence directly to spring A′, supported upon the cross-bar.

What I claim as my invention is—

1. The combination, with vehicle-springs, of movable supports and means to adjust said supports, substantially as described.

2. The combination, with springs A and A′, united by an intermediate block, of movable supports located at the ends of said block and between the ends of said springs, substantially as described.

3. The combination, with springs A and A′, united intermediate of their ends, of movable supports located between the ends of said springs, and lever mechanism to operate said supports, substantially as described.

4. The combination, with a vehicle provided with seat-supporting arms, of springs A and A′, the one engaged upon the said arms and the other supported upon the vehicle, and movable supports located between said springs, substantially as described.

5. The combination, with springs A and A′, of movable supports located between said springs and a locking device to hold said supports in a given position, substantially as described.

6. The combination, with a vehicle provided with seat-supporting arms, of springs A A′, having their convexed portions engaged intermediate of their ends, one of said springs engaged at its extremities upon said arms and the other spring supported at its ends upon supports depending from the shafts, substantially as and in the manner described.

In testimony whereof I sign this specification in the presence of two witnesses.

JAMES ENGLAND.

Witnesses:

C. E. EVERTS,

J. W. STISON.