

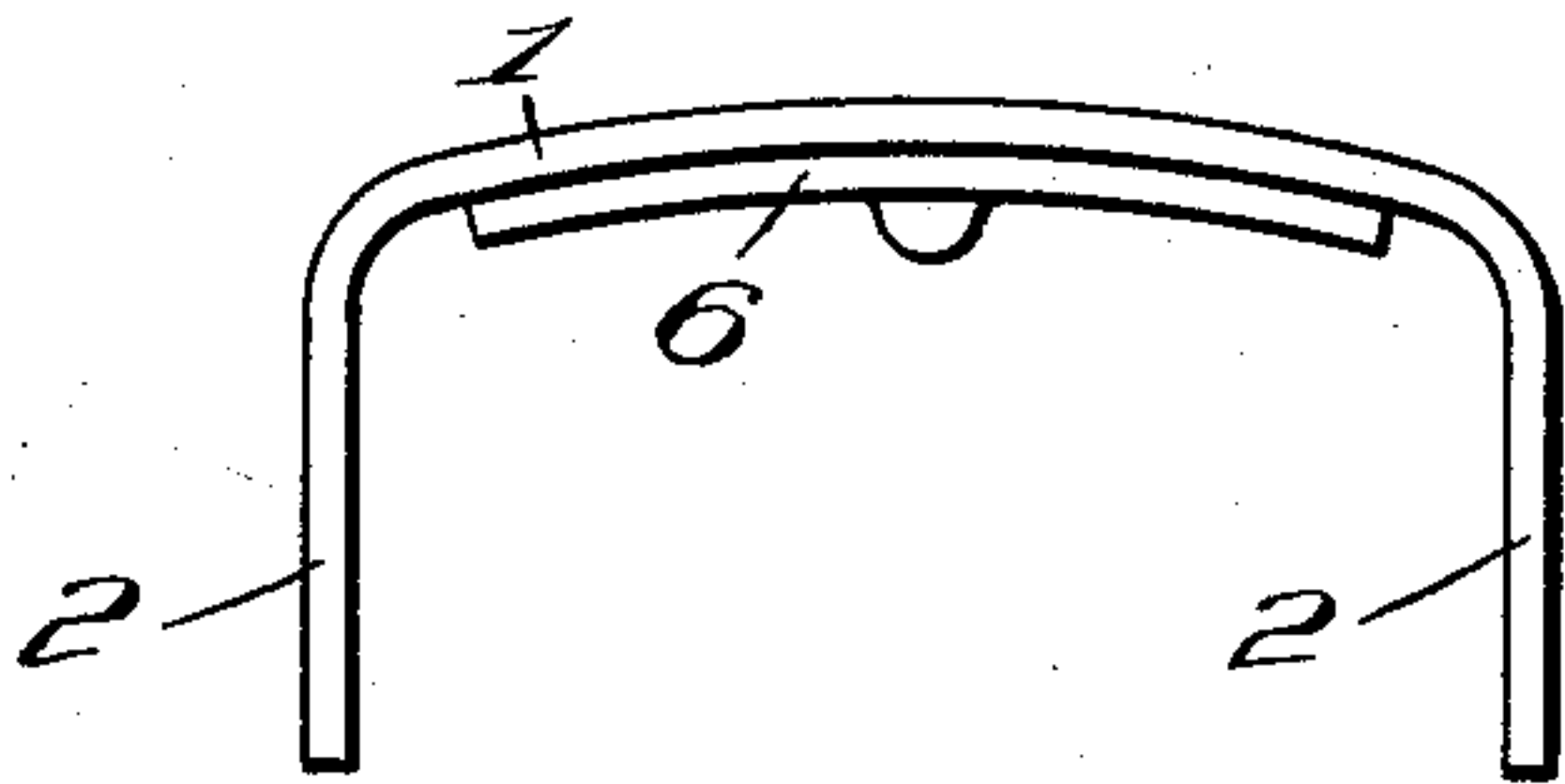
No. 891,381.

PATENTED JUNE 23, 1908.

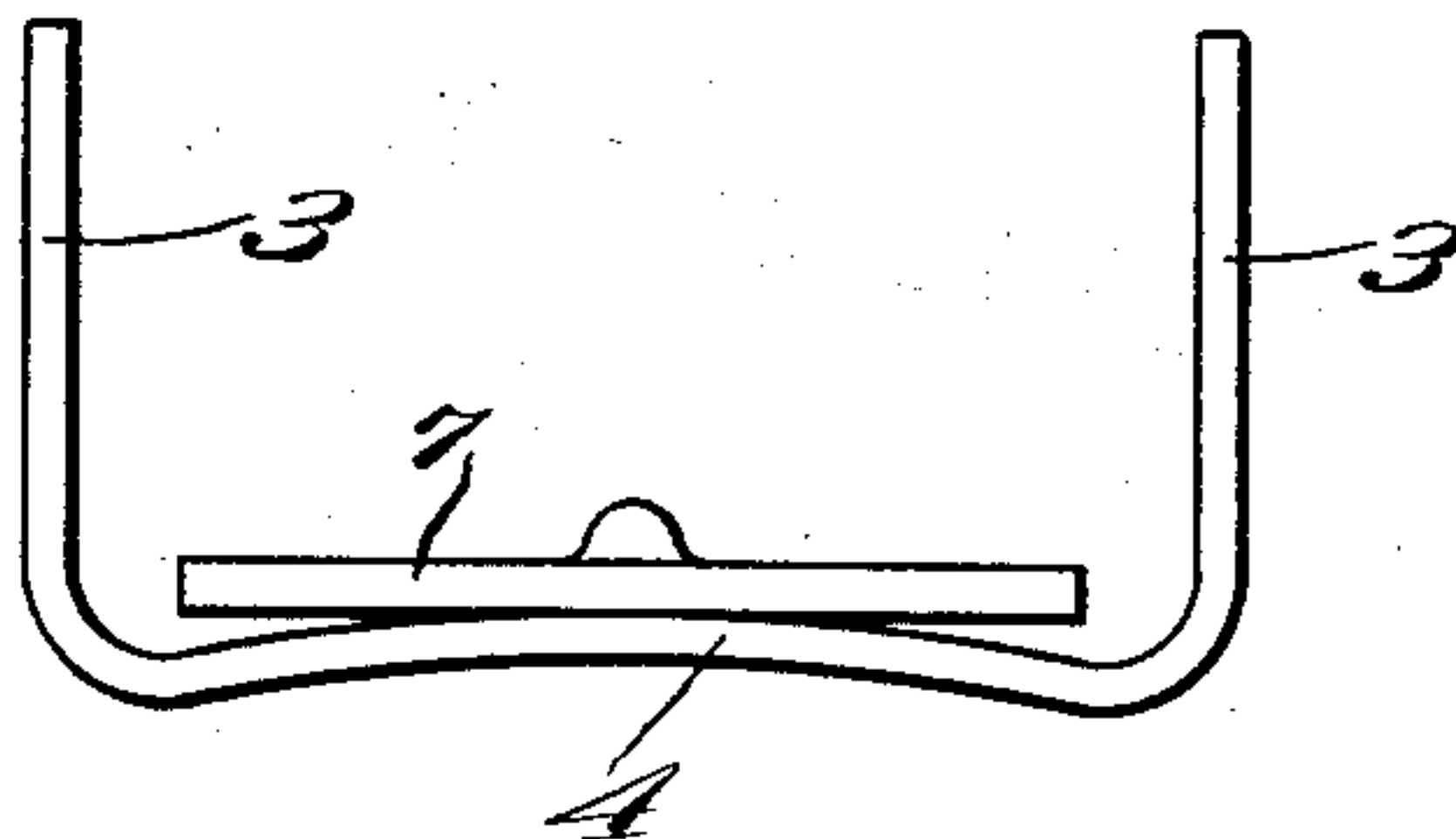
T. A. SHEA.  
CAR SPRING.

APPLICATION FILED JAN. 7, 1907.

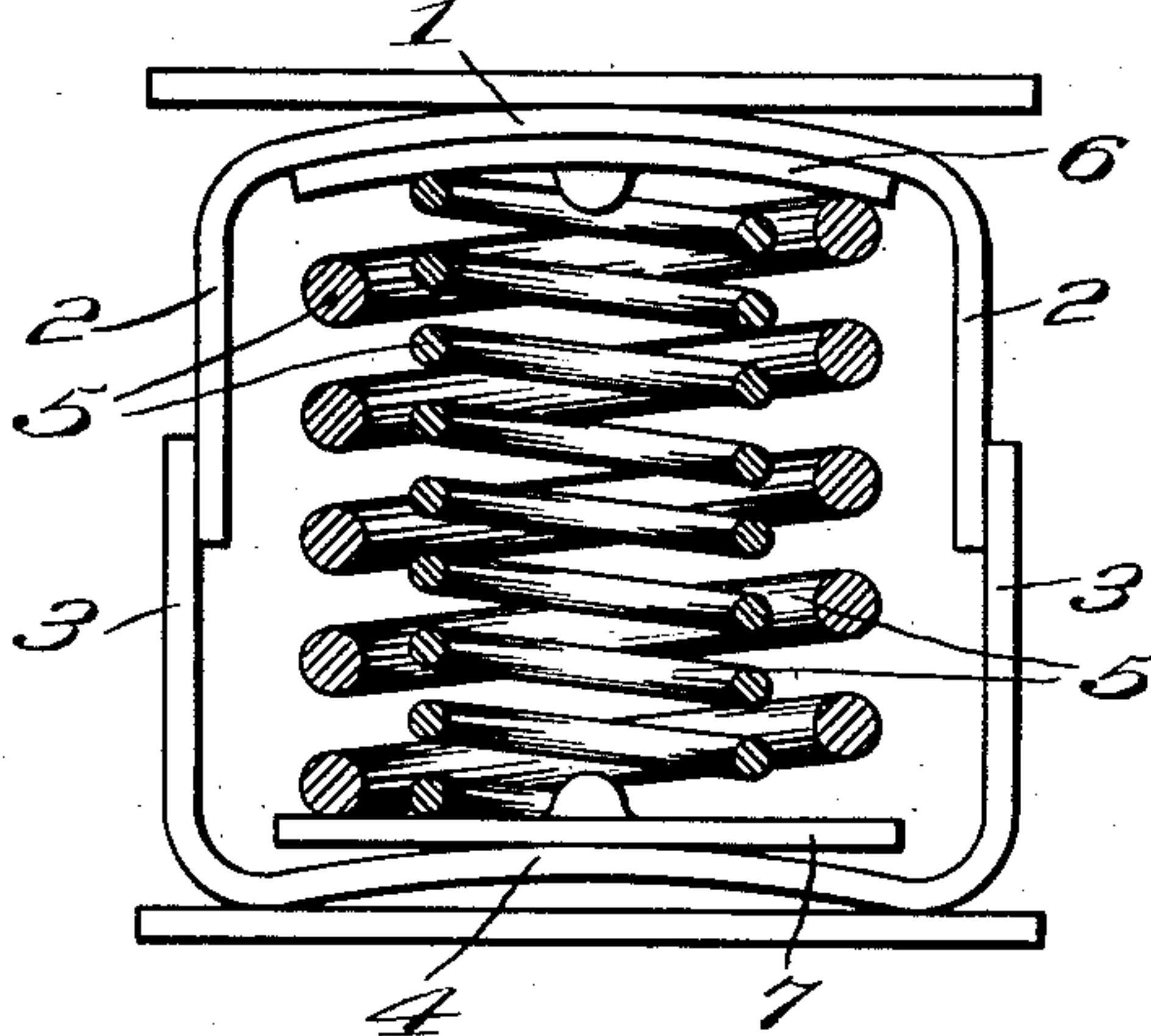
*Fig. 2.*



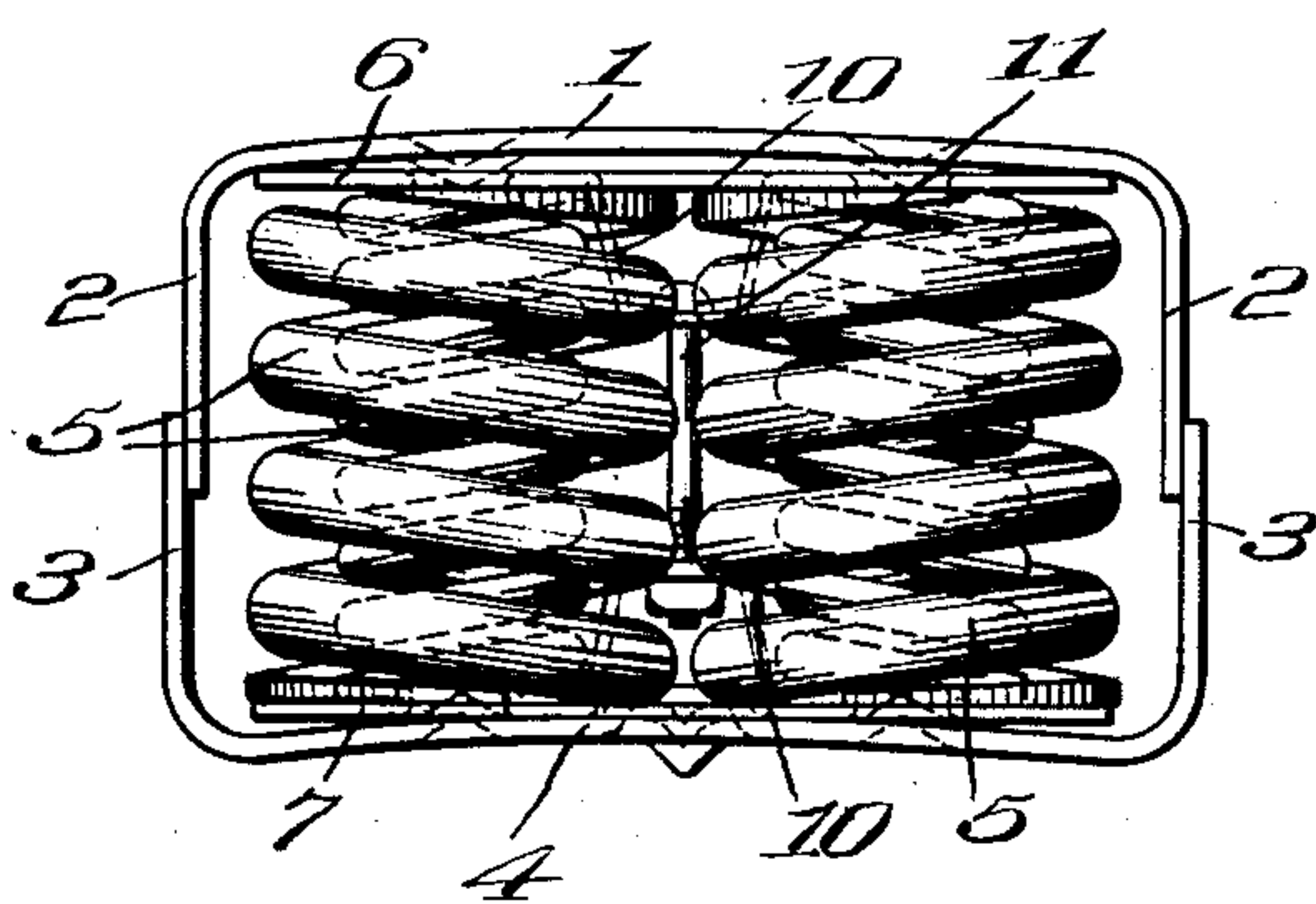
*Fig. 3.*



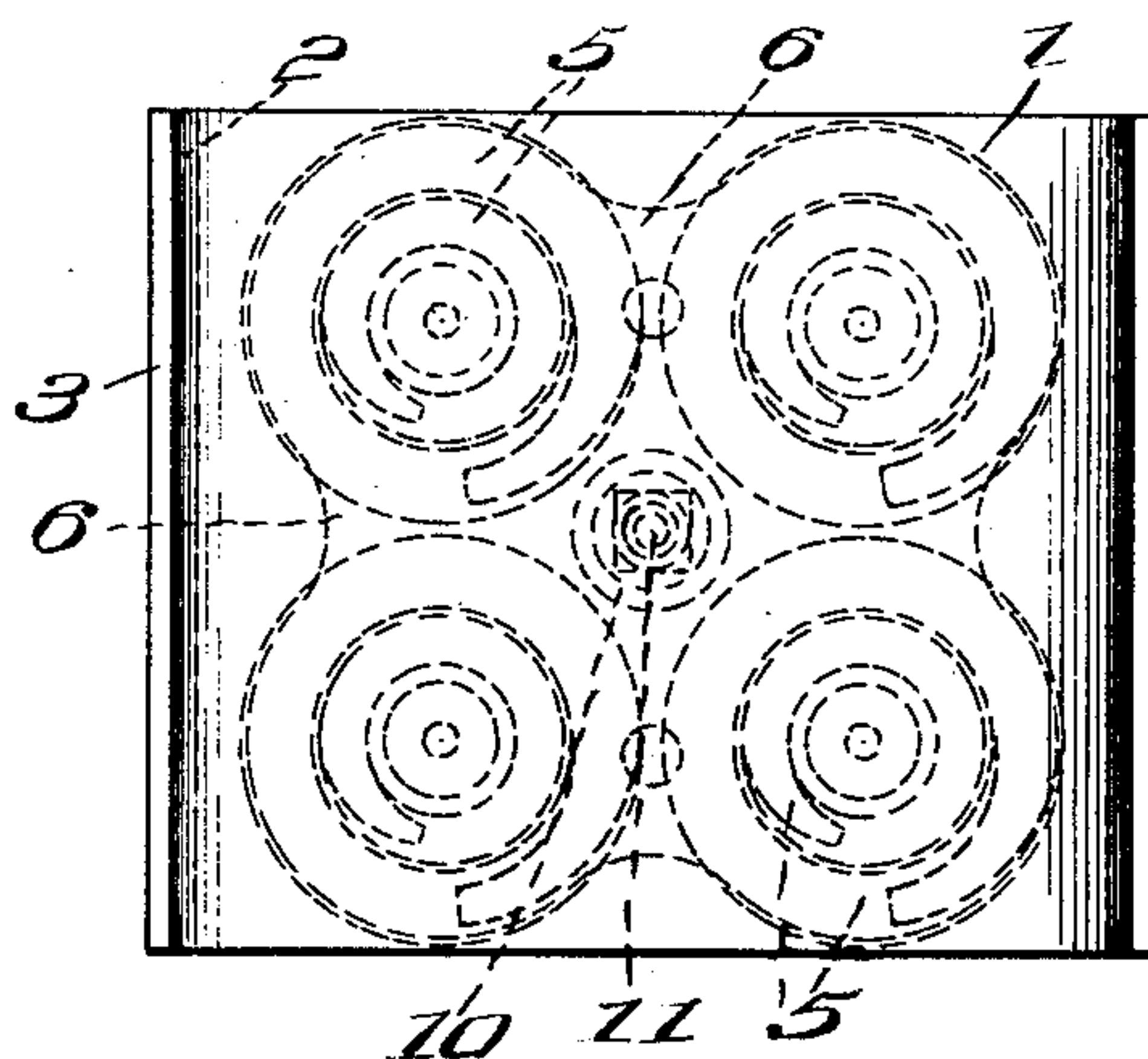
*Fig. 1.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

THOMAS A. SHEA, OF HAMMOND, INDIANA.

## CAR-SPRING.

No. 891,381.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed January 7, 1907. Serial No. 351,233.

*To all whom it may concern:*

Be it known that I, THOMAS A. SHEA, a citizen of the United States, residing at Hammond, in the county of Lake and State of Indiana, have invented new and useful Improvements in Car-Springs, of which the following is a specification.

My invention relates to devices for controlling the recoil of coil springs and consists in improvements on certain devices heretofore patented by me. These devices consist broadly in cap-plates inclosing the coil or coils and having side flanges in contact. The bases of the cap-plates are curved, one concave and one convex, so that the flanges of one are sprung in and, the flanges of the other, sprung out, into frictional engagement, whereby the vibrations are controlled or retarded—the greater the load, the greater the friction and therefore the more retarding effect.

My present invention consists in arranging within the cap-plates, supplementary bearing plates, directly in contact and engagement with the coils, whereby the pressure of the coil springs on the cap-plates is equalized, and the latter relieved from strain and unequal wear. These bearing plates may be of any suitable material; such as steel or malleable iron; while the cap-plates must be of tempered spring steel. This invention is particularly applicable to springs carrying heavier loads.

My invention is shown in the drawing herewith, in which the reference numerals of the description indicate the corresponding parts in all the figures.

Figure 1 shows, in side elevation, my invention applied to a single coil, or nest of coils. Figs. 2 and 3 are elevations of the cap-plates and bearing plates detached. Figs. 4 and 5 show in, side elevation and in plan, my invention applied to a cluster.

In the figures 1 indicates the upper cap-plate, having a convex base and side flanges 2 arranged within the flanges 3 of the lower cap-plate 4 having the concave base.

5 is the coil, or coils, 6 and 7 are respectively the upper and lower bearing plates, which engage directly with the coils. These bearing plates may be flat as 7 and as in Fig. 4, and resilient to conform under load to the cap-plate bases, or curved to fit the cap-

plate bases, but it is not necessary to make them resilient, and I prefer them flat and untempered.

As shown in Figs. 4 and 5, these bearing plates may be formed with sockets 10 for the bolt 11 to retain the coils in position.

I have found that in certain cases, and where the load was heavy as in tenders, locomotives and heavy cars, the cap-plates sometimes broke. This seemed to be caused by the direct contact and wear of the springs, which crystallized, or unequally wore, or strained the metal of the cap-plates, so that occasionally under sudden shock or strain they snapped. This difficulty and danger of accident has been entirely overcome by my present invention. This difficulty could not be overcome by making the cap-plate thicker to resist the wear, because such thickening reduced the elasticity, and reducing the elasticity increases the danger of breakage.

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

1. In a controlling device for coil springs, the combination with the coil, of two cap-plates inclosing the coil and having side flanges, the flanges of one cap-plate being arranged within the flanges of the other, and a flat integral bearing plate arranged between the coil at each end and the cap-plate.

2. A controlling device for coil springs, having in combination a coil spring, two tempered spring steel cap-plates inclosing the coil and having side flanges, one cap-plate having a concavely curved base and the other a convexly curved base, the cap-plate with the convex base having its flanges arranged within the flanges of the cap-plate with the concave base, and flat, integral, non-resilient bearing plates of untempered steel arranged between the coil at each end and the cap-plate, said bearing plates engaging directly with the coil and protecting the cap-plates from wear and strain.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS A. SHEA.

Witnesses:

K. S. GRIFFIN,  
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