

(No Model.)

A. B. DAVIS.  
Car Spring.

No. 231,018.

Patented Aug. 10, 1880.

Fig. 1.

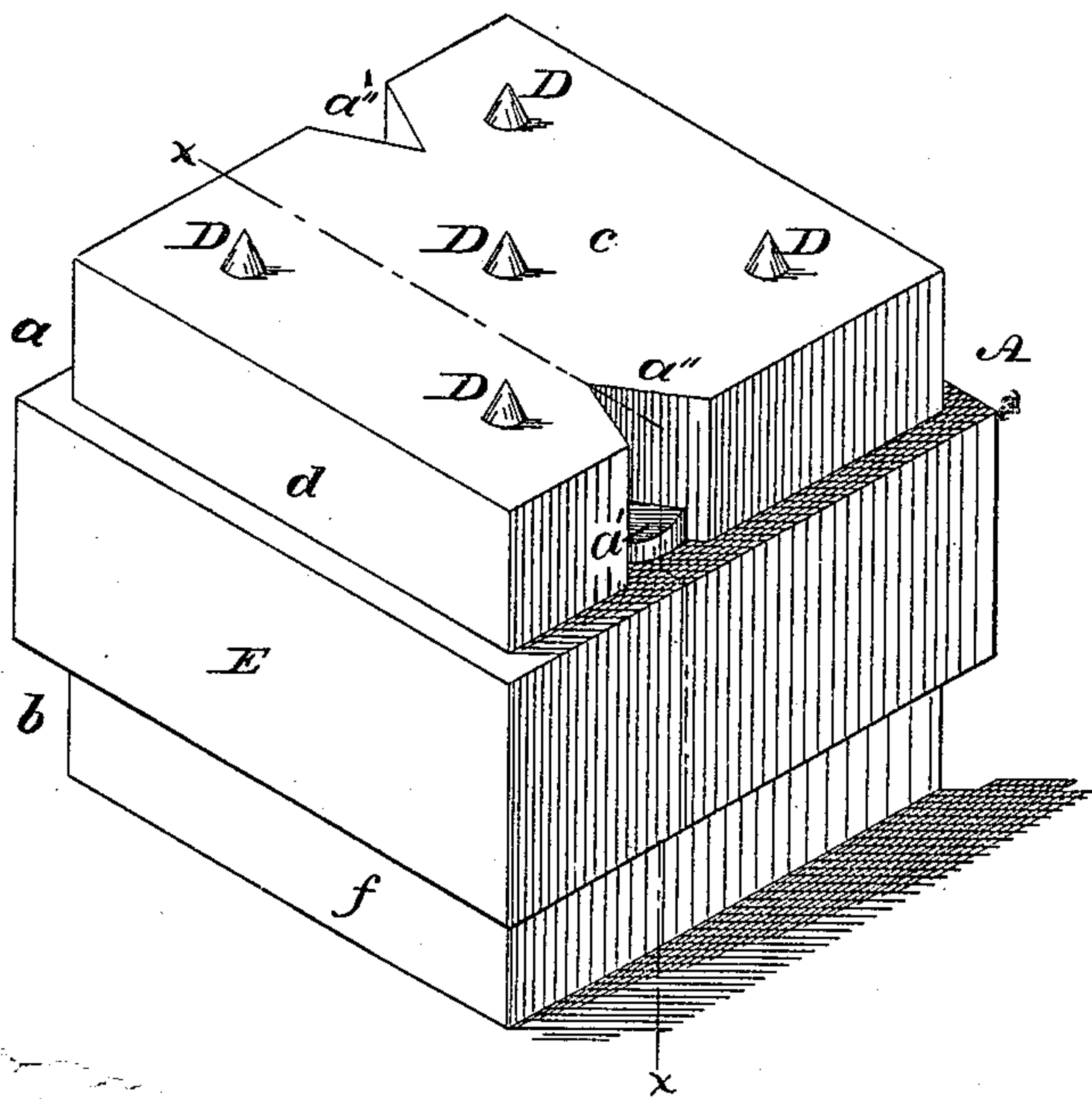
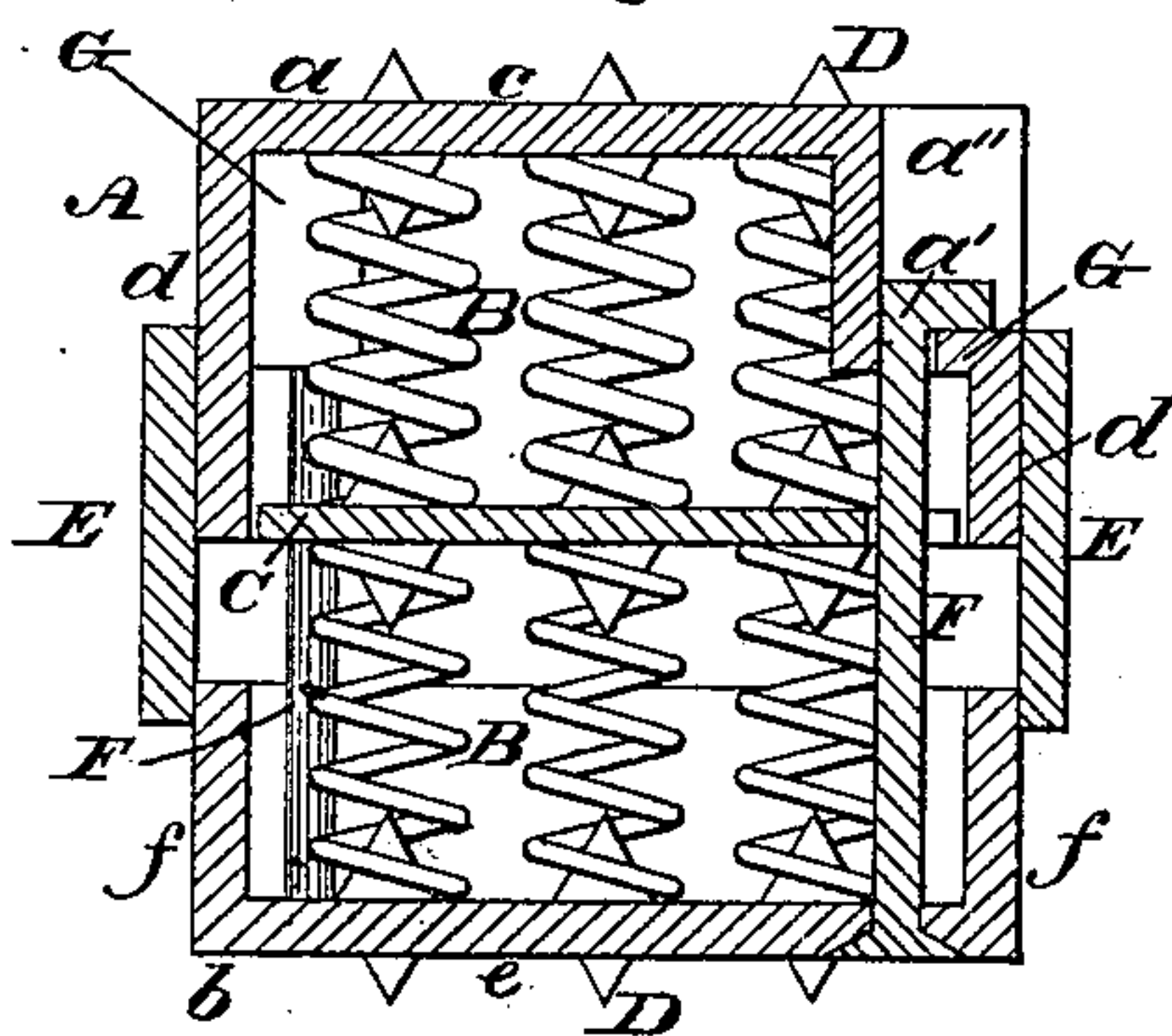


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

AUGUSTUS B. DAVIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
NINE-TWENTIETHS OF HIS RIGHT TO JOHN K. BOYER, OF SAME PLACE.

## CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 231,018, dated August 10, 1880.

Application filed May 18, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS B. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Springs for Cars, &c., (Case A,) which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the spring embodying my invention. Fig. 2 is a vertical section thereof in line *xx*, Fig. 1.

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

This invention relates to car-springs which are provided with sliding heads and an intermediate diaphragm, a series of helical springs being interposed between said diaphragm and each head.

The nature of said invention consists in certain improvements in the above-mentioned class of car-springs, which will be hereinafter more particularly set forth and claimed.

Referring to the drawings, A represents the box or case, and B the springs, which are in two series, separated by the diaphragm C. The case A is formed of two heads, *a b*, the head *a* consisting of the face-plate *e* and the sides *d*, and the part *b* of the face-plate *e* and the sides *f*.

Projecting outwardly from the plates *e e* are spurs D, cast therewith, which may be conical, pyramidal, or other suitable shape, their object being to penetrate the wood or enter the material with which the box or case A is in contact when located in operative position, thus preventing shifting of said box or case.

Secured to or cast with the sides *d* of the part *a* of the box or case A is a band or offset, E, which in a measure forms continuations of said sides *d* and overlaps the sides *f* of the part *b* of the box or case, as more clearly shown in Fig. 2, it being noticed that the ends of the sides *d f*, or properly of the heads, are opposed and adapted to move to and from each other.

F represents bolts which are passed through the two heads of the box or case for connecting them. The heads of the bolts rest against the plate *e* of the head *b*, and their ends are passed freely through lugs G, projecting inwardly from the sides *d* of the head *a*. Said ends of the bolts then appear on the outside of said sides *d*, where (as at *a'*) they are headed or threaded to receive nuts, grooves *a''* being

formed exteriorly on the sides *d* for the passage of the heads or nuts of the ends of the bolts as the heads of the box or case A approach or recede from each other.

When the spring is in service the load, if ordinary, is carried by the lower set of springs, B, as they are in the present case of less power than the upper set, and as the load increases the upper set of springs is brought into play. By this gradation of resiliency the car rides with ease under light and heavy loads, and as the heads *a b* move toward and from each other the band or offset E acts as a guide, thus keeping said heads true and causing uniform motions thereof, this being assisted by the bolts F, which, connecting the two heads, also serve as guides, it being noticed that the length of the bolts is less than the actual height of the spring box or case.

Should the springs be loaded in excess of their resiliency or resistance, the heads abut against each other and thus receive the thrust or load as stops, and prevent injury to the springs. It will also be seen that there is no loss of room within the box or case A.

The heads are of the same width, and virtually flat and flush on their outer faces, the only parts interposed between the ends of the springs and contiguous portion of the car-truck, &c., being the thickness of the outer faces or face-plates *e e*. The springs B may thus be made short, while the range thereof is large.

When the band E is a separate piece from the follower or head *a* it is preferably shrunk thereon in order to be securely held in position.

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

1. The spring-containing box or case A, formed of two heads or followers, *a b*, provided with inwardly-projecting lugs G and the bolts F, substantially as and for the purpose set forth.

2. The box or case A, consisting of two followers or heads, *a b*, of uniform width, having the circumferential band E and inclosing the bolts F and springs B, substantially as and for the purpose set forth.

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Witnesses:

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