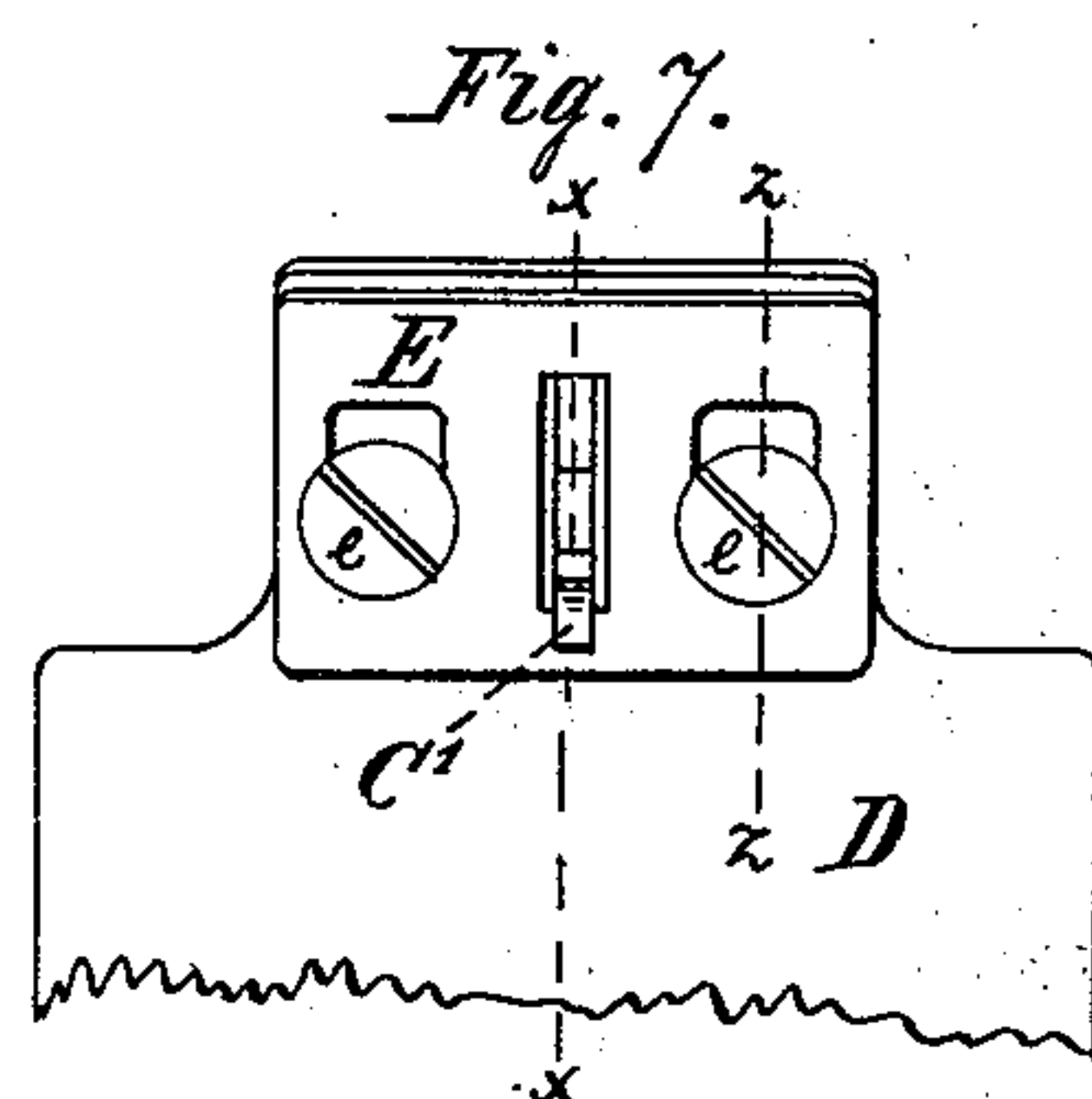
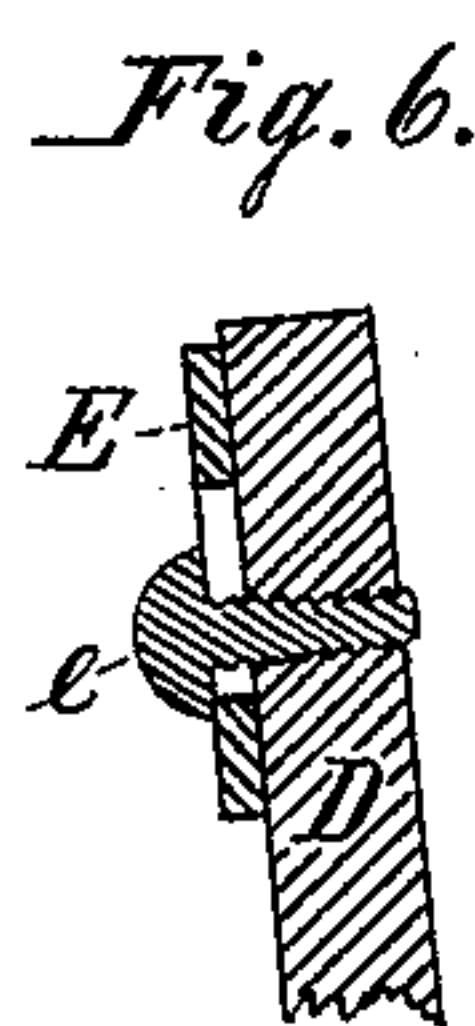
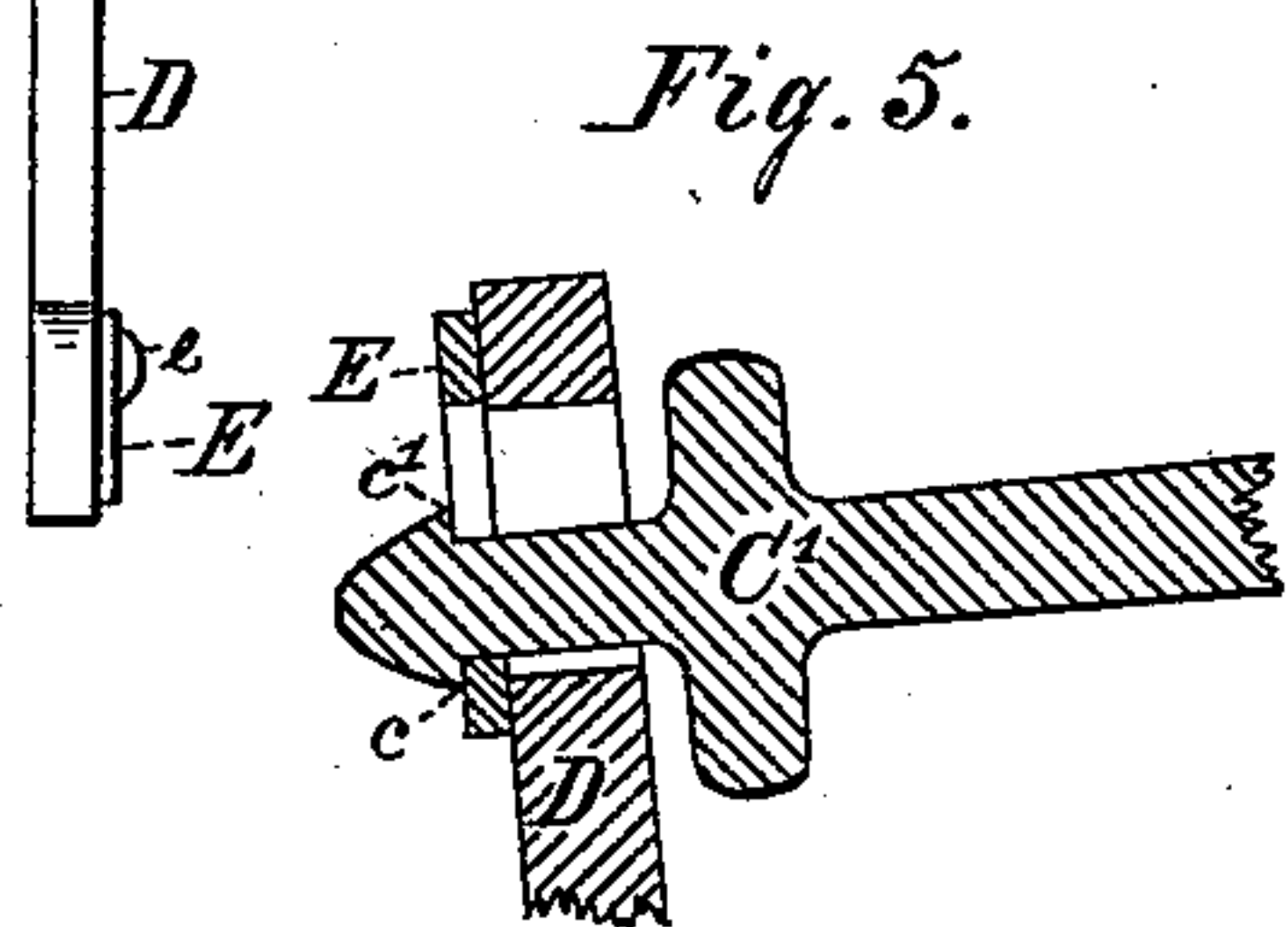
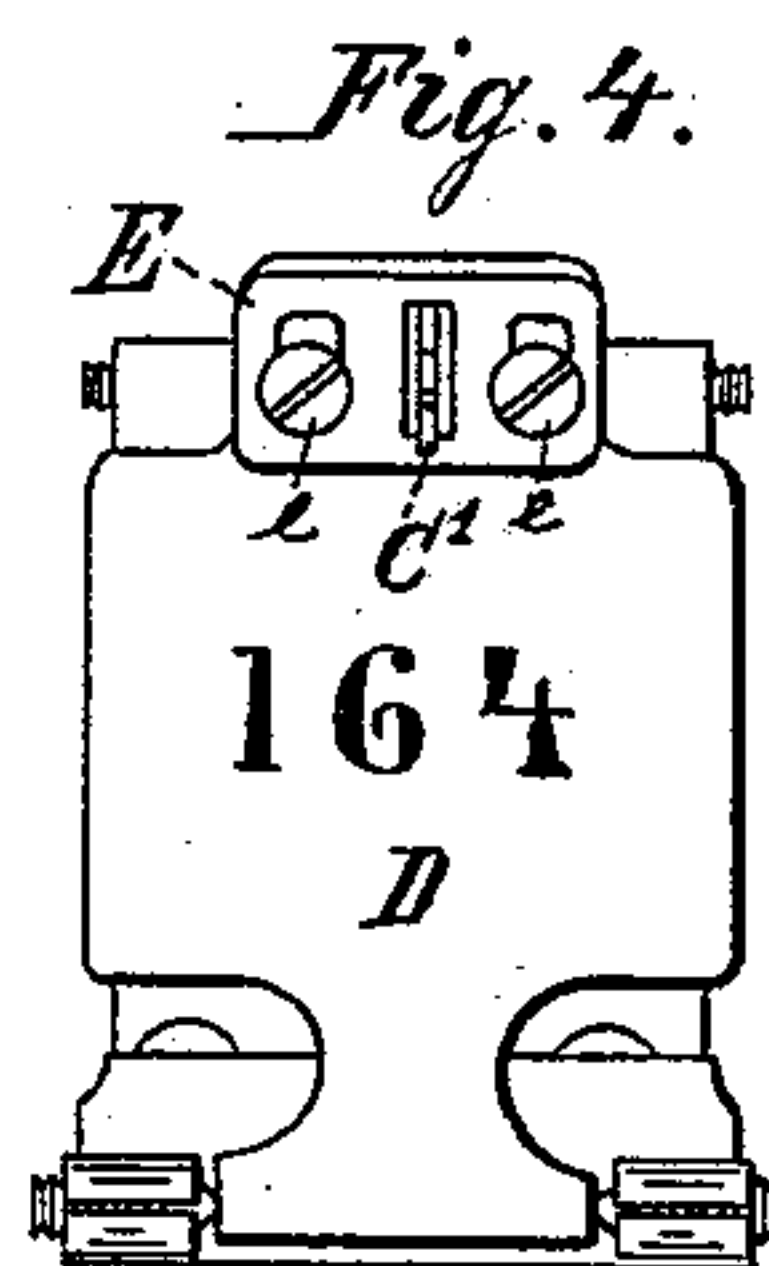
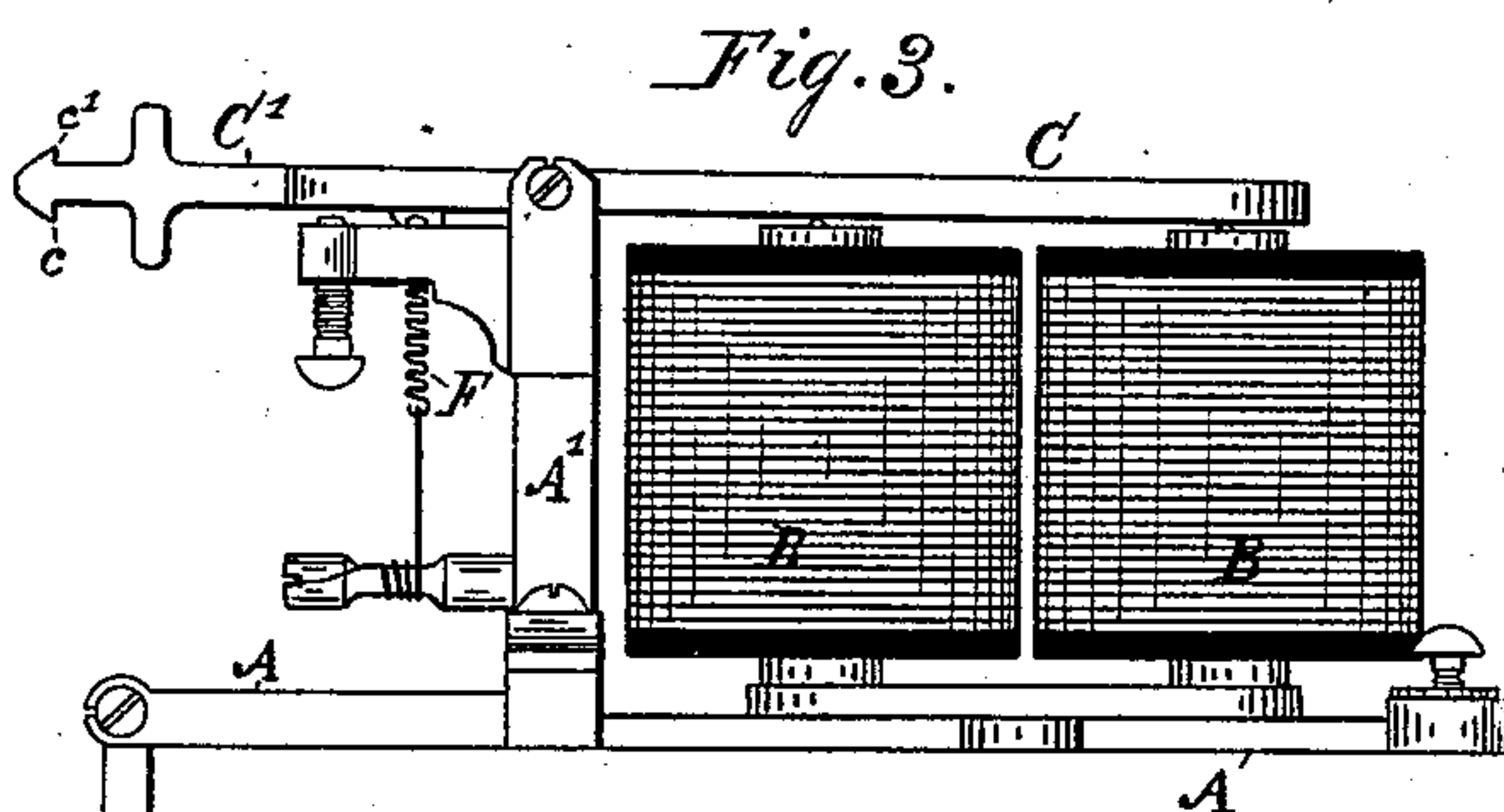
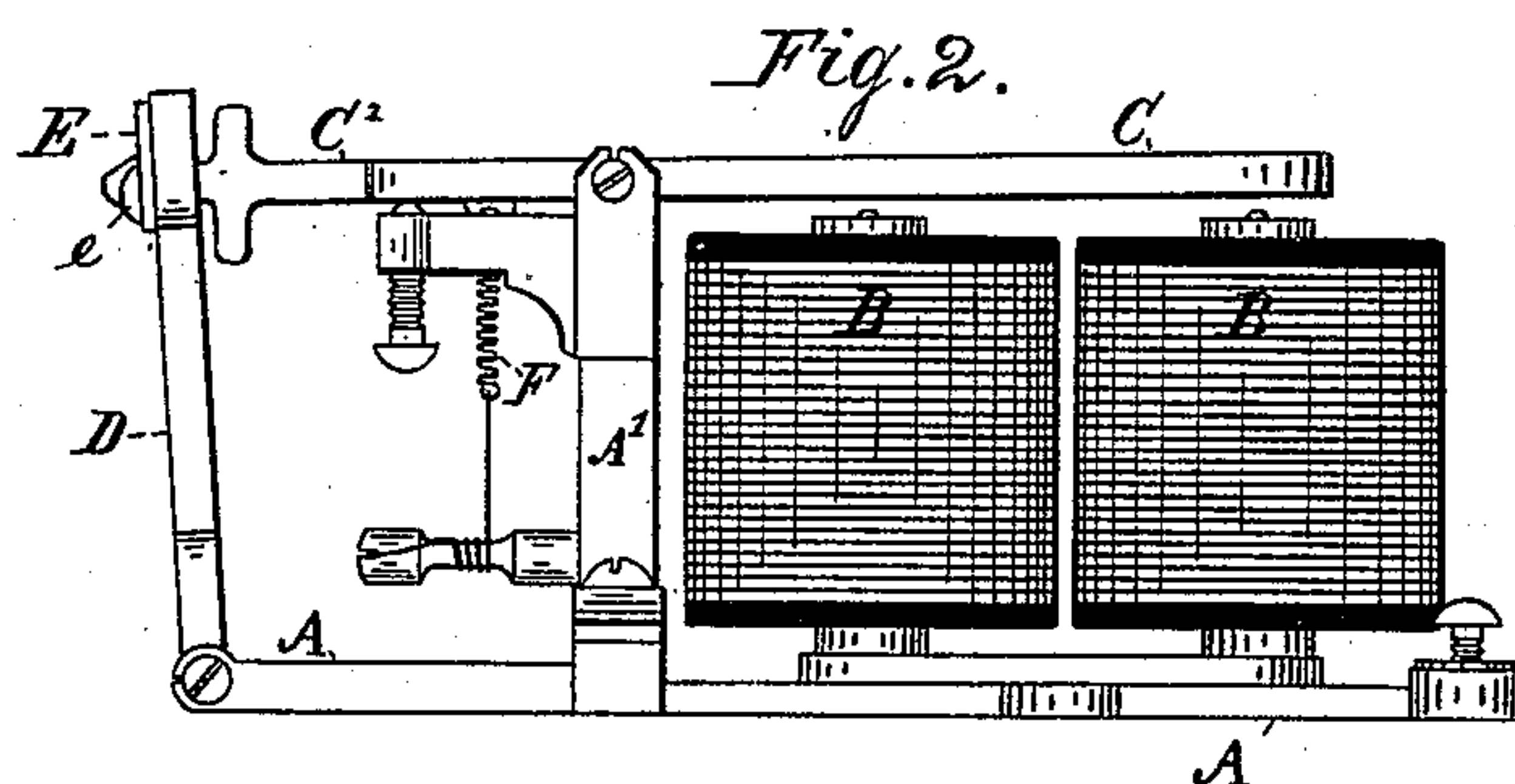
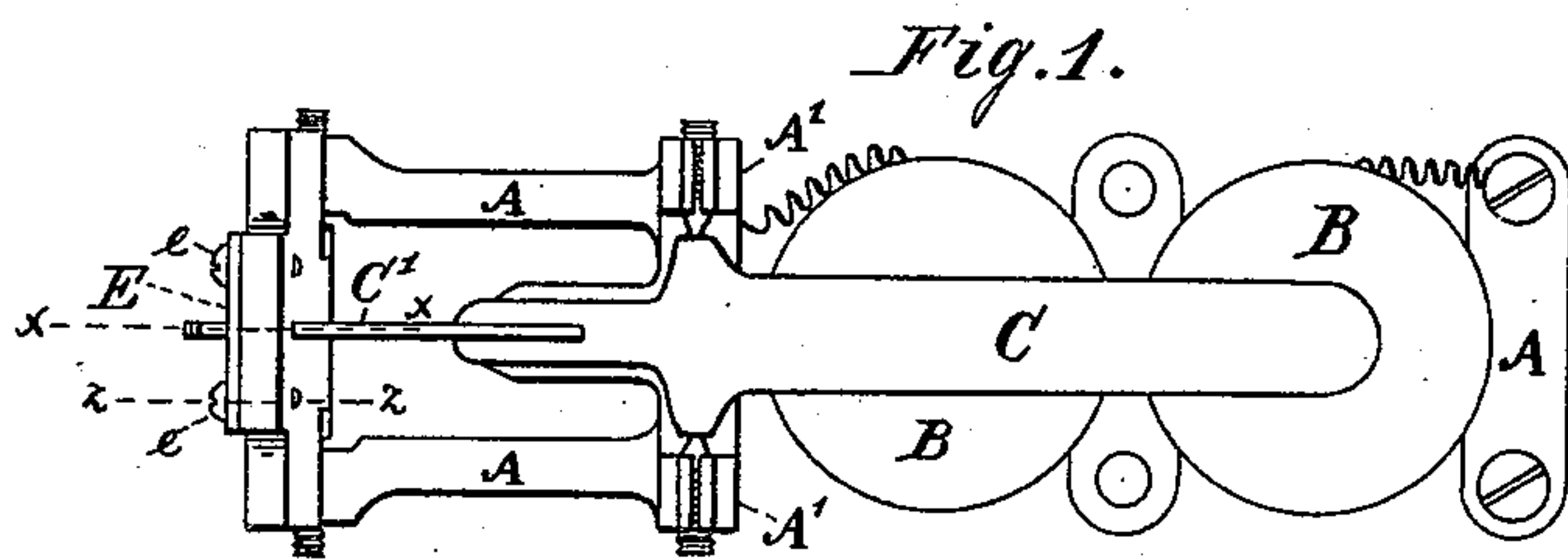


E. T. GILLILAND.  
Electrical Annunciator Drop.

No. 230,265.

Patented July 20, 1880.



WITNESSES.

James B. Lizius.  
R. P. Daggett

INVENTOR.

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PER

C. Bradford.  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

EZRA T. GILLILAND, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO GILLILAND ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

## ELECTRICAL ANNUNCIATOR-DROP.

SPECIFICATION forming part of Letters Patent No. 230,265, dated July 20, 1880.

Application filed October 27, 1879.

*To all whom it may concern:*

Be it known that I, EZRA T. GILLILAND, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Electrical Annunciator-Drops, of which the following is a specification, reference being had to the accompanying drawings, which are made part hereof, and on which similar letters of reference indicate similar parts.

Figure 1 is a top or plan view of an annunciator-drop embodying my invention. Fig. 2 is a side elevation thereof when the drop is set ready for use. Fig. 3 is a similar view when the operating force has been applied and the drop has fallen. Fig. 4 is a front elevation of the drop when set, as in Fig. 2. Fig. 5 is a sectional detail on the dotted line *xx* in Figs. 1 and 4. Fig. 6 is a sectional detail on the dotted line *zz* in Figs. 1 and 4. Fig. 7 is a detail elevation, on an enlarged scale, of the catch-plate on the face of the drop.

The object of my invention is to produce an electrically-operated drop for use in the offices of telephonic exchanges and similar places, which will indicate a "call" from the person whose line it is placed in connection with, and which may be operated either by closing an open electrical circuit or opening a closed circuit connected to the electro-magnet. This I accomplish by means of a simple adjustment consisting of a catch and a catch-plate, or their equivalents, one of which may be varied in relation to the other, so that one hook of a catch may engage with the catch-plate in one position, and another hook of the catch, or the same one reversed, may engage with the catch-plate in another position, said engagement being released by the action of the electrical current upon the electro-magnet, as stated.

In the drawings, the portion marked A represents the frame upon which the coils of an electro-magnet, and also, preferably, the various other parts necessary to the successful operation of the device, are mounted; B, the coils of the magnet; C, a vibrating armature mounted upon horizontal bearings on the upwardly-projecting part A' of the frame A; C', an arrow-head-shaped device attached to the forwardly-projecting arm upon the vibrating

armature which forms the catch; D, the drop-plate, which serves the purpose before indicated; E, an adjustable catch-plate attached to the drop-plate D, with which the catch C' engages; and F, a spring which holds the catch down when not raised by the action of the electro-magnet.

In the form shown the operation of this device is as follows: The electrical circuit being left open, the action of the spring F, or of a corresponding weight, holds down the arm carrying the catch C', so that the hook *c* engages with the lower side of the catch-plate E and thus secures the drop D in position. Upon an electrical current being applied to the line the electro-magnet is rendered operative and attracts the vibrating armature to itself, thus raising the catch and releasing the drop-plate, which thereupon falls. To reverse this so that the device would be operated by the opening of a closed circuit, it is only necessary to lower the plate E upon the screws *ee* until its upper side will engage with the upper hook, *c'*, of the catch, when the same is raised by the armature being drawn into contact with the magnet. Upon the current being taken off the spring would draw the catch down and the drop would fall, as before.

If it is desired, the catch may be upon the drop and the catch-plate attached to the arm of the armature, or the catch may be adjustable and the plate stationary, without in any degree avoiding the scope of my invention, though I prefer the construction shown, as being, in my opinion, somewhat cheaper and more convenient.

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

1. An annunciator-drop consisting, essentially, of an electro-magnet, a vibrating armature, and a drop-plate, said plate being secured in an upright position to said armature by means of a catch and catch-plate, one or both of which are adjustable, as specified, so that said drop may be operated either by closing an open electrical circuit in connection therewith, or by opening a closed circuit, substantially as specified.

2. The combination of the electro-magnet,

the vibrating armature C, having catch C' rigidly attached thereto, and the drop D, having the adjustable plate E, all arranged as shown, and operating substantially as and for the purpose specified.

3. In an annunciator-drop, an adjustable catch mechanism by means of which either an open or a closed electrical circuit can be employed in releasing the drop, substantially as specified.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 20th day of October, A. D. 1879.

EZRA T. GILLILAND. [L. S.]

In presence of—

C. BRADFORD,  
H. B. GILLET.