

(No Model.)

N. H. DAVIS.

CAR SPRING.

No. 287,639.

Patented Oct. 30, 1883.

Fig. 1.

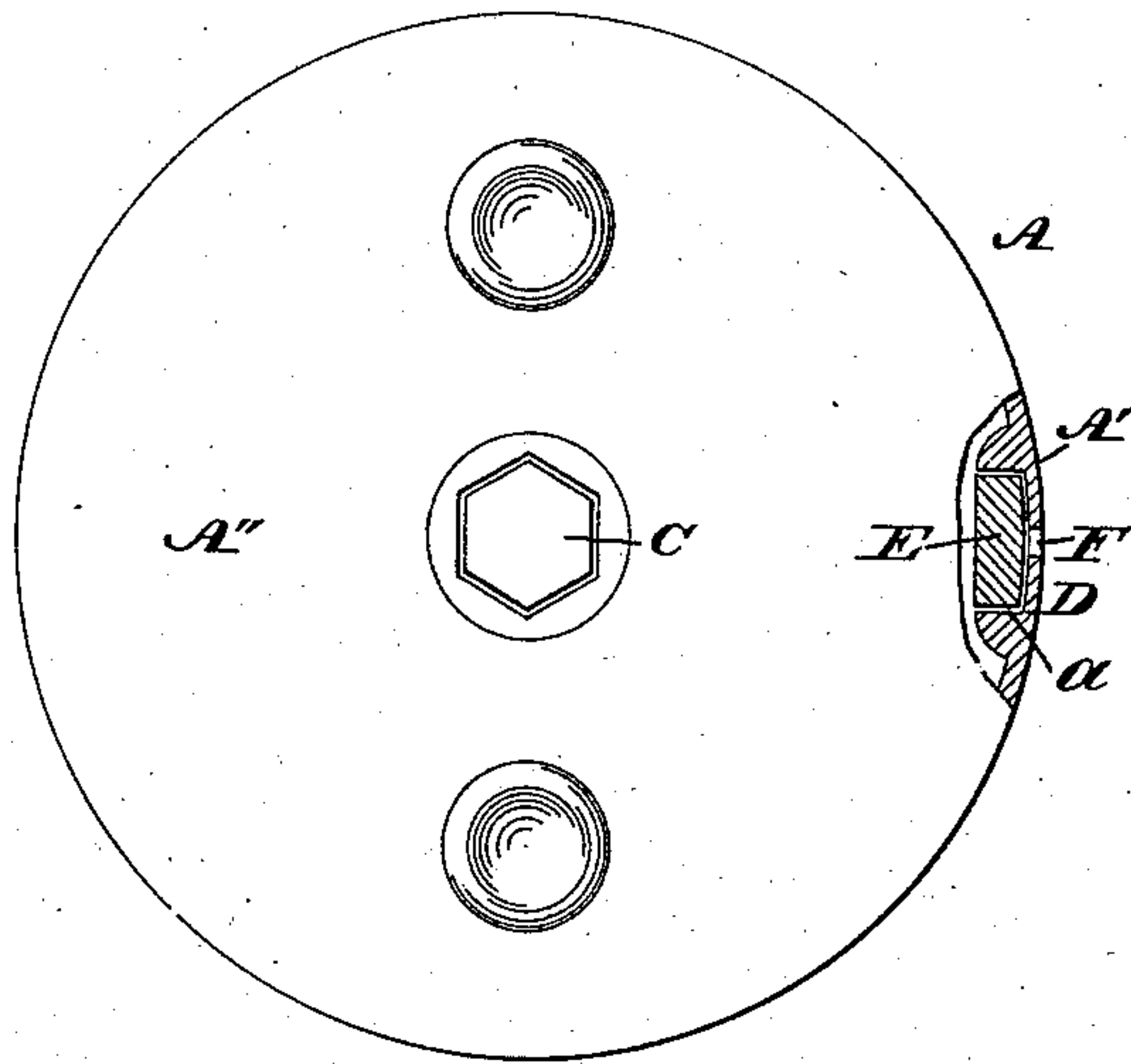


Fig. 2.

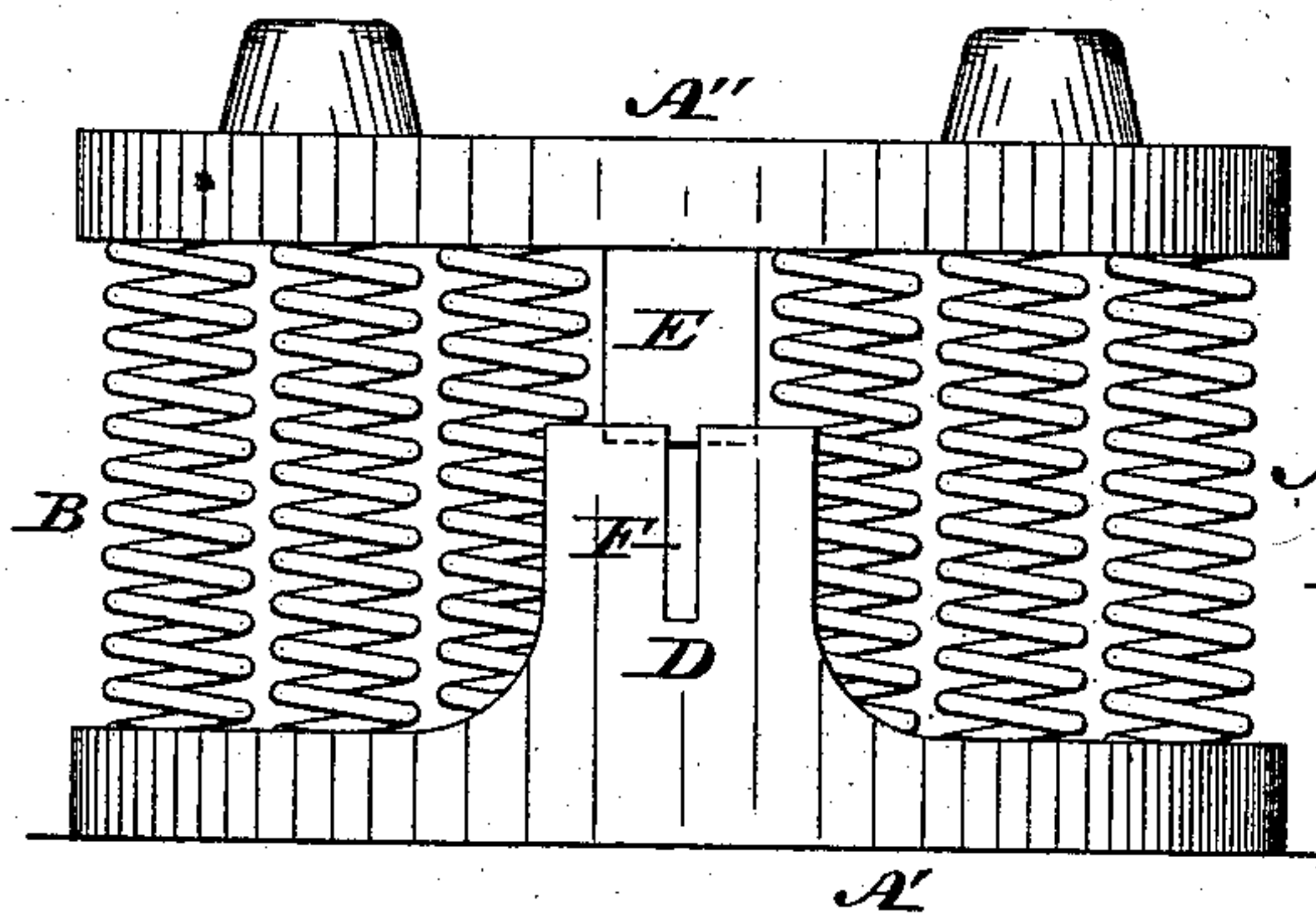
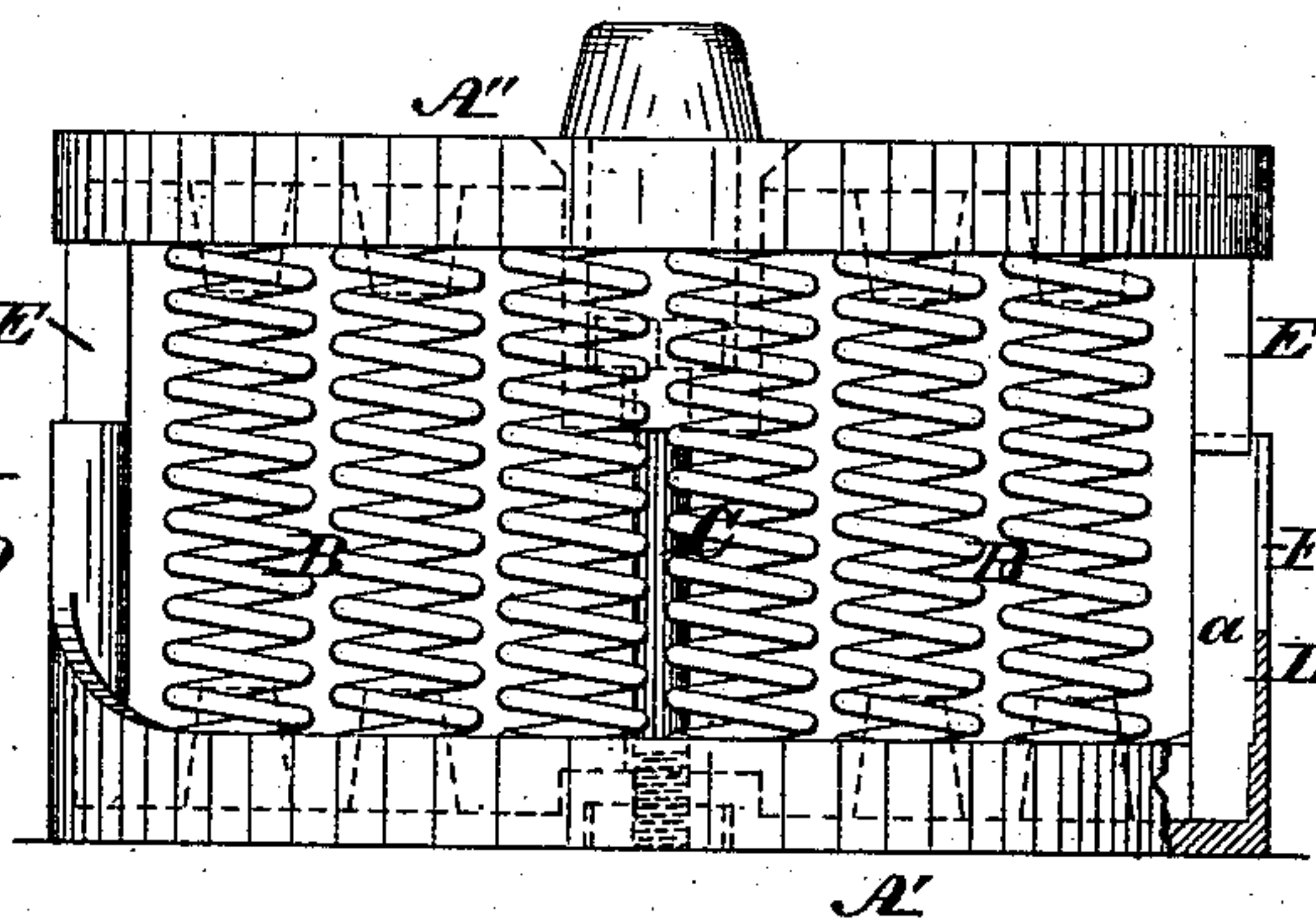


Fig. 3.



WITNESSES:

R. P. Grant,  
H. F. Kirchen

INVENTOR:

Nathan H. Davis.  
BY Joan Adersheim ATTORNEY.



# UNITED STATES PATENT OFFICE.

NATHAN H. DAVIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO LEWIS C. GRATZ, OF SAME PLACE.

## CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 287,639, dated October 30, 1883.

Application filed June 20, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN H. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Car-Springs, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view, partly broken away, of a car-spring embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is another side elevation thereof, a portion being in vertical section.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a car-spring box of skeleton form, the same being provided with a connecting-bolt, tongues and grooves, and other features possessing advantages, as will be hereinafter fully set forth.

Referring to the drawings, A represents the box of a car-spring, the same consisting of a base, A', and top or follower A'', between which the coiled springs B are located, said base and follower being connected by a bolt, C, at the center thereof, and, if desired, a number of bolts may be employed for said purpose.

Rising from the periphery of the base A' are posts D, the faces whereof are grooved, as at *a*, and depending from the periphery of the follower A'' are tongues E, which are so disposed as to enter the grooves of the posts D, it being evident that the posts D may be formed with the follower and the tongues E with the base.

It will be seen that when the spring is in use the follower A'' receives motions incident to car-springs, and as the tongues E play in the grooves *a* of the posts the follower is guided, and lateral displacement and rotation of the same are prevented. Furthermore, as the strain on the box is on the base and follower, these parts are adapted to receive such strain, and the skeleton form of the box adapts the same to be made light and inexpensive. The grooved posts D, preventing the rotation of the follower or base, permit the follower and base to become connected centrally by a sin-

gle bolt, C, the angular head whereof rests in an angular opening of a cup, which is inserted in an opening in the follower, and the nut whereof rests in an angular recess in the base, as shown by the dotted lines, Fig. 3; or the same may be in the follower, in which case the head of the bolt is fitted loosely in the base, or a socket therein. By this provision the bolt is held unrotatingly in position, and so prevented from being lost and disconnecting the parts.

In the posts D are vertical slots F, which expose parts of the tongues E, especially the lower ends thereof, so that the position of said ends may always be seen. By this provision, owing to the relation of the ends of the tongues to the base of the slots F, the effect of the load on the springs or the resiliency of the latter may always be indicated, the same being availed of to determine the strength of the springs that may be required, or adjustment of the same to the load to which they are subjected, or ability to endure the load, the bottom edge of the rim of the follower and top edge of the posts also acting as indicators for the purpose stated.

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

1. A spring in combination with a box of skeleton form, having a base with posts grooved and vertically slotted, a follower with depending tongues, and a bolt connecting the base and follower, the end of the tongue being exposed in the vertical slot of the post, substantially as and for the purpose set forth.

2. A spring in combination with a box of skeleton form, having a base with grooved and slotted posts, a follower with depending tongues, an angular recess in the base, a cup in the follower, a bolt, and nut, the ends of the tongues being exposed in the slotted posts, all substantially as and for the purpose set forth.

N. H. DAVIS.

Witnesses:

JOHN A. WIEDERSHEIM,  
W. F. KIRCHER.