(No Model.)

D. NUNNELLEY.

SPRING SUPPORT.

No. 305,015. Patented Sept. 9, 1884.

Fig. 1.

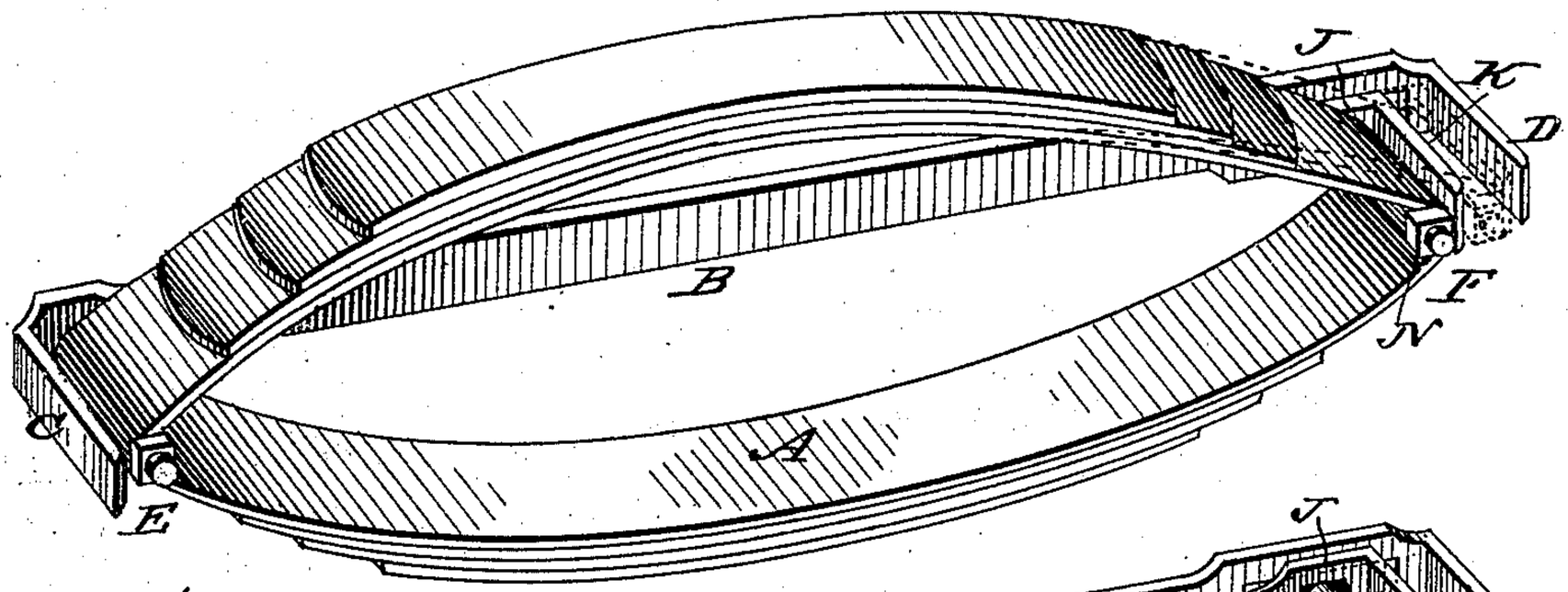

Fig. 2.

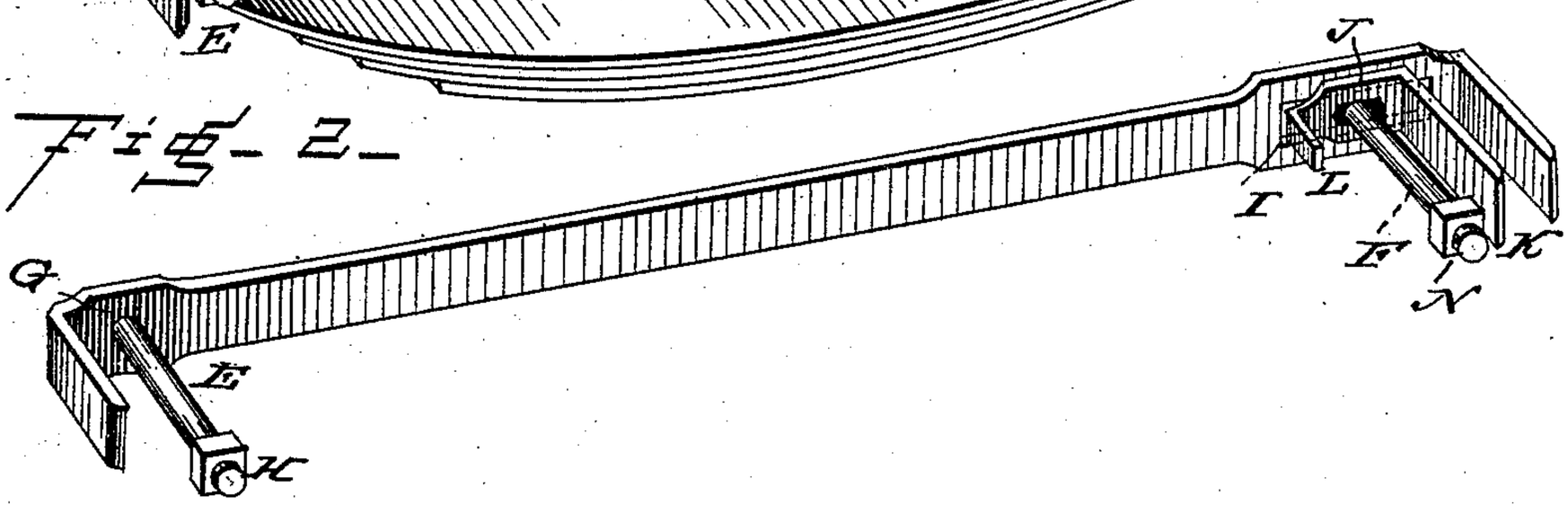

Fig. 4.

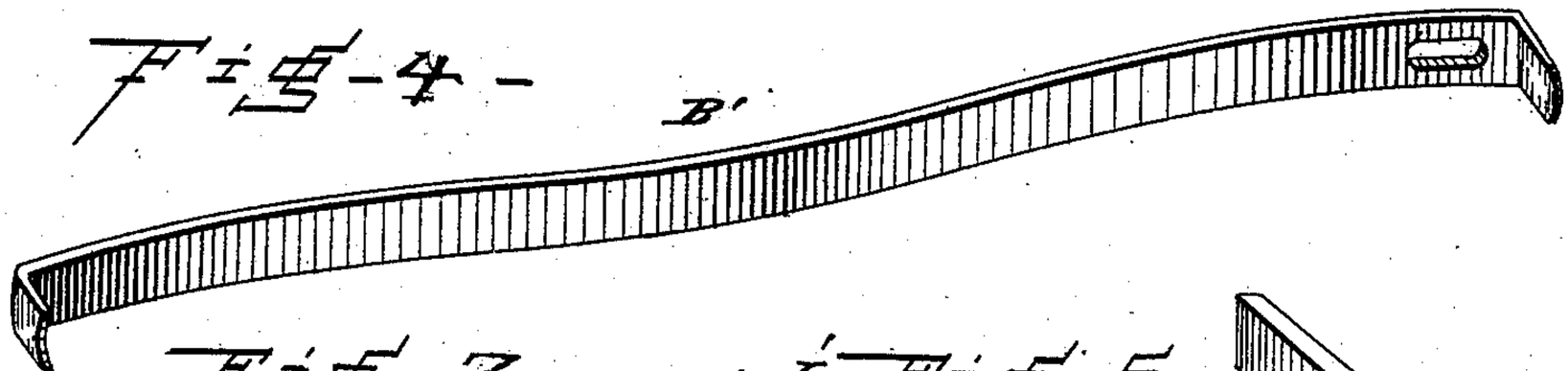

Fig. 3.

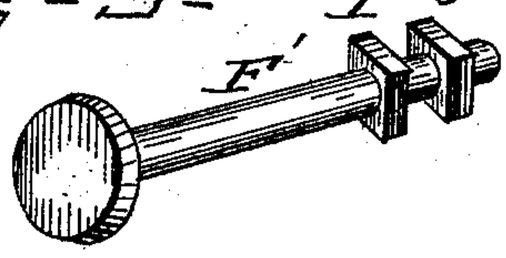

Fig. 5.

WITNESSES:

Fred. L. Dieterich.
C. F. Siggers.

INVENTOR.
D. Nunnelley
by C. A. Brown & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DUDLEY NUNNELLEY, OF KEENE, KENTUCKY.

SPRING-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 305,015, dated September 9, 1884.

Application filed May 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, DUDLEY NUNNELLEY, a citizen of the United States, residing at Keene, in the county of Jessamine and State of Kentucky, have invented a new and useful Spring-Support, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to devices for supporting vehicle-springs designed to prevent the lengthening of the spring after it has received the load it was made to bear, and to prevent the breaking of the spring on the rebound of the same when the vehicle is passing over ruts or gullies; and it consists in the construction and novel arrangements of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a view in perspective of a vehicle-spring with my improved support applied thereto. Fig. 2 is a view in perspective of the support removed. Fig. 3 is a view of the bolt and nuts for this modification, and Fig. 4 is a view of a modification of the support for a very light vehicle-spring. Fig. 5 is a detail view of the idler.

Referring by letter to the accompanying drawings, A designates a vehicle-spring to which the support B is secured. The support consists of a bar, of iron, steel, or other suitable metal, which is bent at right angles at its ends in the same direction to form short bearing-arms C and D, which are intended to take the strain off of the bolts E and F when the spring is pressed down by the load and lengthened, as seen in dotted lines in Fig. 1. This bar B is provided near one end with a bolt-hole, G, for the bolt E, which is passed through the eye of the spring A at that end, and secured in place by a nut, H. Near the other end of the bar B is provided an elongated slot, I, in which an idler, J, plays horizontally as the spring is actuated by the motion of the vehicle as it moves over the road. The idler J has a shoulder on its base which enters the slot I, and the base is provided at each end with a rectangular arm, the outer arm, K, being longer than the inner arm, L. The inner end of the base M of the idler is made tapering, and the arm L is made shorter and smaller than the arm K, in order that it may not interfere with the working of the spring. These arms K and L are designed to take the strain off of the bolt F, which is passed through the slot I, the shoulder and base of the idler J, and through the eye of the spring at this end, and is secured in place by a nut, N. When there is no load on the vehicle, the idler occupies about the middle of the slot I. When there is a load on the vehicle, the spring is pressed down and lengthens; but when the idler reaches the outer end of the slot I any further pressure above that which the spring is constructed to bear will come upon the support B, so that the spring will not be so apt to break with the support attached as it would be were the support left off, as the support gives the spring additional strength without interfering with its working up to a certain pressure—viz., that which the spring was originally designed to bear. The spring-support not only acts in the manner just described, but it also serves the purpose of preventing the shorter leaves of the spring from leaving the longer ones in the rebound of the spring when the vehicle passes over ruts, stones, gullies, and the like, by causing the spring to arch by stopping it at the ends at a certain point in the rebound.

With this spring-support bumpers are not needed, as the support itself serves as a bumper. It is more attractive in appearance than the rubber bumpers, is less expensive, and will last longer.

The springs when provided with the improved support may be made much lighter than when the support is omitted, and will possess the same strength as when made heavier. From the material left out of the spring two of the improved supports can be made, so that with the support, when properly constructed, the spring will be lighter and stronger than when made without the support. Furthermore, the support always holds the spring straight, whether the vehicle be loaded or not.

In cases where very light springs are required, I construct the support as seen in Fig. 5, where the body of the bar is made curved, in order to give it a slight spring, so that in case of a sudden shock caused by the movement of the springs together the bar will straighten out

and relieve the spring to the extent it straightens, which is, however, only slight.

The spring-support can be applied to springs now in use by taking out the bolts and applying the support, putting the bolts in place, turning the nut on the bolt that passes through the idler tight to hold it, and let the idler have the necessary play in the slot in the support. The nut draws the head of the bolt against the shoulder of the idler, but not against the face of the support, so that the bolts are both perfectly secure.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with an elliptic spring for vehicles, of a spring-support having angular end arms, a bolt-hole near one end and an elongated slot near the other end, the idler having a long arm at its outer end and a short arm at its inner tapering end, a shoulder on its base and a bolt-hole through its shoulder and base, and the bolts and nuts for connecting the support to the spring, substantially as specified.

2. The combination, with a vehicle-spring, of a spring-support connected at one end by a bolt and nut to one eye of the spring, and provided with a slot near the other end, and an idler connected to the other eye of the spring by a bolt and nut, the securing-bolt passing through the slot and the idler, substantially as specified.

3. A spring-support for vehicle-springs, having angle-arms at its ends, a bolt-hole near one end and an elongated slot near the other end, and curved slightly between its ends, in combination with an idler having a shoulder on its base, a long arm at one end and a short one at the other end of said base, a bolt-hole through said shoulder and base, and the bolts and nuts for securing the support to the eyes of the spring, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DUDLEY NUNNELLEY.

Witnesses:

DENT HOOVER,

N. R. DICKERSON.