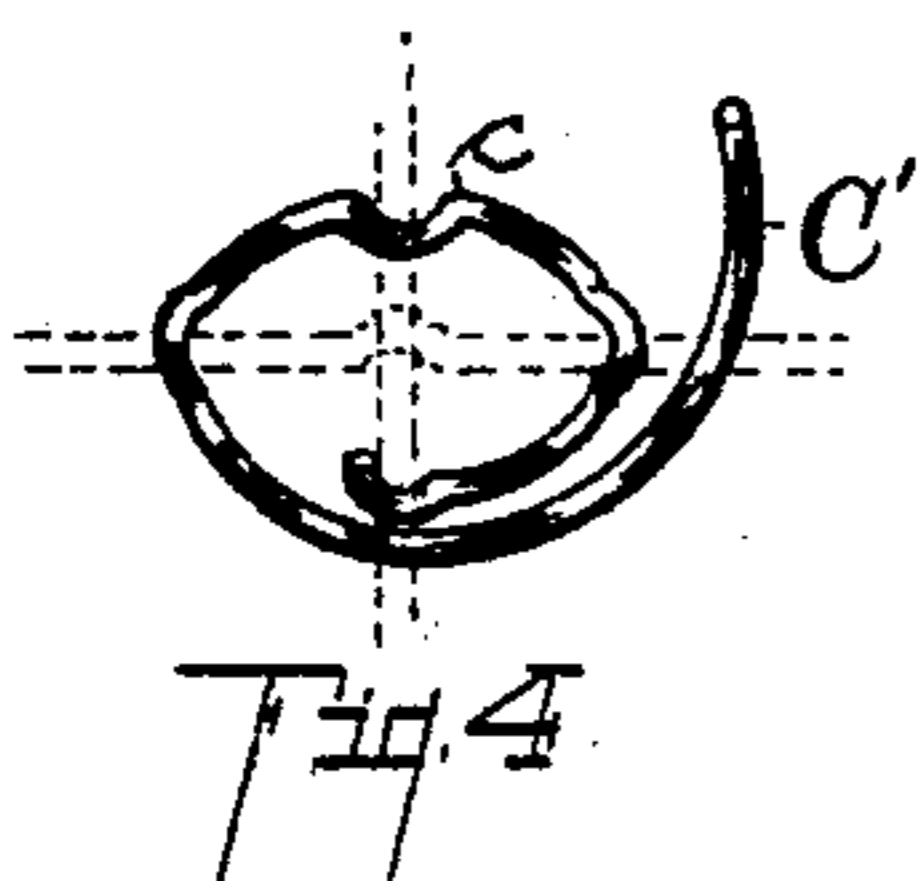
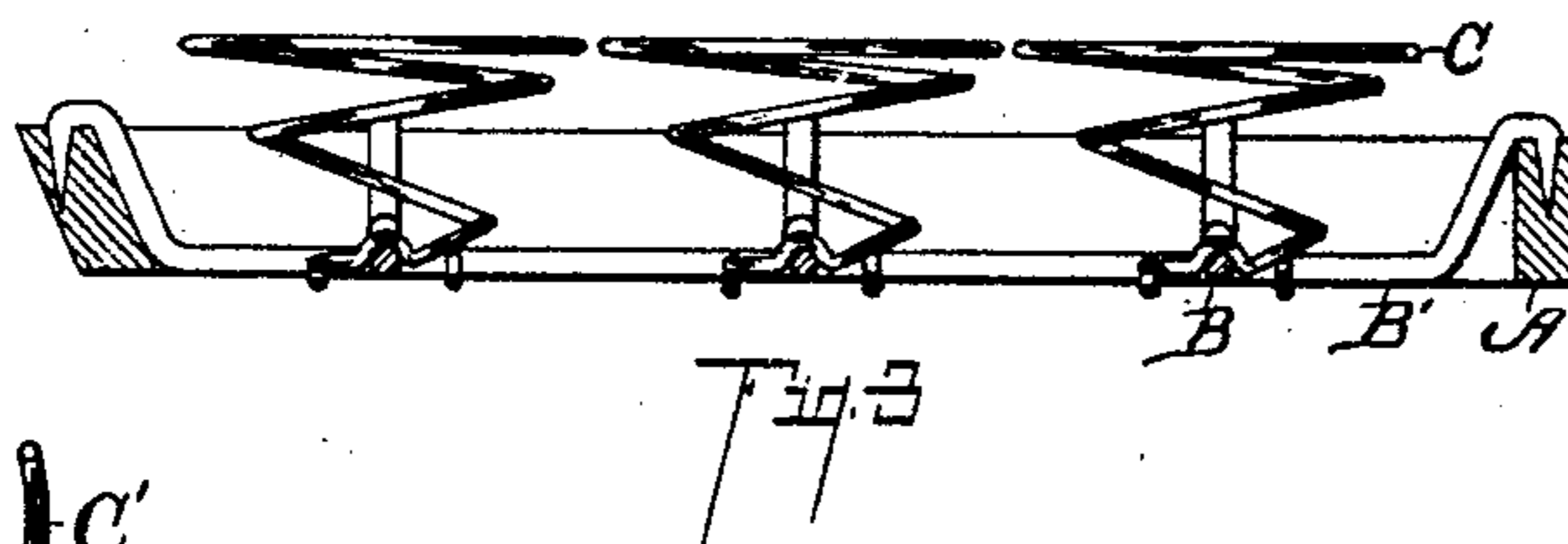
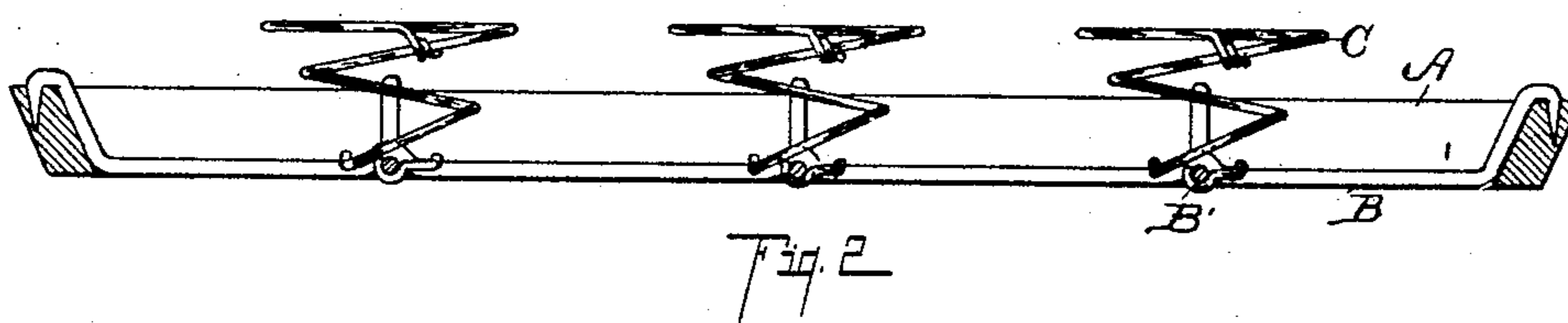
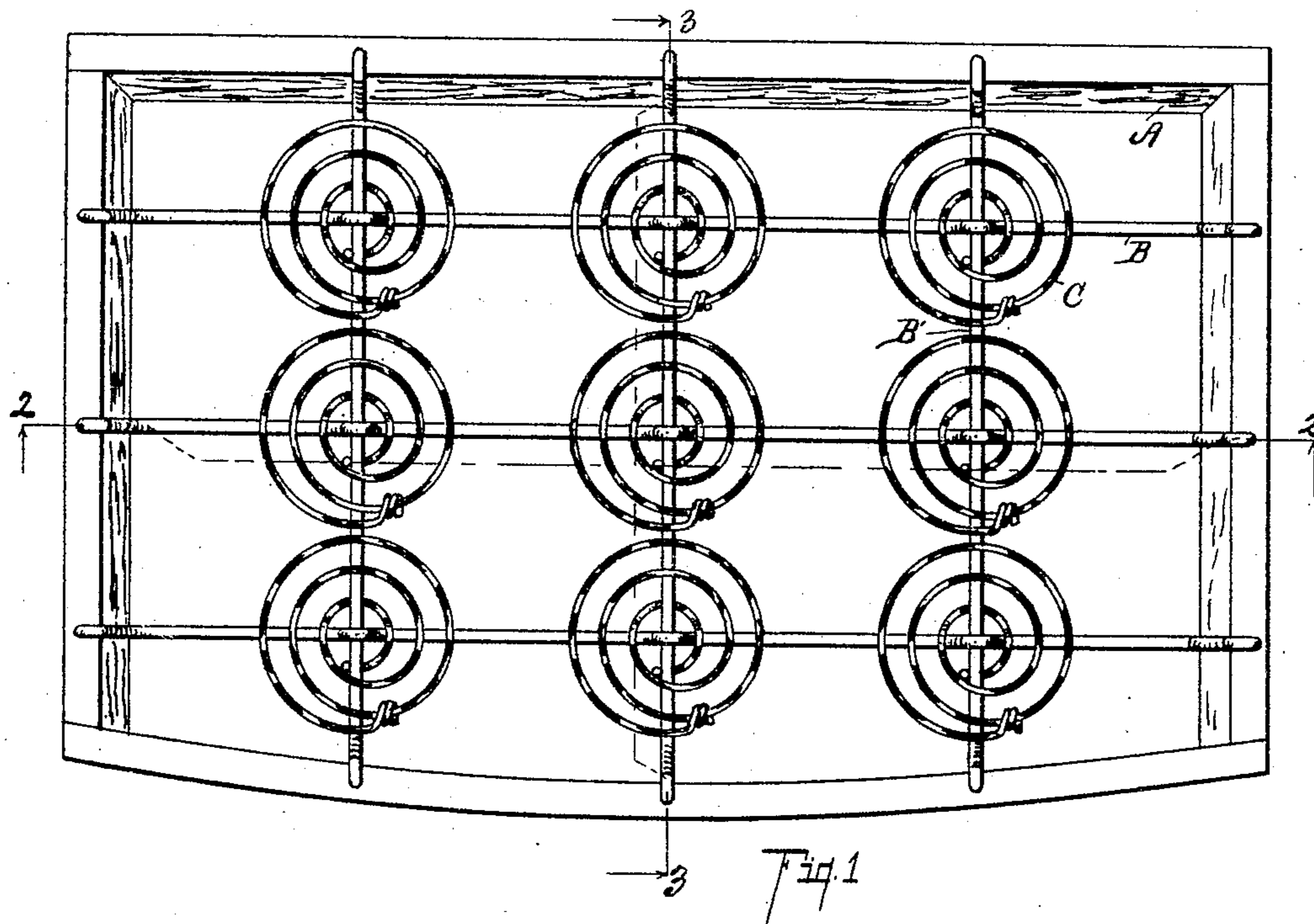


No. 803,561.

PATENTED NOV. 7, 1905.

F. P. D'ARCY.
SPRING.

APPLICATION FILED JAN. 11, 1905.



Witnesses:

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UNITED STATES PATENT OFFICE.

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

SPRING.

No. 803,561.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed January 11, 1905. Serial No. 240,620.

To all whom it may concern:

Be it known that I, FRANK P. D'ARCY, a citizen of the United States, residing in the city of Kalamazoo, county of Kalamazoo, 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.

10 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 structure in which the 15 springs are securely and rigidly retained in position and one which is very economical to produce and at the same time strong and durable; second, to provide an improved spring structure which can be readily shipped in the 20 disassembled or knockdown condition and quickly and readily assembled or set up by the user.

Further objects and objects relating to structural details will definitely appear from 25 the detailed description to follow.

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

30 The invention is clearly defined, and pointed out in the claim.

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

35 Figure 1 is a plan view of a structure embodying the features of my invention. Fig. 2 is a longitudinal sectional view taken on the broken line 2 2 of Fig. 1. Fig. 3 is a cross-sectional view taken on the broken line 3 3 of 40 Fig. 1. Fig. 4 is a detail perspective view showing the relation of the spring and the supporting-rods therefor.

In the drawings similar letters of reference refer to similar parts throughout the several views and the sectional views are taken 45 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. 50 It may, however, be of any desired construction and form.

The springs C are secured and retained in position by the supporting-rods B B'. These 55 rods B B' are arranged in sets, the rods of one set being arranged transversely to the rods

of the other set. In the structure illustrated the rods B are the longitudinal supporting-rods, and the rods B' are the transverse or cross supporting-rods. These supporting-rods are preferably provided with brads at 60 their ends, by means of which they are secured to the cushion-frame, as clearly appears from the drawings. The rods B are kinked at intervals to receive the rods B'. This as- 65 sists in retaining the rods in proper relation to each other and also brings the rods B and B' in substantially the same plane. The rods thus arranged form a supporting-network for the springs. The springs are located at the 70 points of intersection of the supporting-rods, so that the number and position of the springs in the cushion are controlled by the number and arrangement of the supporting-rods. The bottom coils C' of the conical springs C are 75 interwoven with the supporting-rods by arranging the same over one rod and under its intersecting rod, as clearly appears from the drawings. Kinks c are formed in the bottom coils C' of the springs to engage the rods. 80 This prevents the turning or twisting of the springs and its consequent loosening. With the bottom coils C' of the springs thus interwoven with the supporting-rods the springs are not only supported in an upright position, 85 but the rods are securely locked together, thus making a very secure structure, although the same may be comparatively light. The kinks c of the bottom coil C' of the spring are so arranged that the end of the coil projects up- 90 wardly. This leaves the bottom of the cushion comparatively smooth and entirely free from engaging points.

The structure may be very quickly set up, as it is only necessary to arrange the rods and 95 secure or twist the springs into position. They are thus securely held without any further operation, and the rods are so locked together that there is no danger of one of them becoming displaced unless the same is sub- 100 jected to very unusual treatment. Should any particular spring become defective by use or accident, it may be quickly removed and a new one inserted without in any way disturbing the other springs of the cushion. With 105 the parts thus arranged the springs are supported in an upright position without the necessity of tying the tops thereof, as is common practice in upholstering. My improved structure is, as before stated, very economical 110 and is at the same time strong and durable.

I have illustrated and described the same in

detail in what I believe to be the preferred form on account of structural simplicity and convenience in use, although I am aware that it is capable of considerable structural variation without departing from my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

In a spring structure, the combination of a frame; a set of rods arranged in said frame; a second set of rods arranged transversely to the said first-mentioned rods and having kinks therein to engage the same at their points of intersection; conical springs having kinks in

their bottom coils on their quarters, adapted to engage said rods and interwoven therewith by being arranged over one of said rods and under its intersecting rod, the ends of said bottom coils of said springs being free so that they may be engaged with said rods by a twisting movement of the springs, for the purpose specified.

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

FRANK P. D'ARCY.

Witnesses:

ETHEL A. TELLER,

OTIS A. EARL.