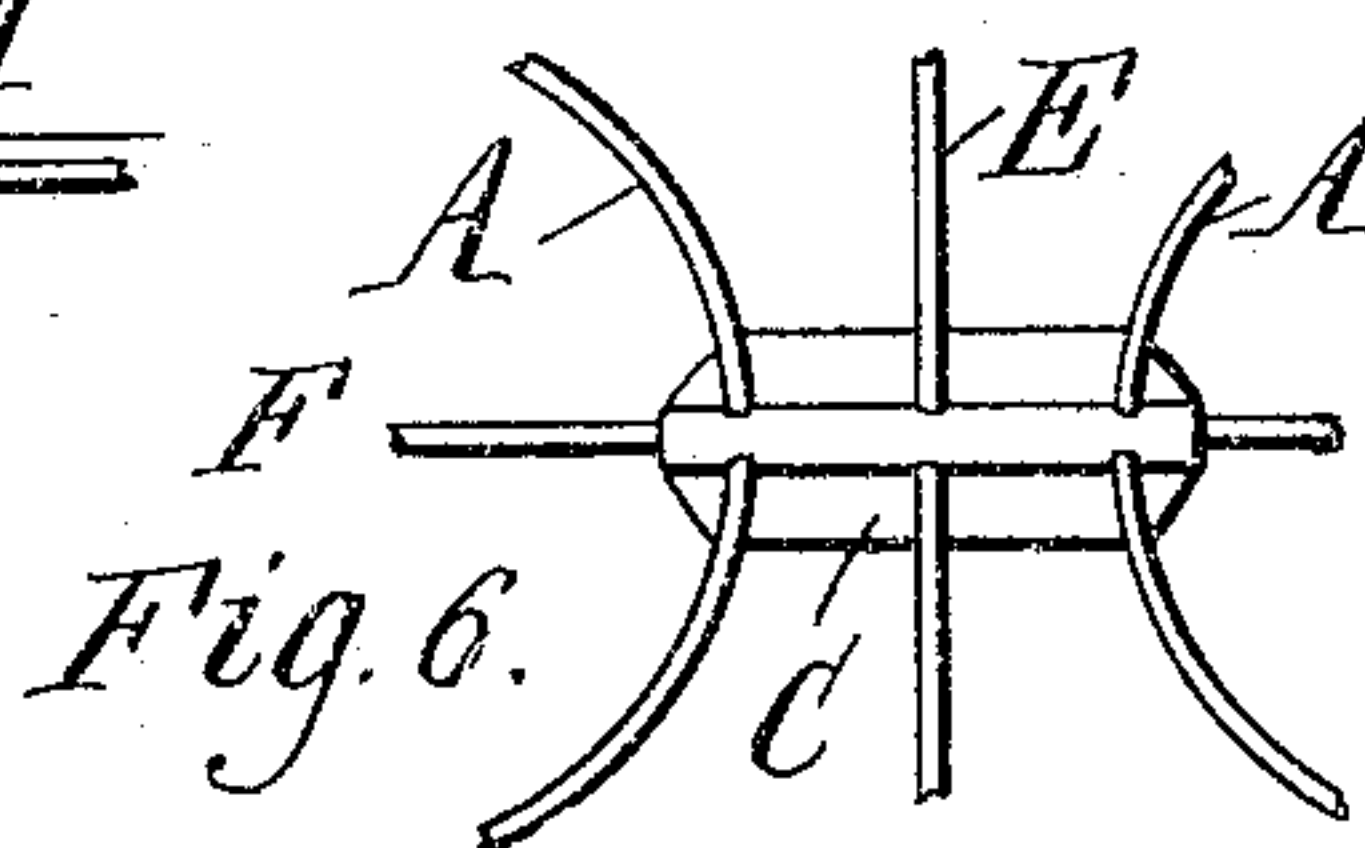
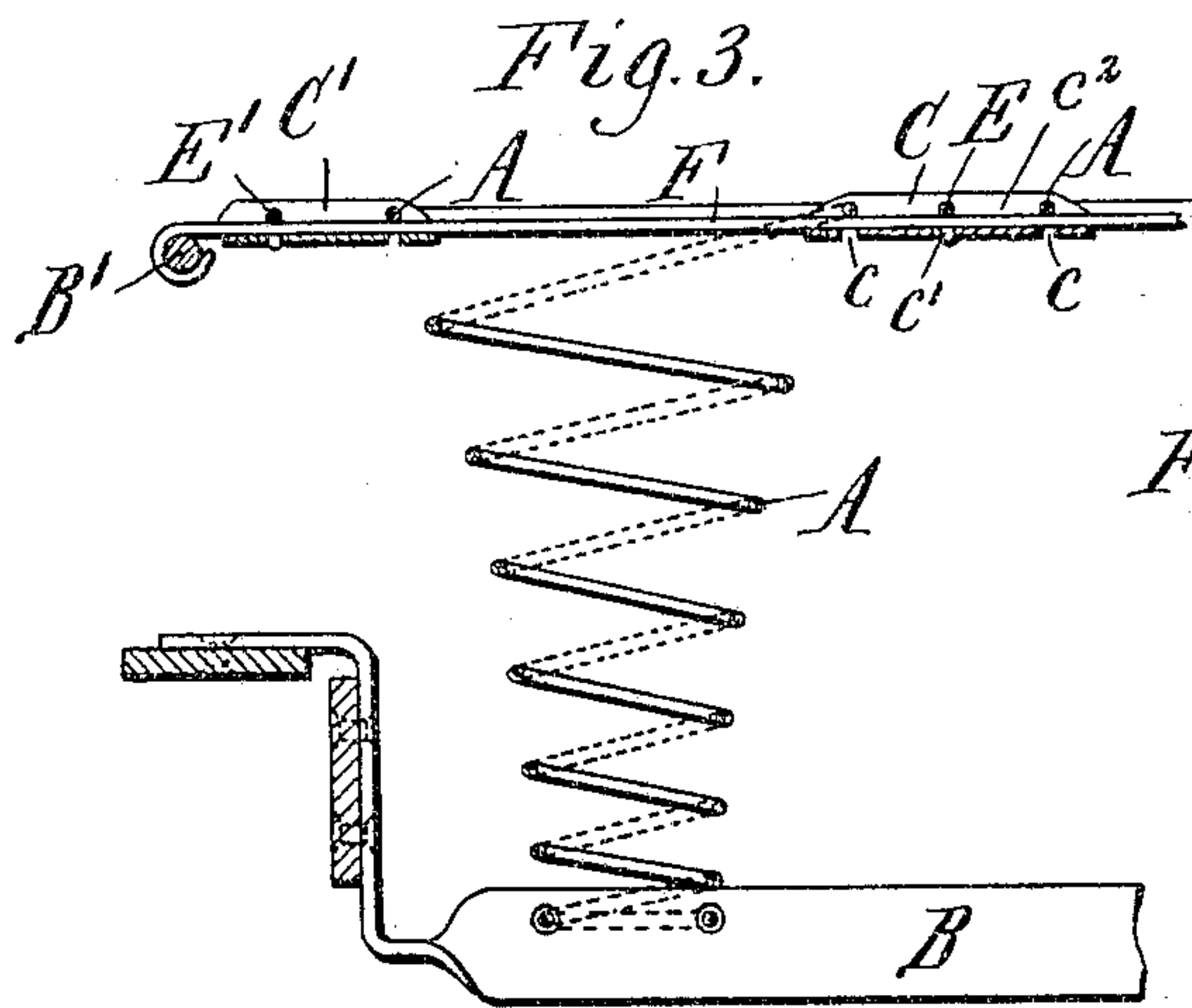
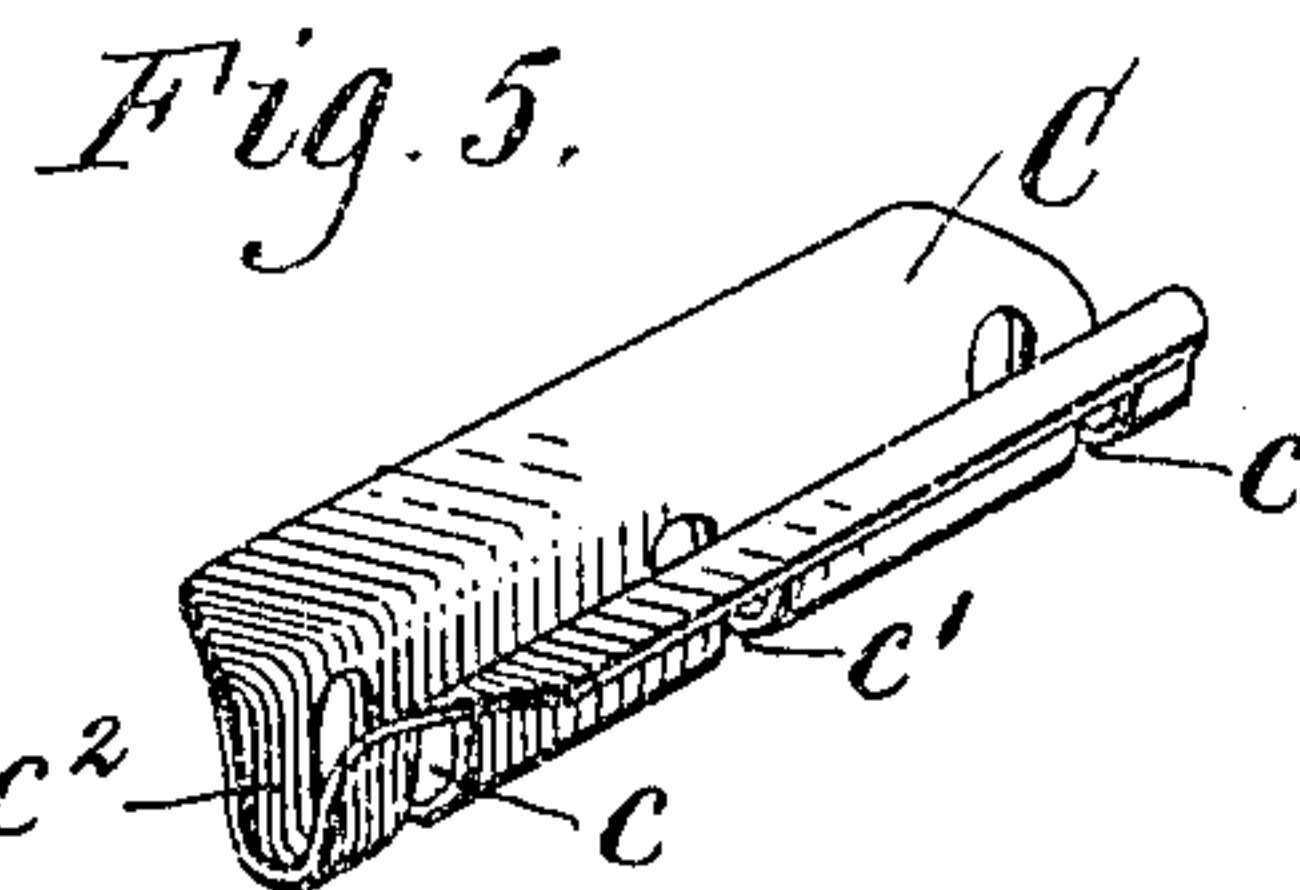
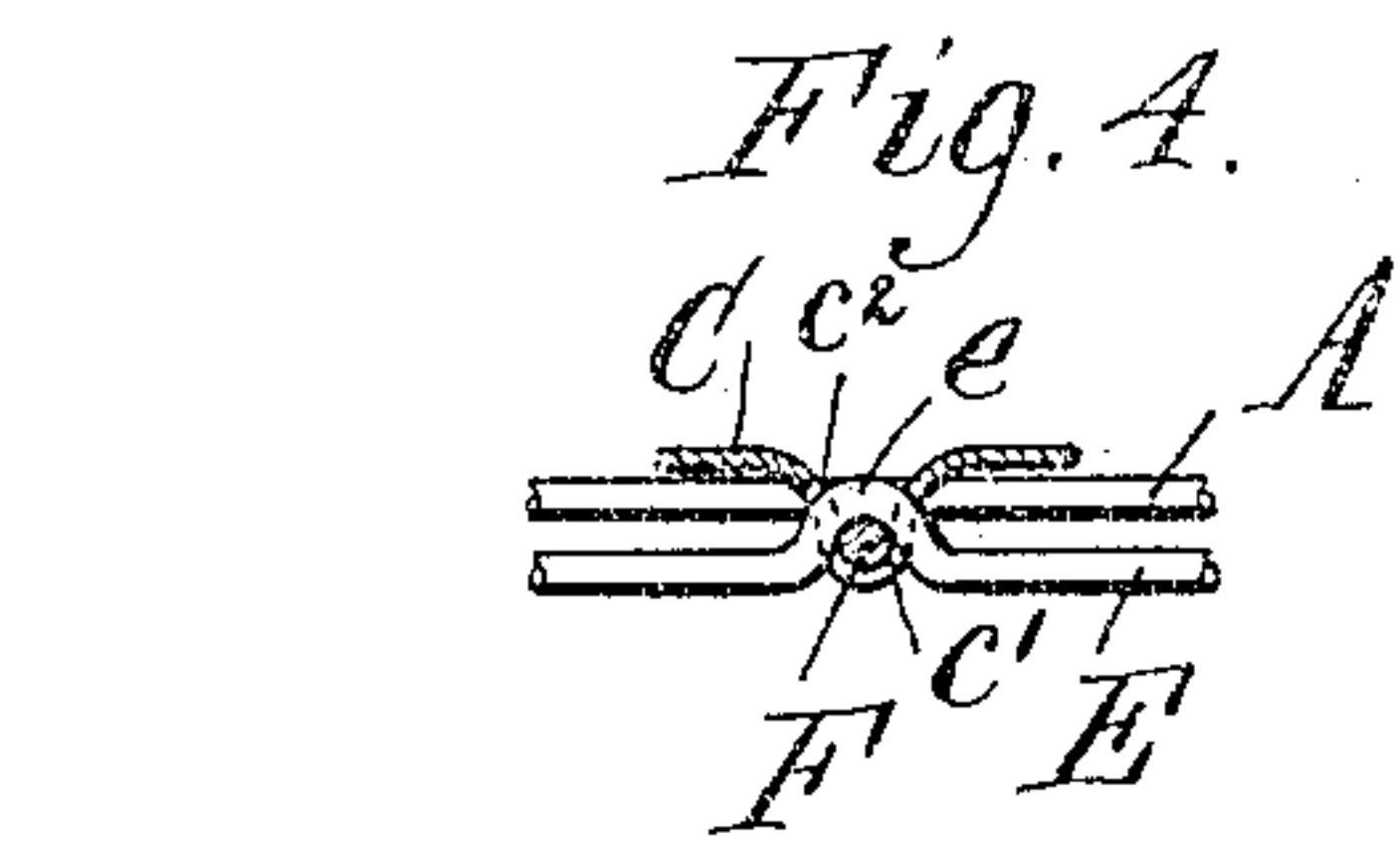
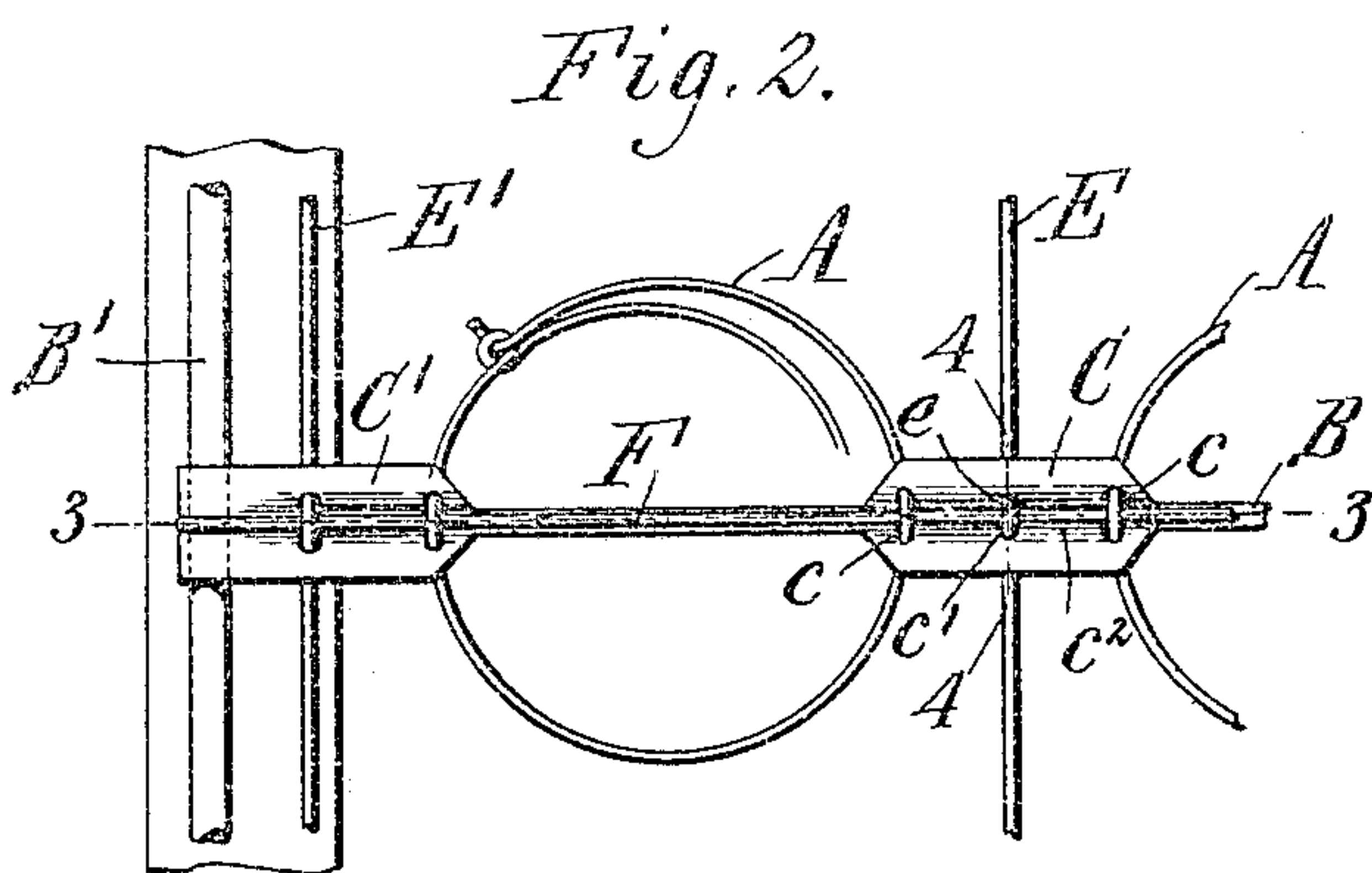
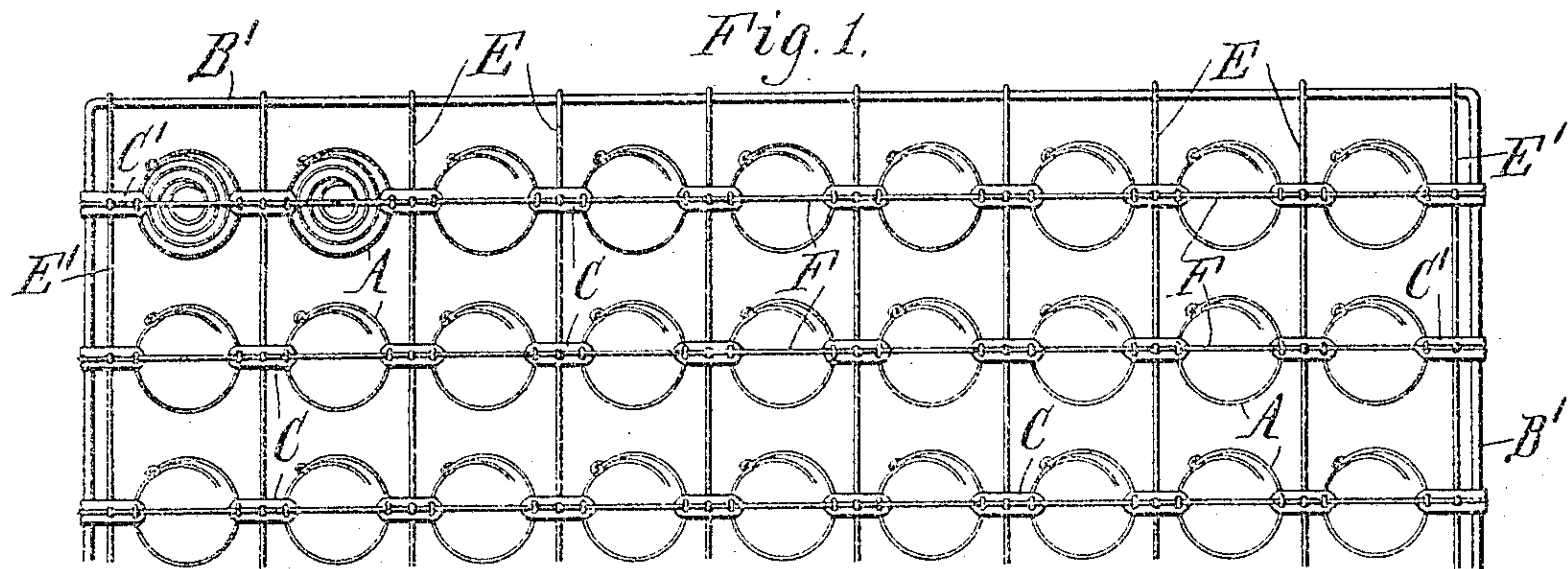


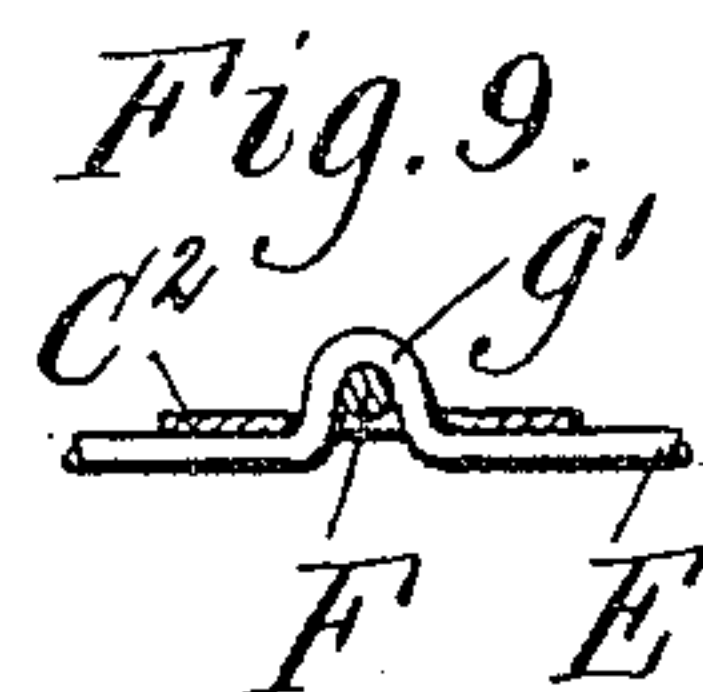
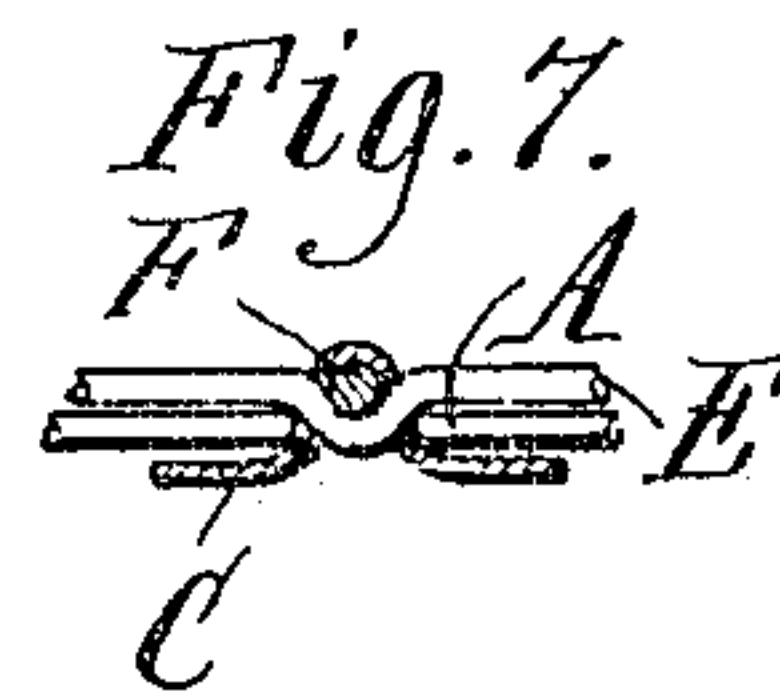
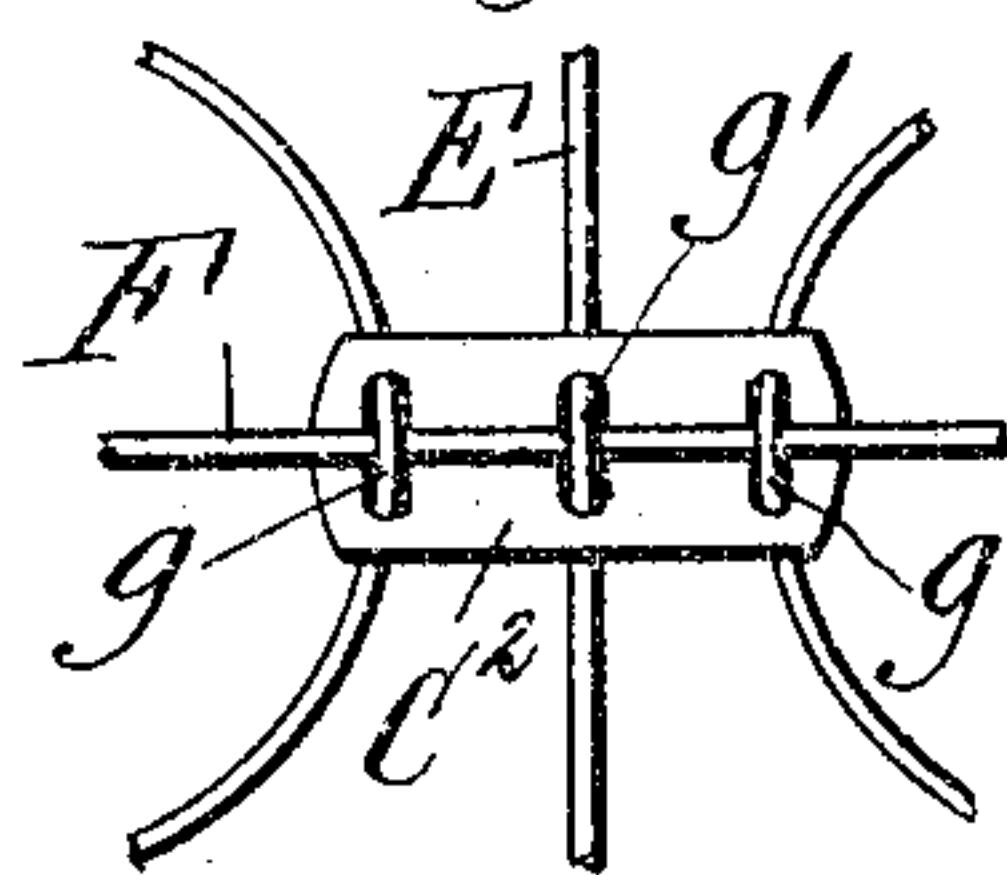
No. 793,251.

PATENTED JUNE 27, 1905.

C. VALLONE.  
 SPRING BED BOTTOM.  
 APPLICATION FILED OCT. 3, 1904.



*Fig. 8.*



Witnesses:

E. A. Volk.

R. W. Runner.

Inventor.  
 Charles Vallone  
 by Wilhelm Ruppert Hard,  
 Attorneys.



# UNITED STATES PATENT OFFICE.

CHARLES VALLONE, OF BUFFALO, NEW YORK, ASSIGNOR TO EDWARD J. BARCALO, OF BUFFALO, NEW YORK.

## SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 793,251, dated June 27, 1905.

Application filed October 3, 1904. Serial No. 226,901.

*To all whom it may concern:*

Be it known that I, CHARLES VALLONE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Spring Bed-Bottoms, of which the following is a specification.

This invention relates to that class of spring-bottoms for beds, couches, and other furniture which are composed of vertically-disposed conical spiral springs which are retained in upright position and held from relative lateral displacement by ties connecting the springs.

The invention is directed especially to the construction and arrangement of the tie devices for the springs.

The object of the invention is to lessen the cost of and improve such spiral spring-bottoms by providing a desirable efficient tie construction for the springs involving the minimum of material and number of parts and employing only parts which can be made and applied to the springs at small expense.

In the accompanying drawings, Figure 1 is a plan view of one end of a bed-bottom provided with tie devices embodying the invention. Fig. 2 is a plan view, on an enlarged scale, of a portion of the bottom. Fig. 3 is a vertical elevation in line 3 3, Fig. 2. Fig. 4 is a sectional elevation, on an enlarged scale, in line 4 4, Fig. 2. Fig. 5 is a perspective view of one of the tie-plates detached. Figs. 6 and 7 are respectively a fragmentary plan view and sectional elevation, on an enlarged scale, showing a reversal of the construction shown in Figs. 1 to 5. Figs. 8 and 9 are respectively a fragmentary plan view and sectional elevation, on an enlarged scale, showing a modified construction.

Like letters of reference refer to like parts in the several figures.

A, Figs. 1 to 4, represents the spiral springs, which are attached at their lower ends to a supporting frame or structure B. This frame forms no part of this invention and may be of any known or suitable form.

B' represents a rectangular frame which surrounds the upper ends of the springs and to

which they are connected by the tie devices to be described.

The spiral springs, which may be of any of the usual forms, are arranged in parallel rows both longitudinally and transversely of the bottom and are held in upright position in this relative order, while being free to yield or compress vertically by tie devices constructed and arranged as follows:

C represents tie-plates which are arranged between and connect the springs in adjacent rows running one way only of the bottom—for instance, the rows running lengthwise. These tie-plates C and tie-plates C', connecting the springs of the two side rows with the sides of the rectangular frame B', which surrounds the bottom, hold the springs from displacement sidewise. There are no tie-plates between the springs in the rows which run in the other direction—that is, crosswise of the bottom in the construction shown—and the springs are held from displacement endwise of the bottom by tie-wires E, which extend lengthwise of the bottom between adjacent longitudinal rows of springs and are fixed to the several tie-plates and attached at their opposite ends to the ends of the rectangular frame B'. The tie-plates C' at the sides of the bottom are similarly connected to each other and to the ends of the rectangular frame B' by longitudinal tie-wires E'. The tie-plates are secured to the wires to hold them from movement longitudinally of the tie-wires by securing-wires F, which in the construction shown extend crosswise of the bottom in the vertical planes of the transverse rows of springs.

By the described relative arrangement of the tie plates and wires the springs are held upright and from movement or displacement either lengthwise or crosswise of the bottom and only about one-half as many tie-plates are required as in bottoms in which tie-plates are arranged between and connect the springs in both the longitudinal and transverse rows.

Each of the tie-plates C has at its opposite ends slots c, in which the top coils of two adjacent spiral springs are seated, and a third



central slot  $c'$  to receive the longitudinal tie-wire E. The tie-plate C' at the sides of the bottom have their ends hooked over the frame B', or they may be secured thereto in any other suitable manner. The tie-plate shown in Figs. 1 to 5 is bent lengthwise of itself to form a groove  $c^2$ , which is intersected by the slots  $c$   $c'$ , and the securing-wire F passes through this groove between the plate and the coils of the springs and tie-wire, which are seated in the slots, thus securing the plate to the springs and tie-wire, and the latter has a bend or loop  $e$ , which embraces the securing-wire, and thus holds the plate from movement along the tie-wire, and thereby prevents the endwise displacement of the springs. The tie-plates can be placed above the top coils of the springs with their grooves projecting downwardly, as shown in Figs. 1 to 4, or they can be used in inverted position, as shown in Figs. 6, 7.

The tie-plate C<sup>2</sup> (shown in Figs. 8 and 9) is flat throughout, and the top coils of the spiral springs and the tie-wire are provided with bends or loops  $g$  and  $g'$ , which extend, respectively, through the end and central slots of the plate and are secured in the slots by the securing-wire F, which is passed between the bends and the plate. In said Figs. 8 and 9 the spring-coils and tie-wire have upwardly-projecting bends extending up through the slots in the plate; but this arrangement could be reversed and the bends extended downwardly through the slots and the securing-wire located beneath the tie-plate.

The tie-plates of either form can be cheaply made by stamping from sheet metal. The grooved tie-plate (shown in Figs. 1 to 5) obviates the necessity for bending the spiral spring-coils to seat them in the slots of the tie-plate, and is therefore desirable for the reason that the springs being of tempered wire are frequently broken in making the bends, thus adding to the cost of manufacture of the bottoms. The grooved tie-plate arranged with the groove depending, as shown in Figs. 1 to 5, is also desirable in that the bottom is free from upward projections and does not tear the mattress. The flat tie-plates (shown in Figs. 8 and 9) can be made at very small expense.

While the arrangement of the tie plates and wires above described is deemed preferable, the tie-plates shown and described could also be used to connect the springs in the rows running both longitudinally and transversely of the bottom.

I claim as my invention—

1. A spring bed-bottom comprising a support, upright springs secured thereon in rows, tie-plates arranged between and secured to the springs in adjacent rows running one way only of the bottom, all of said tie-plates being

parallel, and tie-wires arranged transversely of said tie-plates between the rows of springs connected by the tie-plates and secured to the several tie-plates so as to hold them from movement lengthwise or transversely of the tie-wires, substantially as set forth.

2. A spring-bottom comprising a support, upright springs secured thereon in rows, tie-plates arranged between and directly connecting the springs in adjacent rows running one way only of the bottom, tie-wires arranged transversely of said tie-plates between and parallel with the rows of springs connected by the tie-plates, and securing-wires running transversely of the tie-wires in the vertical planes of the springs for attaching the tie-plates to the tie-wires and holding the tie-plates from movement lengthwise of the tie-wires, substantially as set forth.

3. A spring-bottom comprising a support, upright springs secured thereon in rows, tie-plates arranged between the springs in adjacent rows and having end slots in which coils of the springs are seated, and intermediate slots, and tie-wires arranged between the rows of springs and having portions seated in the intermediate slots of the tie-plates, and means for securing the spring-coils and tie-wires in said slots and holding the tie-plates from movement lengthwise of the tie-wires, substantially as set forth.

4. A spring-bottom comprising a support, upright springs secured thereon in rows, tie-plates arranged between the springs in adjacent rows and having end slots in which coils of the springs are seated, and intermediate slots, tie-wires arranged between the rows of springs and having bends seated in the intermediate slots of the tie-plates, and securing-wires passing between the tie-plates and the coils of the springs and bends of the tie-wires to secure the parts together, substantially as set forth.

5. A spring-bottom comprising a support, upright springs secured thereon in rows, tie-plates arranged between the springs in adjacent rows, each tie-plate having a longitudinal groove intersected by three slots in the two end slots of which coils of the springs are seated, tie-wires arranged between the rows of springs and having bends seated in the intermediate slots of the tie-plates, and securing-wires passing through said grooves of the tie-plates between the same and the coils of the springs and bends of the tie-wires to secure the parts together, substantially as set forth.

Witness my hand this 1st day of October, 1904.

CHARLES VALLONE.

Witnesses:

E. C. HARD,

CHAS. W. PARKER.