

G. FRANKLIN.
Car Springs.

3 Sheets--Sheet 1.

FIG. 1

No. 135,792.

Patented Feb. 11, 1873.

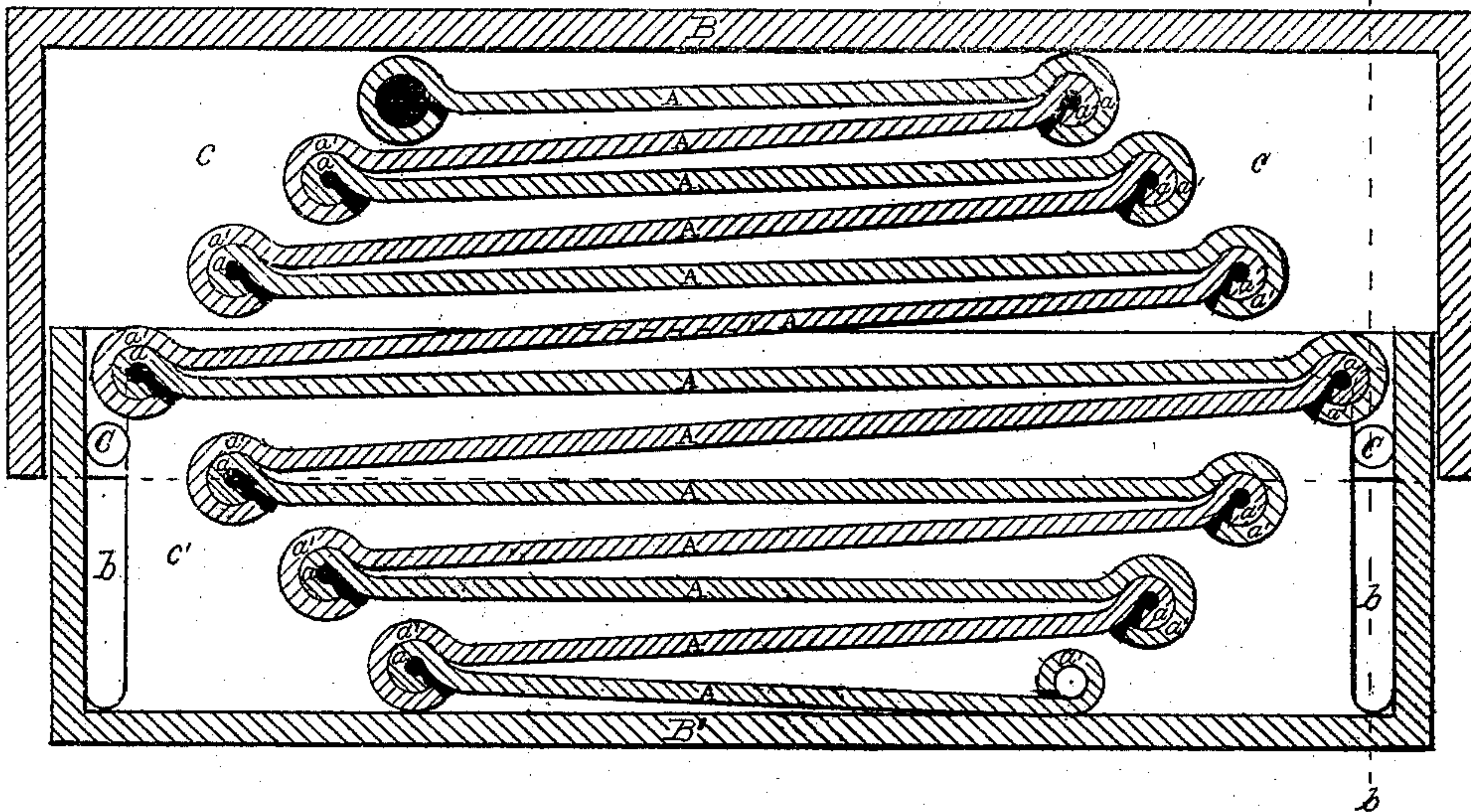
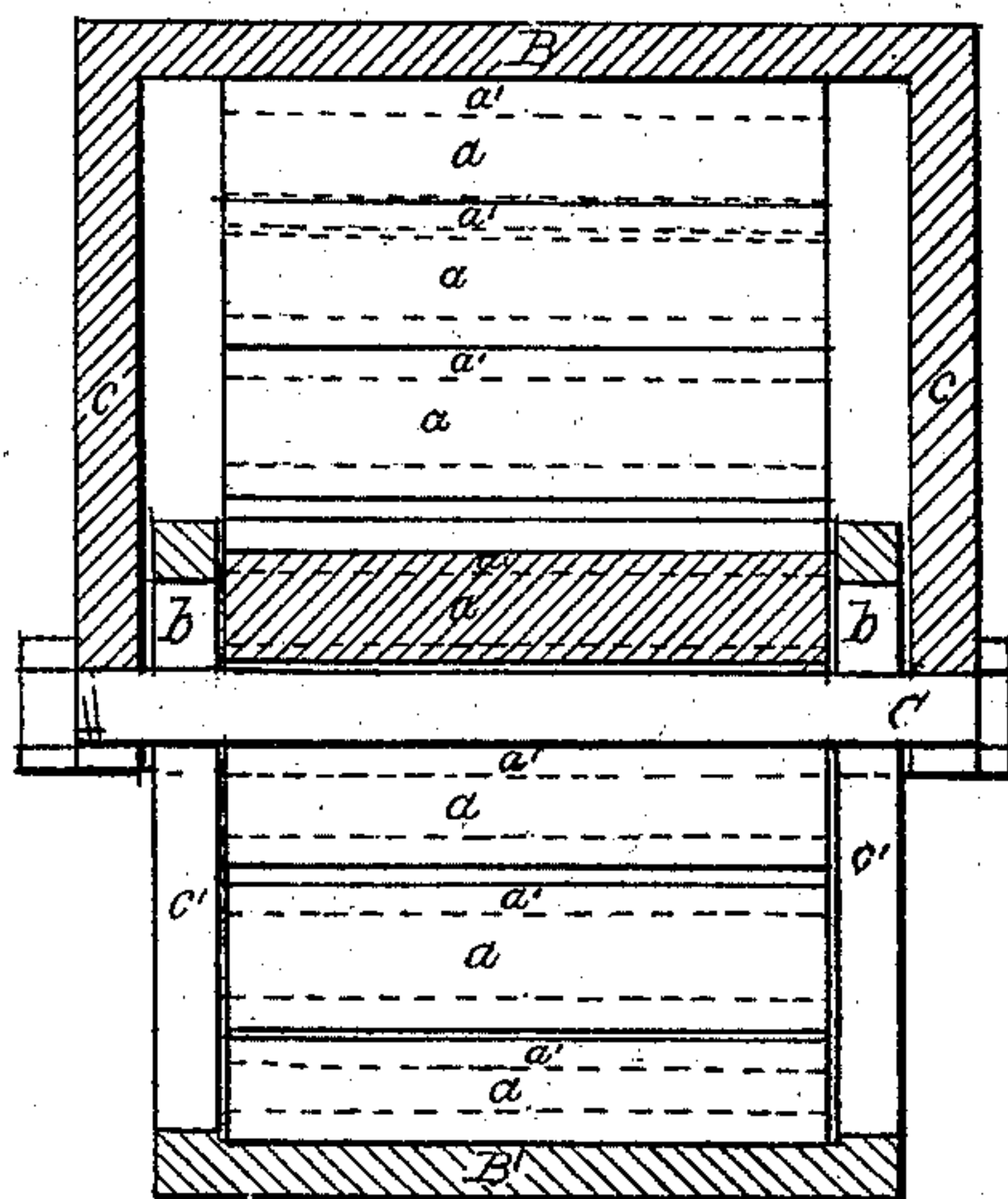


FIG. 2



WITNESSES

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3 Sheets--Sheet 2.

FIG. 3

No. 135,792.

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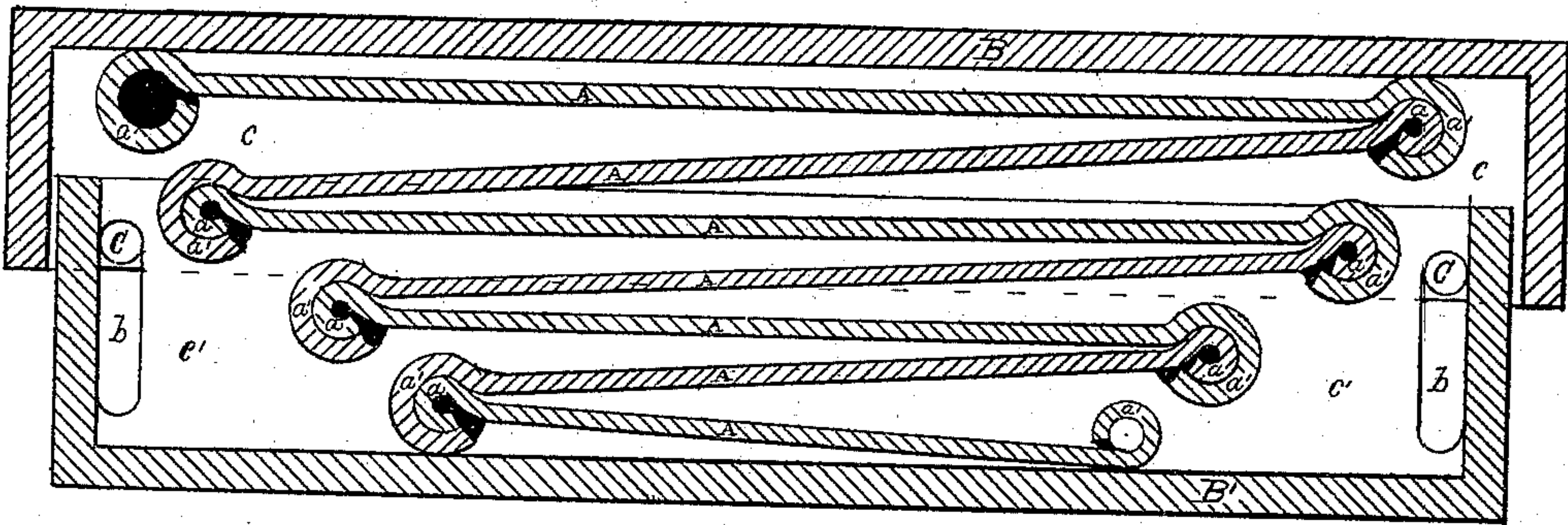


FIG. 4

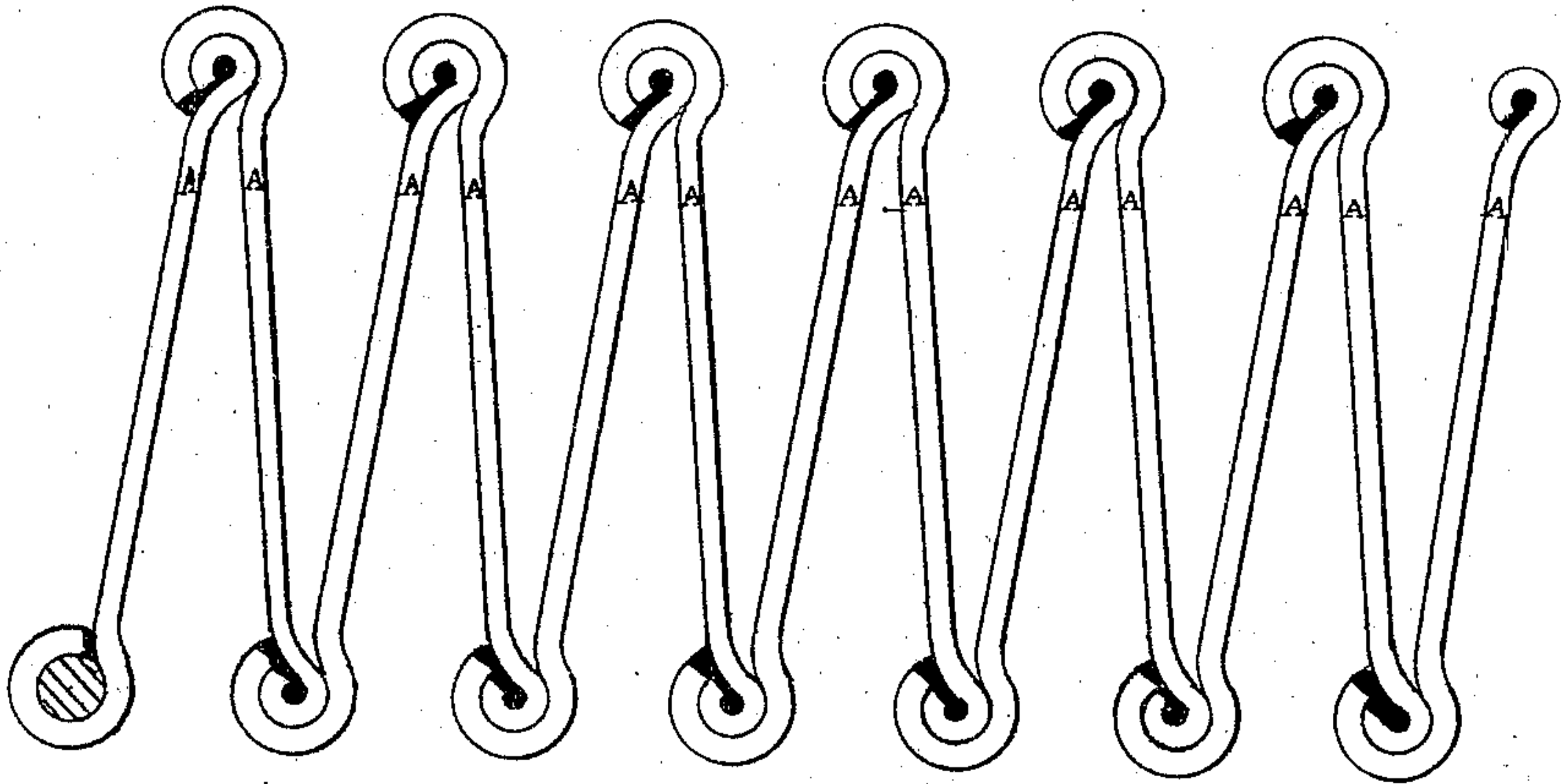
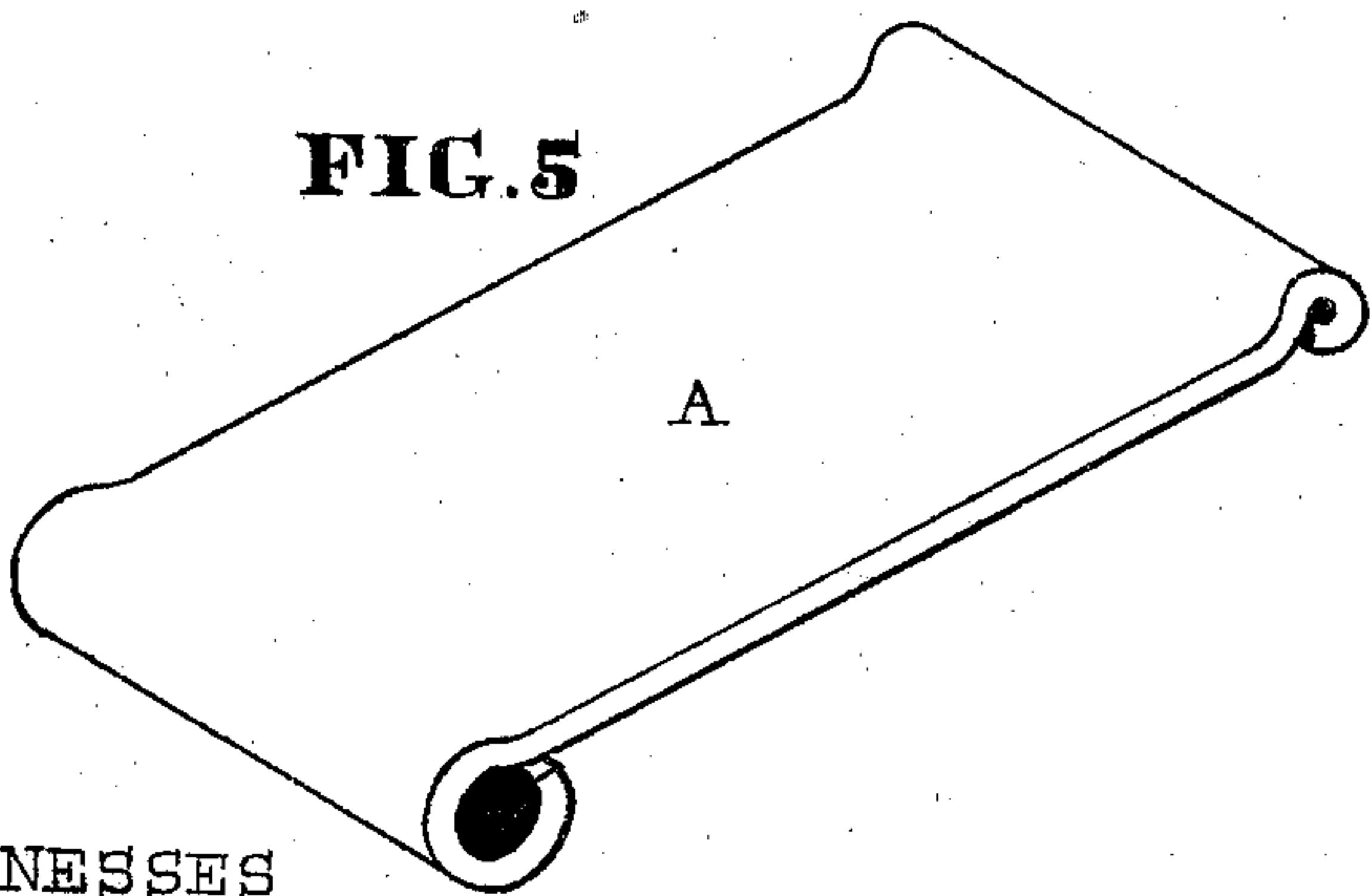


FIG. 5



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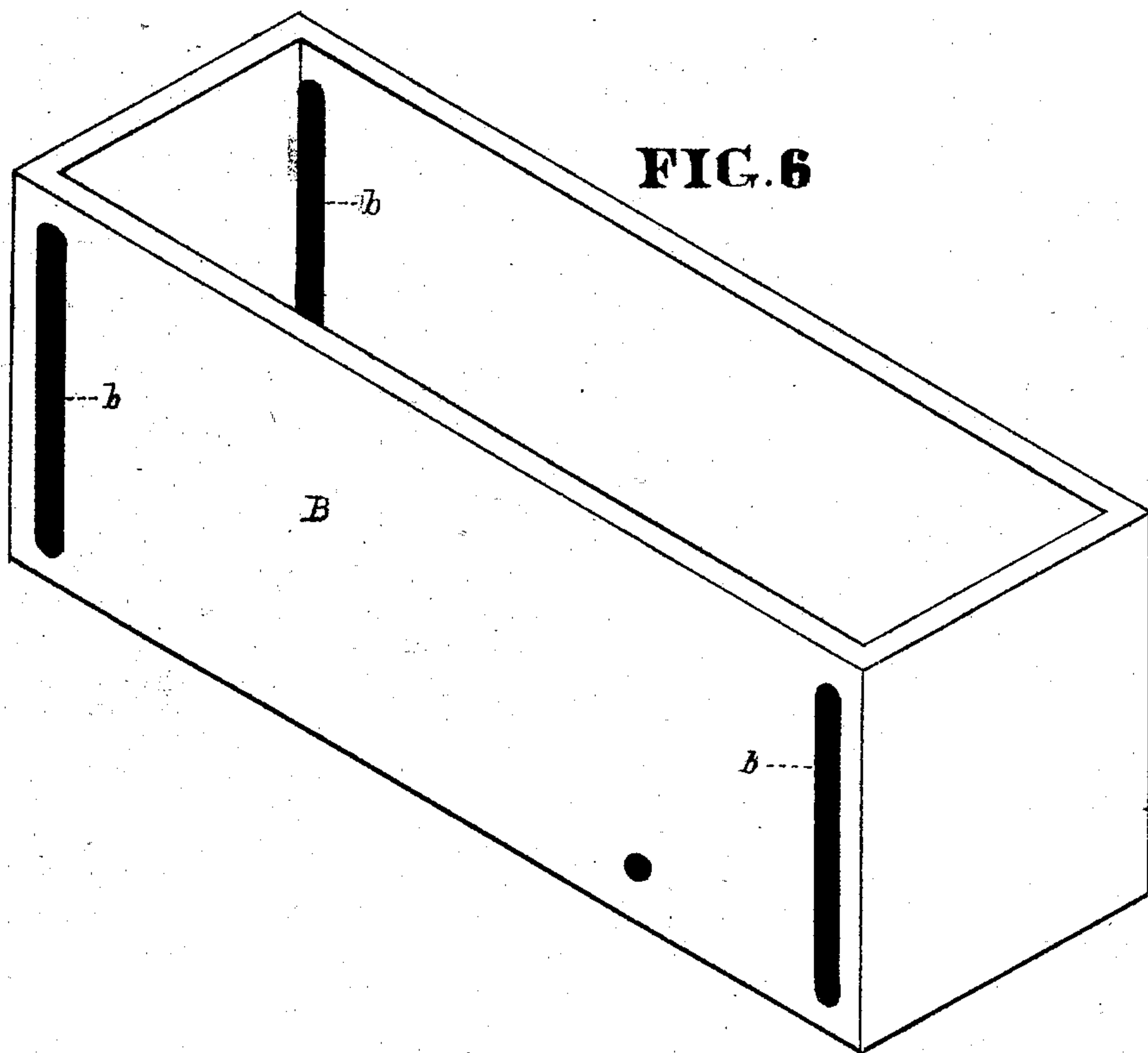
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UNITED STATES PATENT OFFICE.

GEORGE FRANKLIN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. **135,792**, dated February 11, 1873.

To all whom it may concern:

Be it known that I, GEORGE FRANKLIN, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Car-Springs, of which the following is a specification:

The first part of my invention relates to a spring formed of a series of steel plates, which are connected together at their ends in such a manner as to form a zigzag spring, which operates somewhat after the manner of a spiral spring. The second part of the invention relates to the connection of the plates by means of scrolls on their ends which interlock each other, as hereinafter described.

I usually incase the springs in a pair of cast-iron boxes, one of which slides over the other. The boxes may, however, be dispensed with by connecting the springs with head-plates in any convenient manner.

Figure 1 is a vertical longitudinal section of a spring adapted for passenger-cars. Fig. 2 is a cross-section at the line *a b* of Fig. 1. Fig. 3, Sheet No. 2, represents a vertical section of a spring for freight-cars. Fig. 4 is a section of a spring suitable for bumpers. Fig. 5 is an isometrical view of one of the plates A. Fig. 6, Sheet No. 3, is a like view of the box B'.

Like letters in all the figures indicate the same parts.

The plates A are constructed with a scroll, *a*, at one end, and a scroll, *a'*, at the other end, the scroll *a* of each plate being of such dimensions that when driven into the scroll *a'* of a contiguous end of another plate a tight and strong fit is made, so that when connected together in zigzag form, as represented in the drawing, they shall operate in like manner as

an elliptic or spiral spring. In Fig. 1 the middle plate of the series is represented longer than the others, which diminish in length each way so as to act on the principle of an elliptical spring. B B' are cast-iron boxes, which incase the springs, there being cross-bolts C C, which connect them. The ends of the bolts have a permanent connection with the sides *c* of the box B, and slide in the cross-grooves *b* in the sides *c'* of the box B' in the contraction and expansion of the spring. The spring in Fig. 3 represents a spring suitable for freight-cars. It is constructed like that represented in Figs. 1 and 2, with the exception that the plates A diminish in length one way, instead of each way from the center of the spring. Fig. 4 represents a portion of a bumper-spring, in which I make the plates A of equal length, there being a sufficient number of plates to give the proper elasticity to the spring. The ends of the plates A may be connected by means of clamping-pieces instead of the scrolls, if desired.

I claim as my invention—

1. A spring composed of plates A connected together at their ends, and arranged in zigzag form to cause the spring to act in the manner of an elliptical or spiral spring, substantially as described.

2. The scrolls *a* and *a'* on the ends of the plates A for connecting the latter together, substantially in the manner and for the purpose set forth.

GEORGE FRANKLIN.

Witnesses:

THOMAS J. BEWLEY,
STEPHEN USTICK.