E. J. BREWSTER.

VEHICLE SPRING.

APPLICATION FILED SEPT. 9, 1918.

1,298,168.

Patented Mar. 25, 1919.

Fig. 1

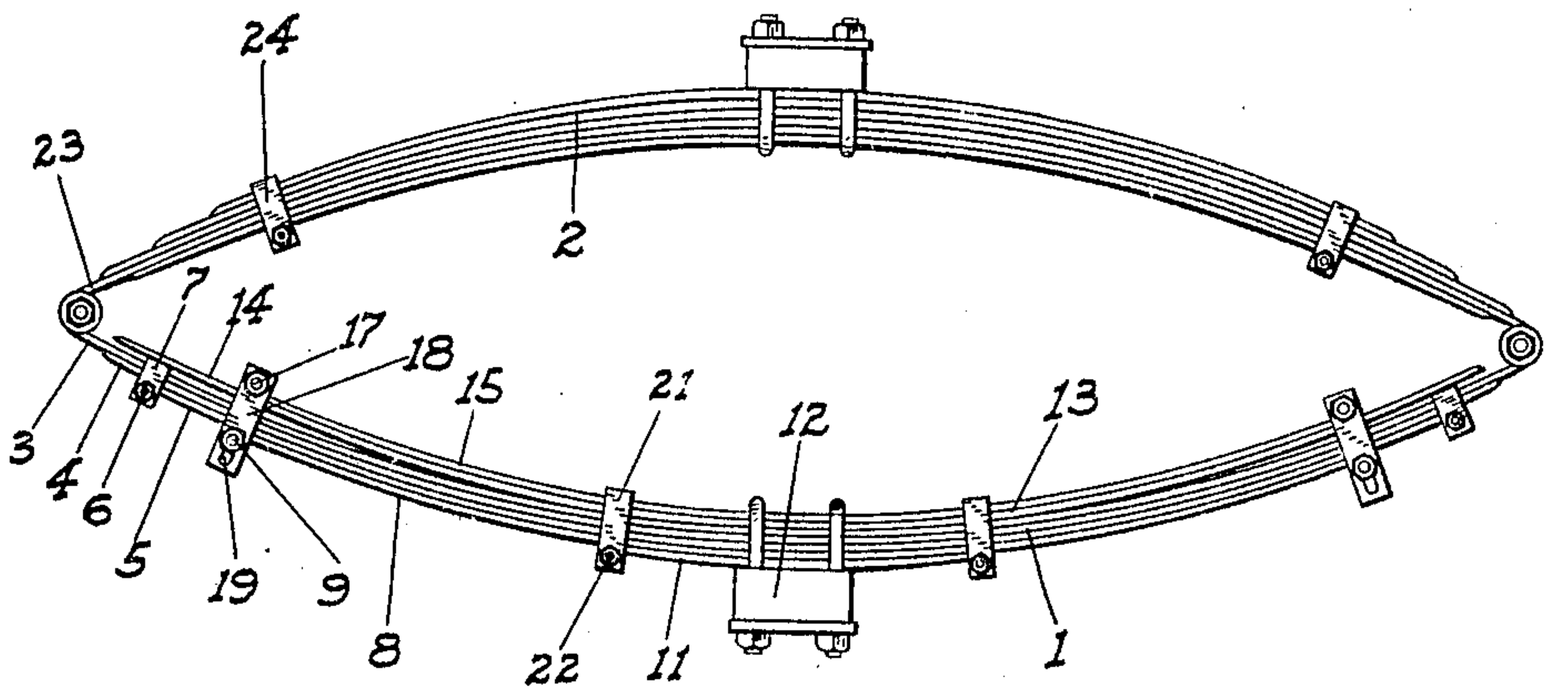
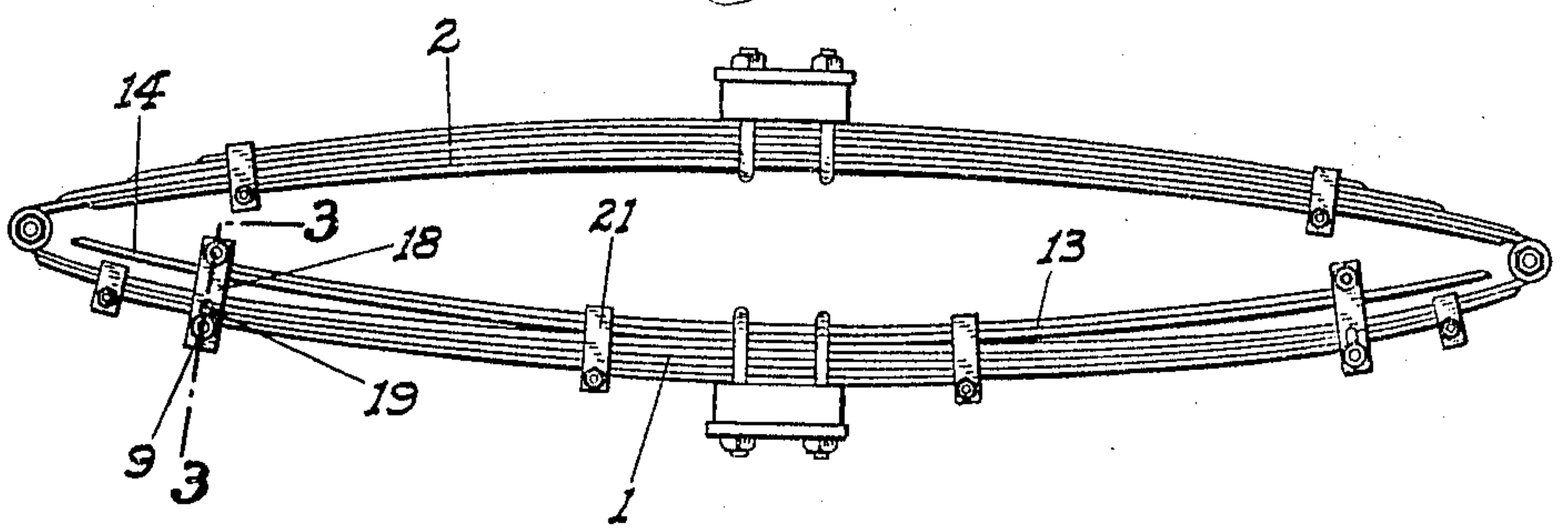


Fig. 2



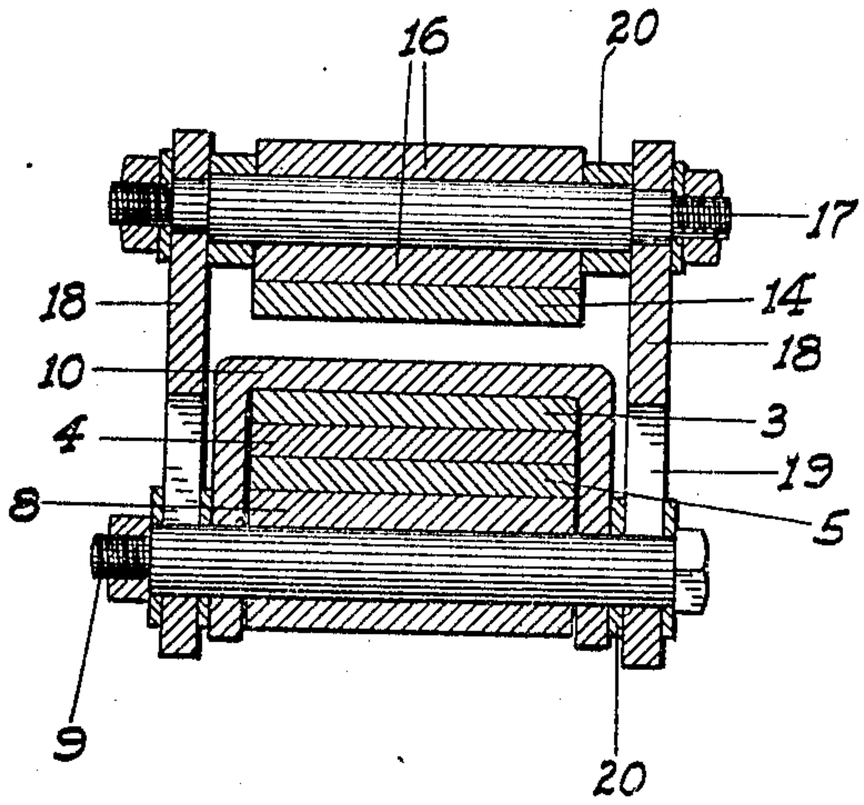


Fig. 3

INVENTOR.

Ethelbert J. Brewster

BY

Berry S. Webster

ATTORNEY.

UNITED STATES PATENT OFFICE.

ETHELBERT J. BREWSTER, OF FRESNO, CALIFORNIA.

VEHICLE-SPRING.

1,298,168. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed September 9, 1918. Serial No. 253,298.

To all whom it may concern:

Be it known that I, ETHELBERT J. BREWSTER, a citizen of the United States of America, residing at Fresno, in the county of Fresno, State of California, have invented certain new and useful Improvements in Vehicle-Springs; and I do declare the following to be a clear, full, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in vehicle springs and particularly to that type known as semi-elliptic or full-elliptic used on motor vehicles.

The principal object of the invention is to provide such main spring with a supplemental spring which will only be brought into play when the vehicle is carrying a heavy load or when subjected to a sudden shock or bump which tends to flatten out the main spring momentarily. In this latter case, the secondary or supplemental spring acts as a shock absorber.

A further object of the invention is to build up the main spring in such a manner as to enable it to better withstand sudden shocks or jolts than one built in the usual manner.

A still further object of the device is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claim.

On the drawings, similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of my improved spring showing the same in normal position, *i. e.*, with the vehicle on which it is mounted empty.

Fig. 2 is a side elevation of the same showing the spring when flattened under the influence of a great weight or heavy shock.

Fig. 3 is a cross section taken on a line 3—3 of Fig. 3.

Referring now more particularly to the figures of reference on the drawings, the numeral 1 designates the lower main spring and 2 the upper spring of the ellipse. The lower main spring 1 consists of a top leaf 3 whose ends terminate in loops or eyes to form the hinging or connecting means with the upper spring 2, a second leaf 4 slightly shorter than the leaf 3, a third leaf 5 slightly shorter than the leaf 4, and whose ends terminate in loops or eyes to receive a bolt 6 therethrough. An inverted U-clamp 7 straddles the three leaves at this point, and is held in position by the bolt 6 which passes through the sides thereof.

A fourth leaf 8, somewhat shorter than the leaf 5, is provided with looped ends and has a bolt 9 and clamp 10 similar to the clamp 7. The bolt 9 is longer than is necessary to merely pass through the sides of the clamp for the purpose as will appear. A fifth leaf 11 extends a short distance on either side of the central vehicle clamp 12.

The supplemental spring 13 mounted to the main spring 1 above the same is constructed and connected as follows:

A leaf 14 of a length about that of the leaf 4 is positioned adjacent the leaf 3, resting thereupon near the center and also upon the clamp 7 when the spring 13 is at rest. A second leaf 15 is superimposed on the leaf 14, but is shorter than the same, and has its ends terminating in eyes or loops 16 through each of which passes a bolt 17 having straps 18 depending therefrom, which straps straddle the clamp 10. These straps are provided with elongated orifices or slots 19 adapted to slidably receive the bolt 9 therethrough, the normal position of the bolt being at the upper end of the slot. Suitable washers 20 maintain the spaced relation of the clamps, straps and spring leaves.

Inverted U-clamps 21 hold the leaves of the supplemental spring in position on the main spring 1 and are connected thereto by means of the bolts 22 passing through the terminating eyes of the leaf 11 of the main spring.

The upper main spring has its longest leaf 23 suitably hinged in connection with the leaf 3 of the lower spring as hereinbefore stated, some of the remaining leaves being placed above such leaf in the usual manner and some below the same, the shortest of such latter leaves having looped ends and clamps 24 connected therewith to hold all the leaves in fixed relation to each other.

With this construction, I do not increase the weight or number of leaves of the spring, which will have the same carrying capacity as springs constructed in the ordinary manner, but I do increase its ability to with-

stand and resist any reaction caused by a sudden shock or jolt over such ordinary type of spring.

In the operation of the supplemental spring, when the load on the main spring is light, the lower leaf 14 of the supplemental spring will rest on the main spring and the slots 19 in the straps 18 will be in their downmost position. When an excessive load or shock is thrown on the main spring, such spring is thereby caused to assume a flattened position, as shown in Fig. 2. This causes the bolts 9 to move downward in the slots 19 till such bolts bear against the bottom of the slots. Should the flattening of the main spring still continue, the bolts 9 then pull down on the straps and tension is thrown on the leaves of the supplemental spring, thus bringing into play such spring and causing the same to assume and absorb some of the load. Should the flattening of the spring be caused by a sudden shock or jolt, the sudden bringing into play of the supplemental spring will cause the same to act as a shock absorber.

Thus, from the foregoing description it will readily be seen that I have produced such a device as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice, such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:—

A vehicle spring comprising a main spring, a supplemental spring adjacent to and above the same, clamps near the center thereof connecting the main and supplemental springs, transverse bolts on the main spring in alinement with the ends of the supplemental spring, and straps pivotally mounted to such ends, such straps being provided with vertical slots for the passage of the bolts therethrough, and normally extending below the same whereby the main spring may be flattened the length of the slots before the supplemental spring is brought into play.

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

ETHELBERT J. BREWSTER.

Witnesses:
BERNARD PRIVAT,
FRANK H. CARTER.