

No. 726,817.

PATENTED APR. 28, 1903.

F. P. D'ARCY.
SPRING.

APPLICATION FILED NOV. 7, 1902.

NO MODEL.

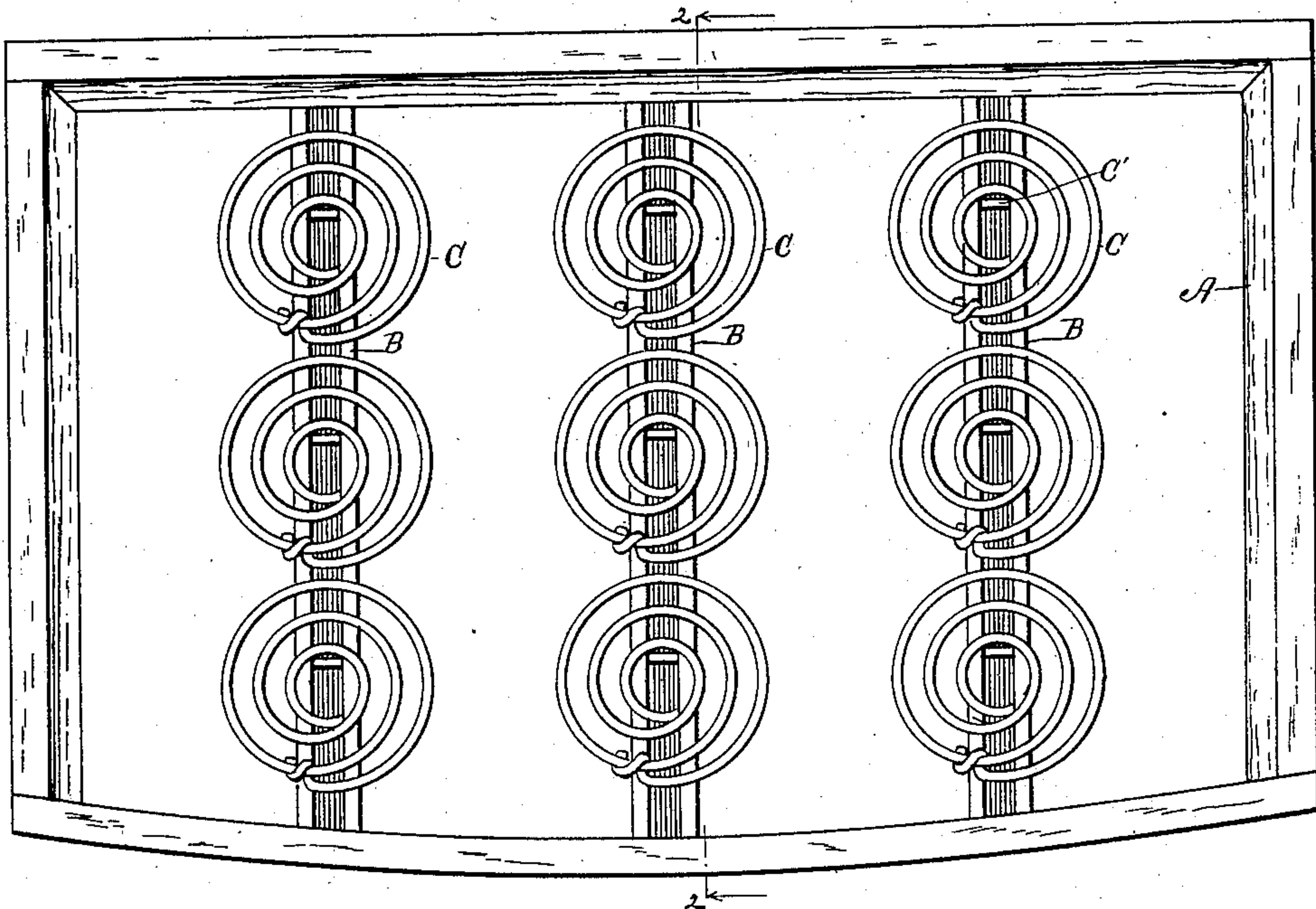


Fig. 1

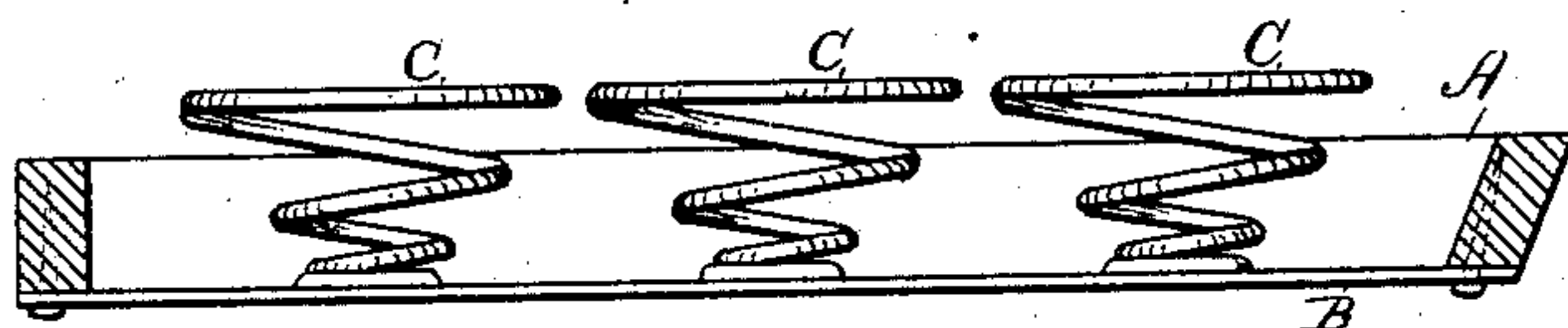


Fig. 2

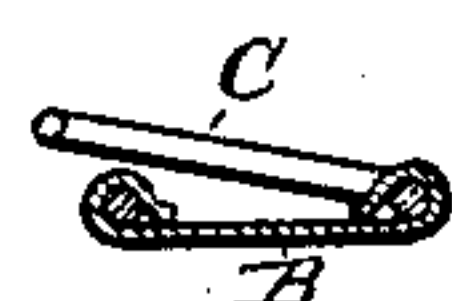


Fig. 4

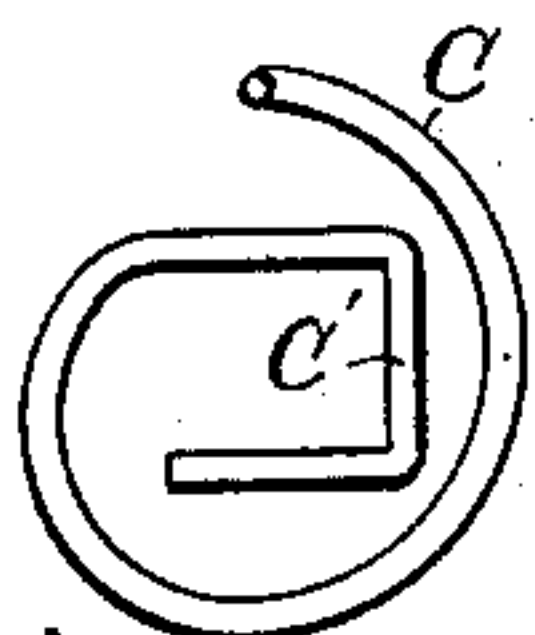


Fig. 5

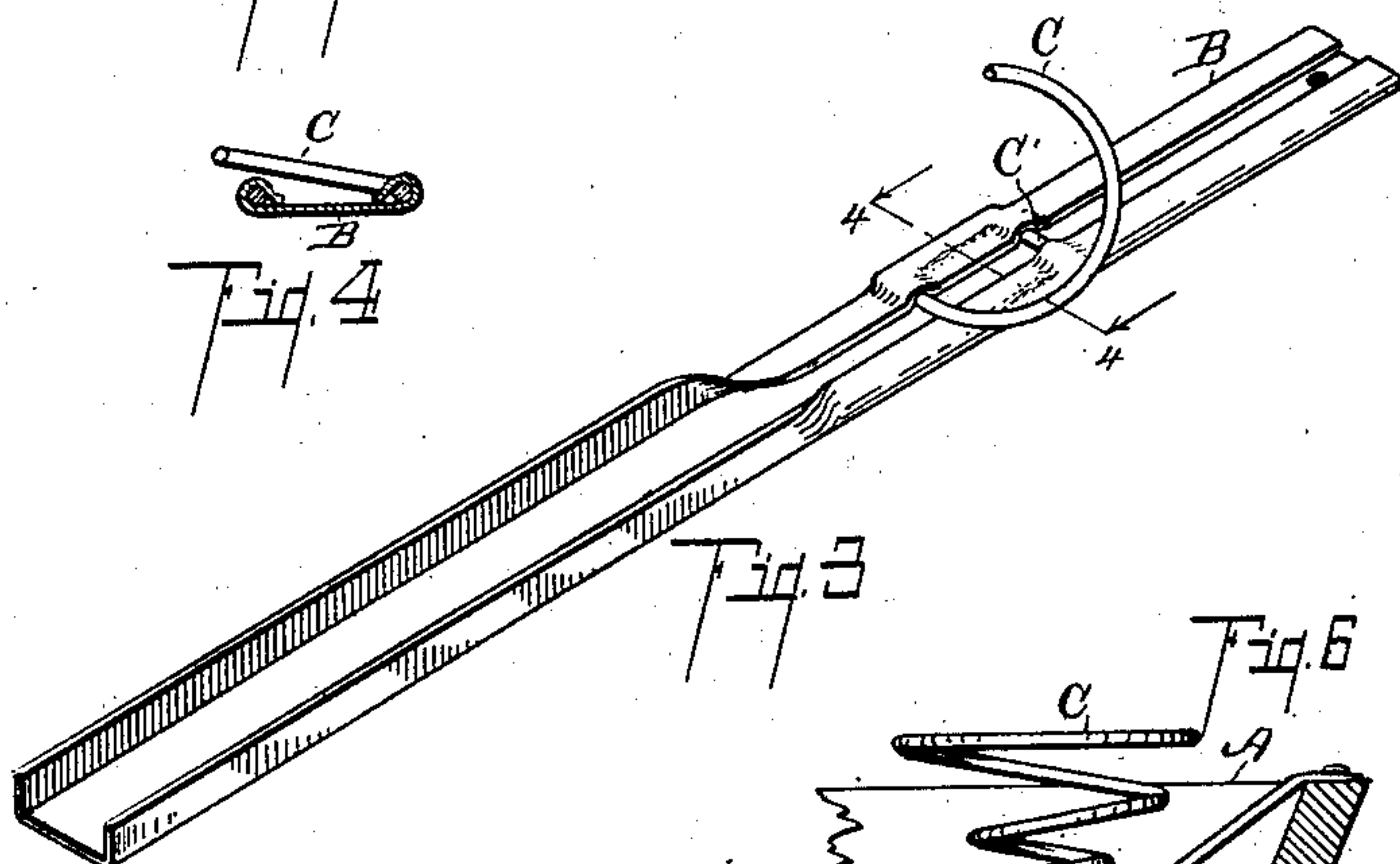


Fig. 3

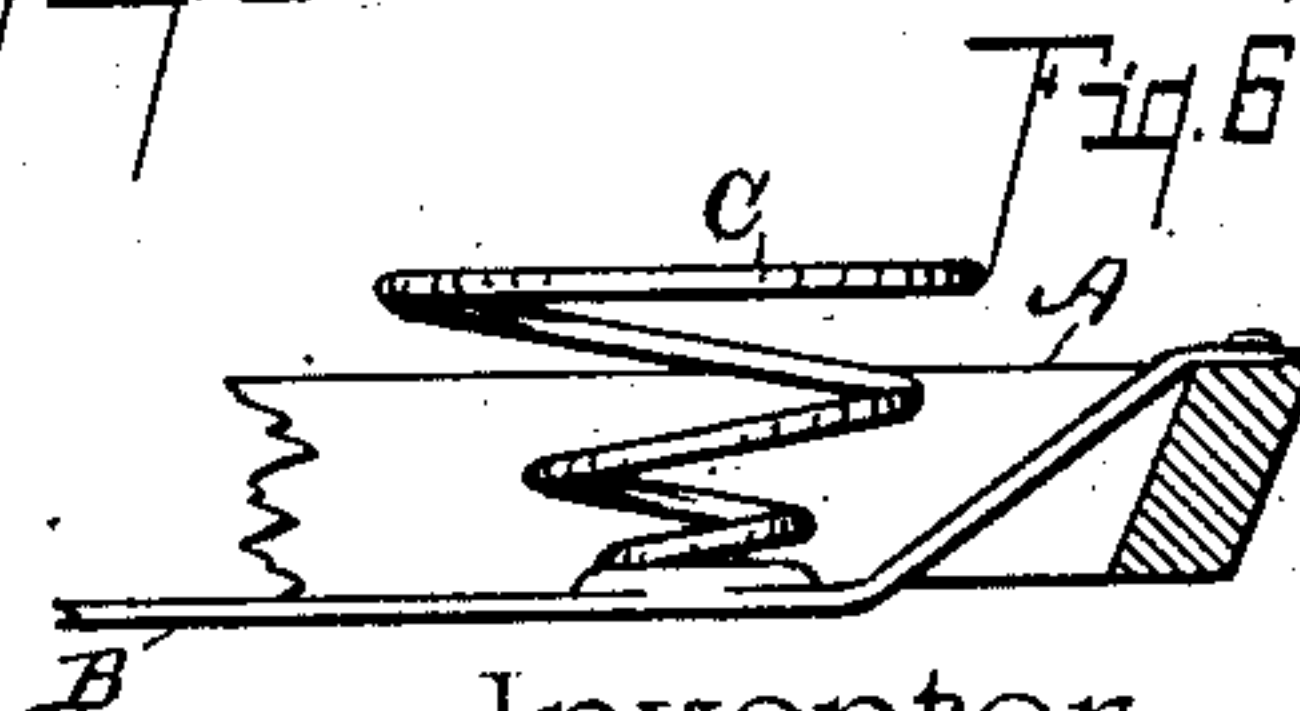


Fig. 6

Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK P. D'ARCY, OF KALAMAZOO, MICHIGAN.

SPRING.

SPECIFICATION forming part of Letters Patent No. 726,817, dated April 28, 1903.

Original application filed October 2, 1902, Serial No. 125,611. Divided and this application filed November 7, 1902. Serial No. 130,435. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. D'ARCY, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Springs, of which the following is a specification.

This invention relates to improvements in spring structures. It relates particularly to cushion-springs for seats and the like, although it is applicable for use in other relations.

The objects of this invention are, first, to provide an improved spring structure in which the parts are securely and rigidly held in position; second, to provide an improved cushion-spring structure formed of helical or conical springs which can be readily transported in the knockdown and set up or assembled by an inexperienced person; third, to provide an improved spring structure which is very economical to produce and durable in use.

Further objects will definitely appear in the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my improved spring structure as applied to a cushion for carriage-seats. Fig. 2 is a cross-sectional view of the structure taken on a line corresponding to line 2 2 of Fig. 1, the spring C being shown in full lines. Fig. 3 is a detail perspective view of one of the supporting-strips B, showing the manner of securing the springs C thereto. Fig. 4 is a detail cross-sectional view showing the spring connection, taken on line 4 4 of Fig. 3. Fig. 5 is a detail view showing the structure of the conical spring C. Fig. 6 is a detail sectional view, corresponding to the view shown in Fig. 2, of a slightly-modified construction, the supporting-strip B being bent up and attached

to the top of the seat-frame instead of the bottom.

In the drawings similar letters of reference refer to similar parts throughout the several views.

The sectional views are taken looking in the direction of the little arrows at the ends of the section-lines.

Referring to the drawings, the frame A here illustrated is the frame of a carriage-seat cushion and is of the usual construction and form. It may, however, be any style desired. A strip B of sheet metal is provided for each row of springs C, as clearly appears in Fig. 4. The edges of this strip are folded back onto the same and parallel therewith, forming channels or grooves at each side. The springs C, which are preferably of conical type, are secured within this channel-shaped groove, the coil C' of the spring being conformed thereto, so that it supports the spring in an upright position above the strip, the spring being retained by being grasped by the folded-back edges of the cross-strip. The springs are very securely supported in position, and owing to the very firm grasp of the cross-strips on the bottom coils they are efficiently supported independently of each other without any danger of tipping or becoming displaced, and owing to the fact that the bottom coil is conformed there is no chance for twisting or turning the springs, which might possibly tend to loosen them and wear the covering. With the springs in position on the strips they are readily secured in position on the frame by nails.

In the construction of my improved spring I preferably form the sheet-metal cross-strips B in the form of channel-irons or roll the edges over as in forming seams. The springs C are then slipped into position, the bottom coil being conformed and the edges of the strips B rolled or stamped down upon the same, as clearly appears in Figs. 2, 3, and 4, which holds the springs so that they are always supported in an upright position and twisting and turning or other movement in the cushion is prevented, the advantages of which will be readily recognized.

The structure is very economical to pro-

duce, as the parts can be quickly assembled or may be transported in the knockdown, which of course results in great economy. The structure is also very strong and durable.

5 This manner of retaining and supporting the springs is particularly desirable in connection with conical springs, as it retains them securely in position and allows them to collapse freely. However, it is also a very
10 desirable way of supporting the hour-glass form of spring.

In the modified construction shown in Fig. 6 the ends of the supporting-strip B are bent upwardly and outwardly and secured to the
15 top of the seat-frame instead of the bottom. The supporting strength of the strips is somewhat increased by this construction, although the structure of the main views meets all ordinary requirements.

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

1. In a spring structure, the combination of a frame A; conical springs C with coils C'

at the bottom conformed to the cross-strips; 25 sheet-metal cross-strips B with inturned edges folded onto the bottom coils of said springs to clamp the same, coacting for the purpose specified.

2. In a spring structure, the combination 30 of a frame; conical springs C; sheet-metal strips B with inturned edges folded onto the bottom coils of said springs, coacting for the purpose specified.

3. In a spring-cushion structure, the com- 35 bination of an upright helically-coiled spring; a strip of sheet metal with inturned opposite edges folded onto and embracing the opposite sides of the bottom coil of said spring, whereby said spring is supported and re- 40 tained in position.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

FRANK P. D'ARCY. [L. S.]

Witnesses:

ETHEL A. TELLER,
OTIS A. EARL.