M. H. NABER.

SHOCK ABSORBER.

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1,269,301.

Patented June 11, 1918.

Fig. 1

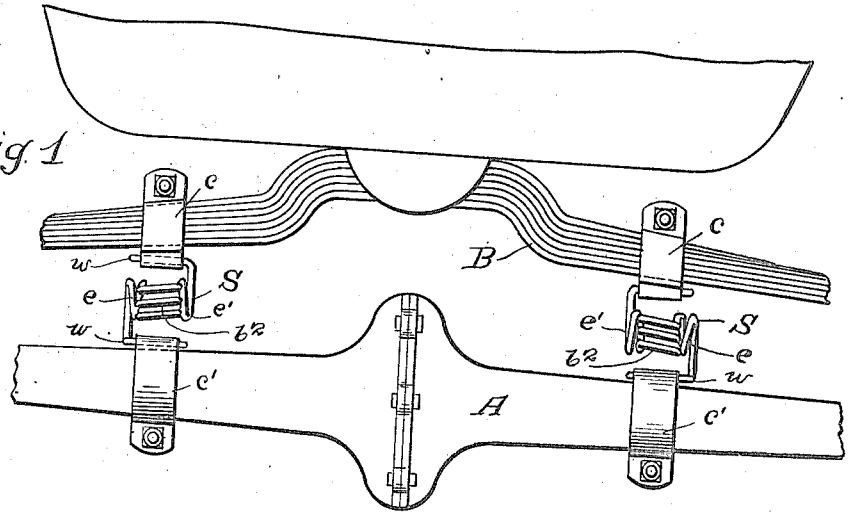


Fig. 2

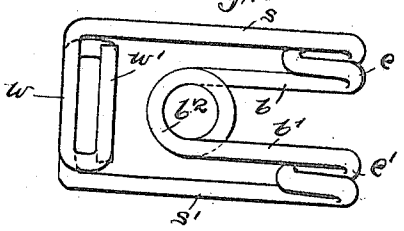


Fig. 3

Witness:
L. B. Graham

Inventor:
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UNITED STATES PATENT OFFICE.

MOSES H. NABER, OF CHICAGO, ILLINOIS.

SHOCK-ABSORBER.

1,269,301. Specification of Letters Patent. Patented June 11, 1918.

Application filed August 13, 1917. Serial No. 185,832.

To all whom it may concern:

Be it known that I, MOSES H. NABER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shock-Absorbers, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to shock-absorbers for automobiles, and its object is to provide a new and useful device, which will cushion both the drop and rebound of the auto body, and also prevent its side sway.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings—

Figure 1 is a view in elevation of a portion of an automobile equipped with my invention;

Fig. 2 is a top view of the absorber detached from the automobile; and

Fig. 3 is a side view taken from the outer side of the device, and with parts in section.

In the drawings in which like letters of reference indicate the same or similar parts in the several views, the letter A designates an axle of an automobile, and B designates one of the springs by which its body is supported and carried, the arrangement of axle and spring here shown for convenience of illustration being typical of several well-known types of car. The axle and spring of this typical form of car are equipped with a pair of my combined shock and rebound absorbers S, which are secured in place as indicated in Fig. 1.

Each of the combined shock and rebound absorbers is made of a single length of wire formed with an upper and lower wing by which it is respectively attached to the spring and axle of the machine, the wings being formed by bending the ends of the length of wire into loops each comprising a pair of parallel strands w, w'. Each wing is thus adapted to receive a pair of clips c, c', by which it is attached to the machine, it being understood that the clips of the bottom wings are secured to the axles and those of the top wings to the auto springs. The clips are metallic plates each having a loop c^2 at one end by which it is pivotally mounted on one of the strands of a wing; the strands are about an inch and a half in length thereby affording a wide bearing for the plates of the clips and making it possible to use clips of considerable width. The clips are of suitable size or dimensions so that each pair will encircle the associated axle or spring, and their opposite or meeting ends are secured together by suitable bolts and nuts as shown.

The wire forming each absorber extends from its wings in a pair of arms s, s', which project laterally from the outer ends of the wings in the same direction but in different vertical and horizontal planes and terminate in one or more vertical coils e and e', respectively, the coils being disposed upon the inner sides of the arms so as to face each other and being arranged in horizontal alinement. The wire then extends reversely from the coils toward or in the direction of the wings in substantially horizontal legs b and b', which are in different vertical planes from each other and also from the arms s and s', and which are united by the horizontally disposed coils b^2. The wings carrying the clips project in opposite directions inwardly into the longitudinal vertical plane of the coils b^2, so that the clips of each absorber stand in vertical alinement at approximately the central line of the absorber.

In positioning the absorber it is placed between the axle and spring with the horizontal coils b^2 under the machine and in such position that its clips will engage the axle and spring with the parts of the absorber in natural position so that it is neither compressed nor extended to any considerable extent. The bolts are then passed through the openings in the meeting ends of the clips and fastened by suitable nuts. The absorbers are thus arranged according to the relation of the springs and axles or other base part of the machine; in the arrangement shown in the drawing as a typical example the axle and spring are parallel and so a pair of the absorbers are connected to them as shown. The absorbers prevent any excessive drop downward of the body carried on the springs and so cushion the drop, and they prevent any excessive rebound of the body upward and so cushion the upward throw, and as by their arrangement and construction they accumulate strength gradually but rapidly in either direction from their neutral point they restrain or modify the action of the auto springs gently and effectively to eliminate sudden jars or jolts resulting from the blows of high speeds or

rough roads. The upper arm with its vertical coil in effect forms a spring resistance to all downward thrusts of the auto body, while the lower arm with its vertical coil in effect forms a spring resistance to all upward thrusts of the axle, and as these two spring elements are united by the horizontal intermediate coils which are on the inside of the upper and lower arms their movements are inwardly in opposition to each other so that any tendency of the body toward side-swaying or lurching is taken up and neutralized. The same arrangement also prevents the absorber from moving bodily sidewise or along the length of the associated axle and auto spring, and so the clips by which they are attached to the latter may be loosely connected thereto so that they will not bind the leaves of the auto spring or affect its normal action.

The absorber may be attached at any suitable point or location; I have shown it attached between the auto spring and axle, but it may be otherwise located, as for example between the auto body and running gear or between the upper and lower portions of the auto spring.

I claim:—

1. A shock-absorber for automobiles comprising a spring composed of a length of wire having an attaching wing at each end formed of parallel strands, arms extending in the same direction from the outer ends of the wings in different vertical and horizontal planes, vertical coils at the ends of the arms in the same horizontal plane, and an integral pair of legs projecting reversely from the adjacent portions of the coils and united in a horizontally disposed bend, and a pair of clips pivotally mounted on the strands of each wing.

2. A shock-absorber for automobiles comprising a spring composed of a length of wire having a wing at each end formed of parallel strands, arms extending from the outer ends of each wing in the same direction but in different vertical and horizontal planes, coils at the ends of the arms in the same horizontal plane, legs projecting from the coils in opposite direction to the arms and terminating in an intermediate set of horizontal coils, and a pair of clips pivoted on the strands of each wing.

In testimony whereof I affix my signature in presence of two witnesses.

MOSES H. NABER.

Witnesses:
EDITH H. WILCOX,
J. MCROBERTS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."