

No. 622,075.

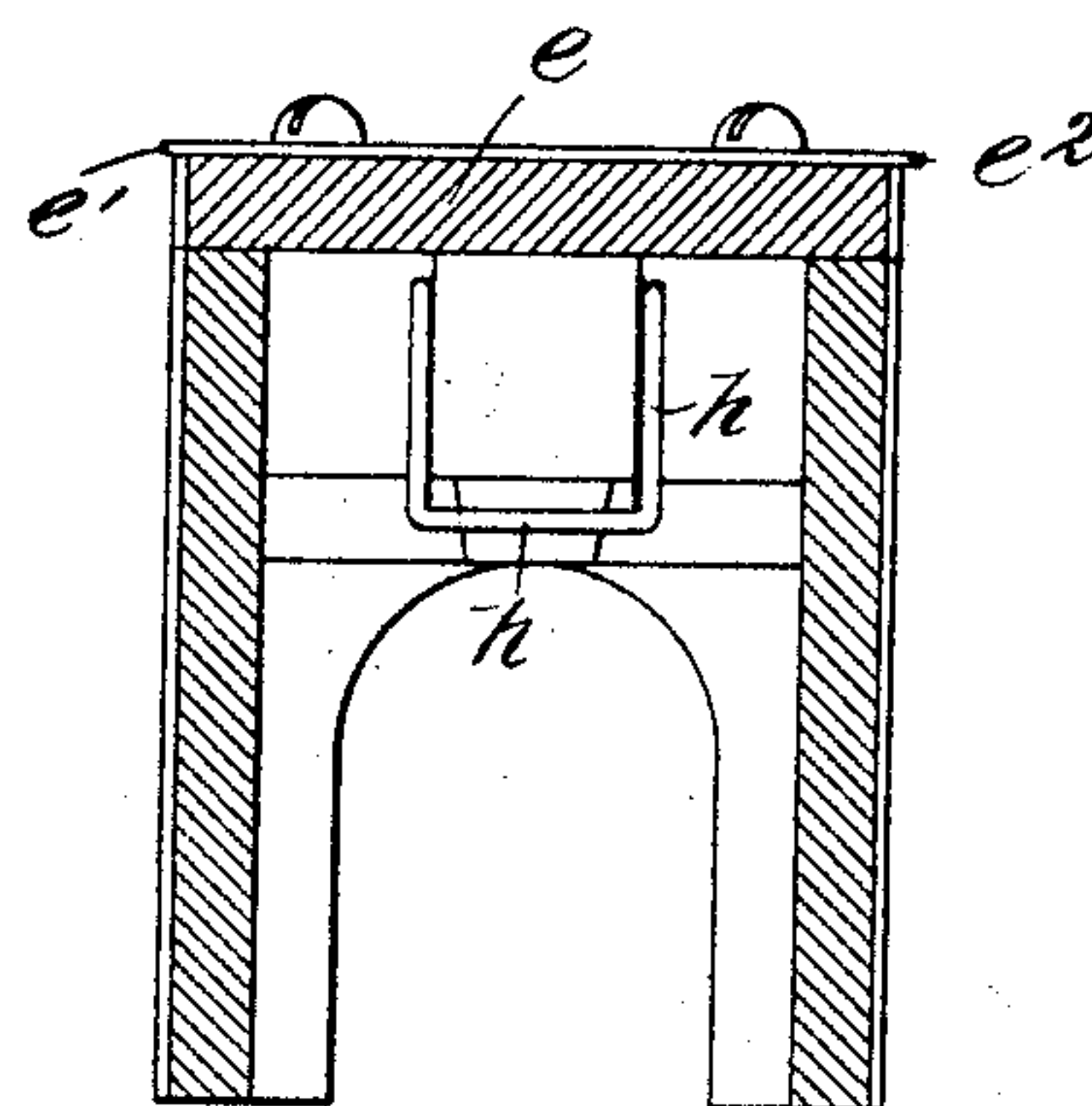
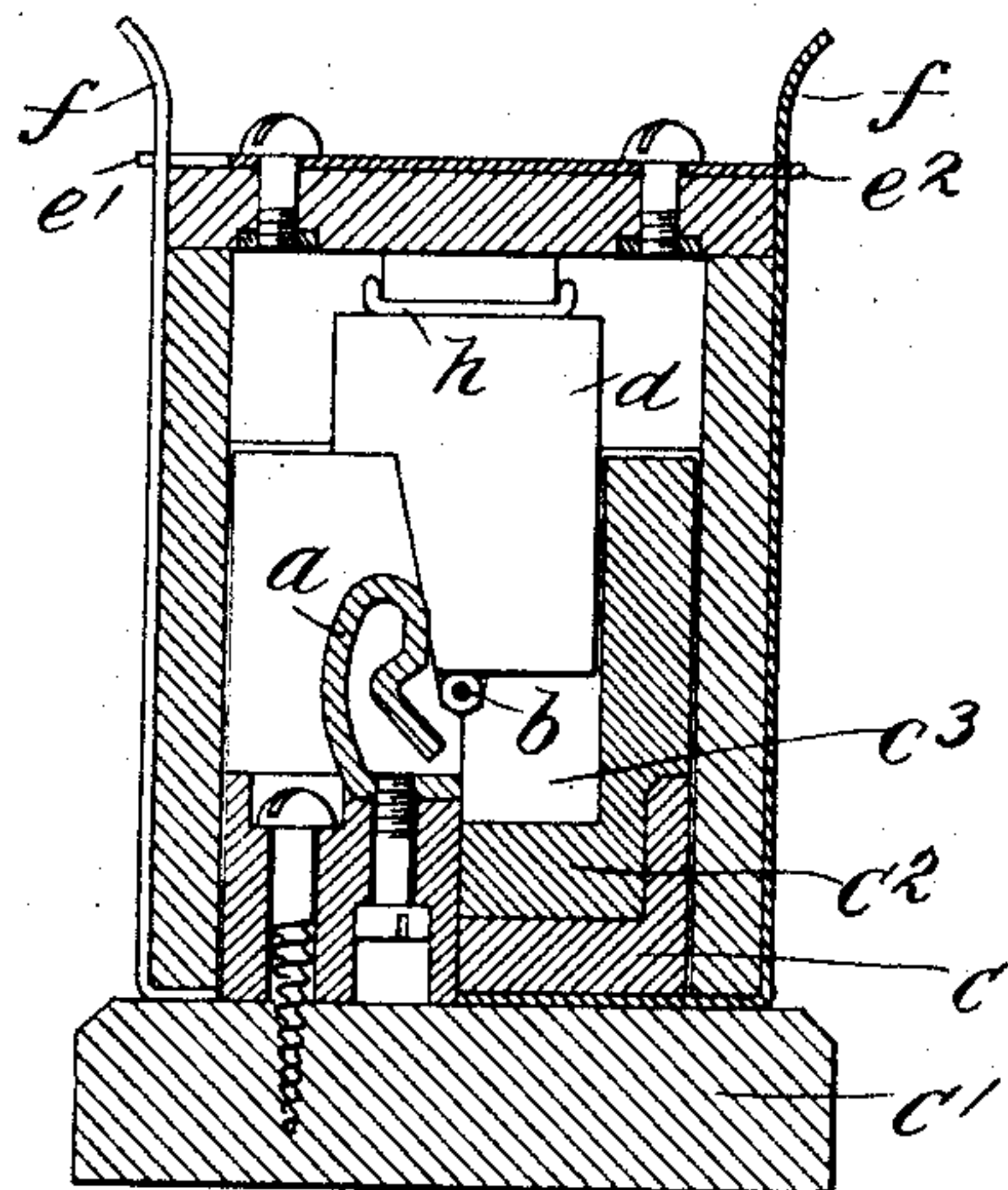
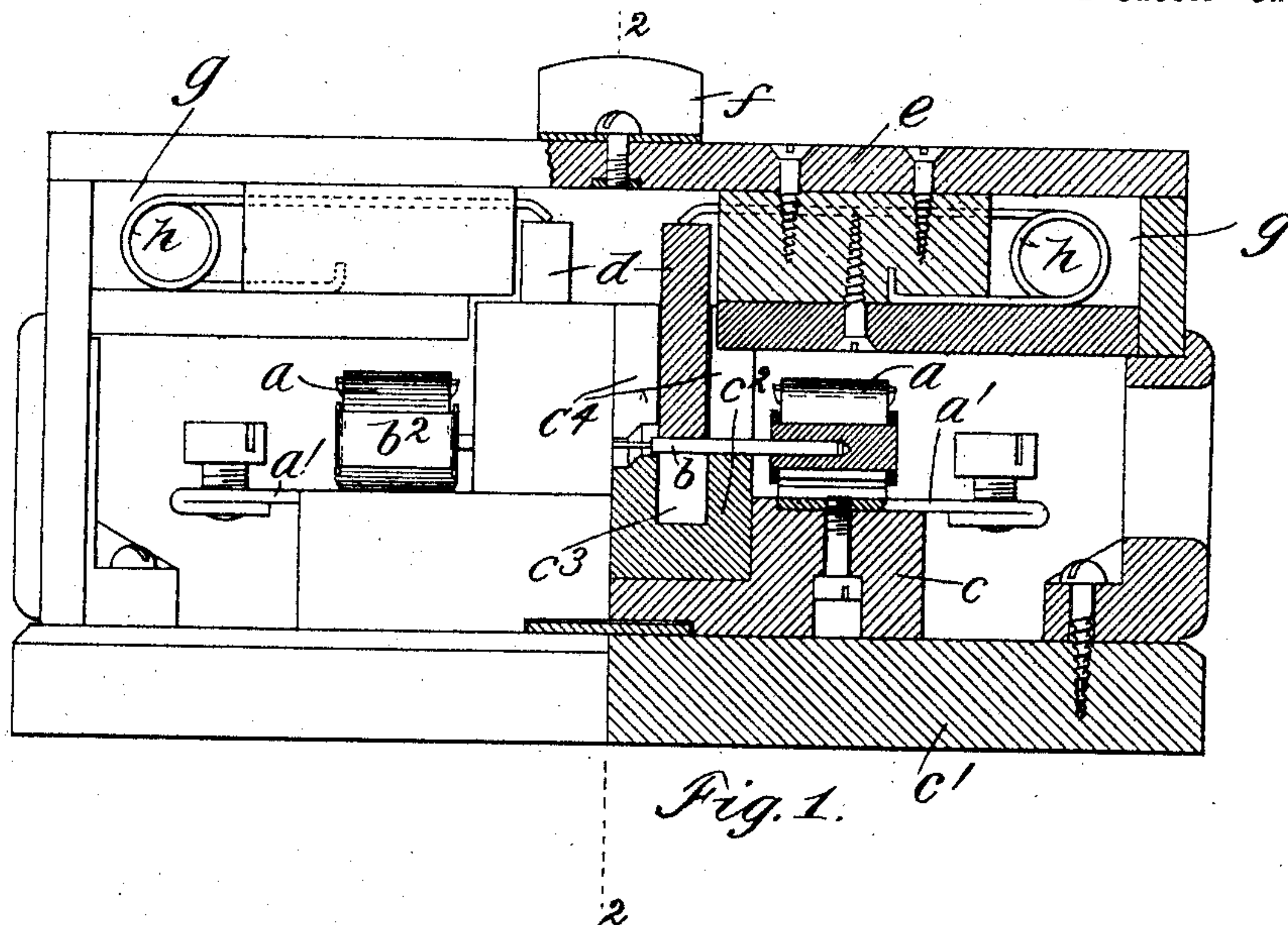
Patented Mar. 28, 1899.

E. B. W. REICHEL.
PROTECTIVE FUSE.

(Application filed Sept. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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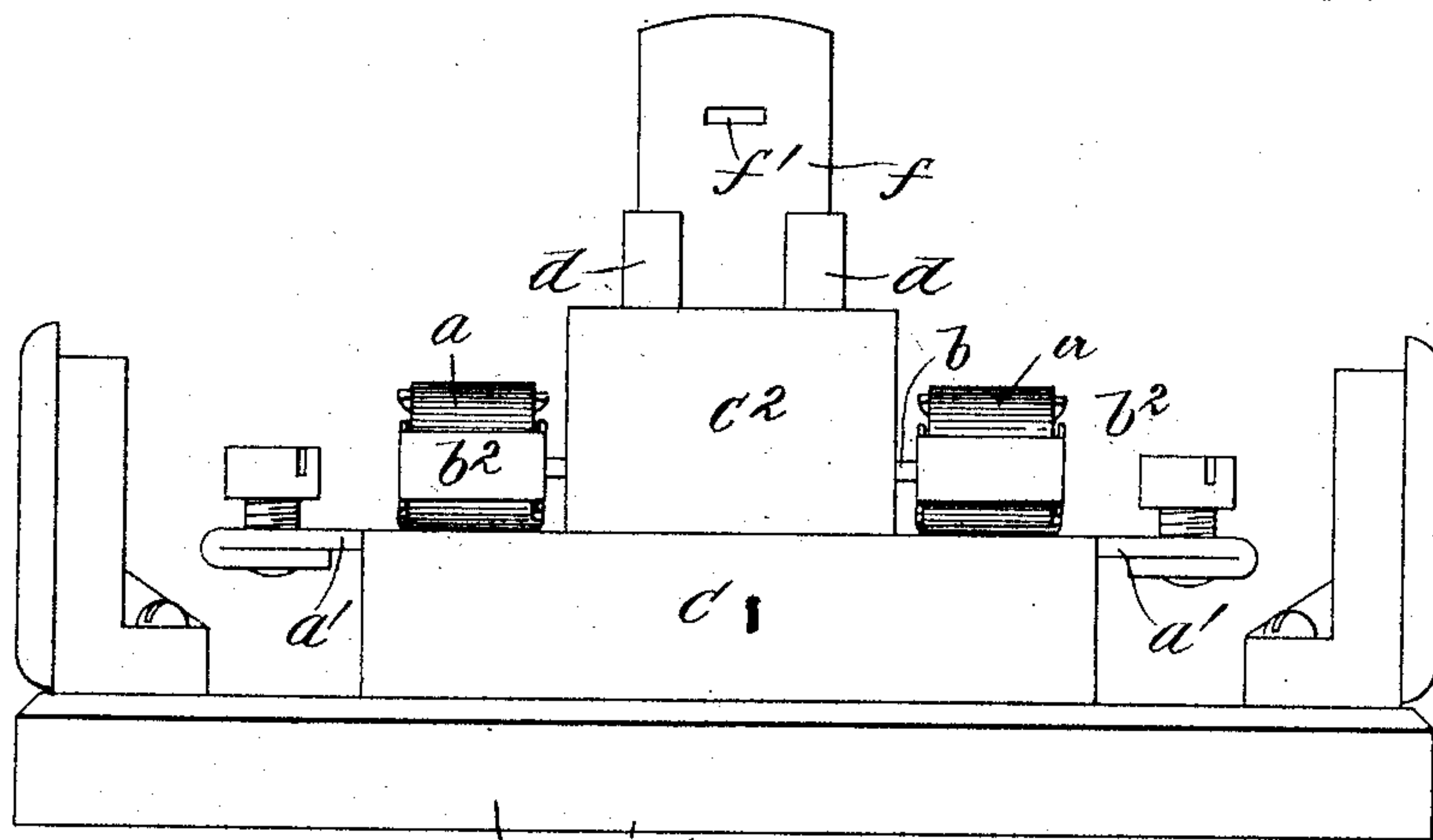
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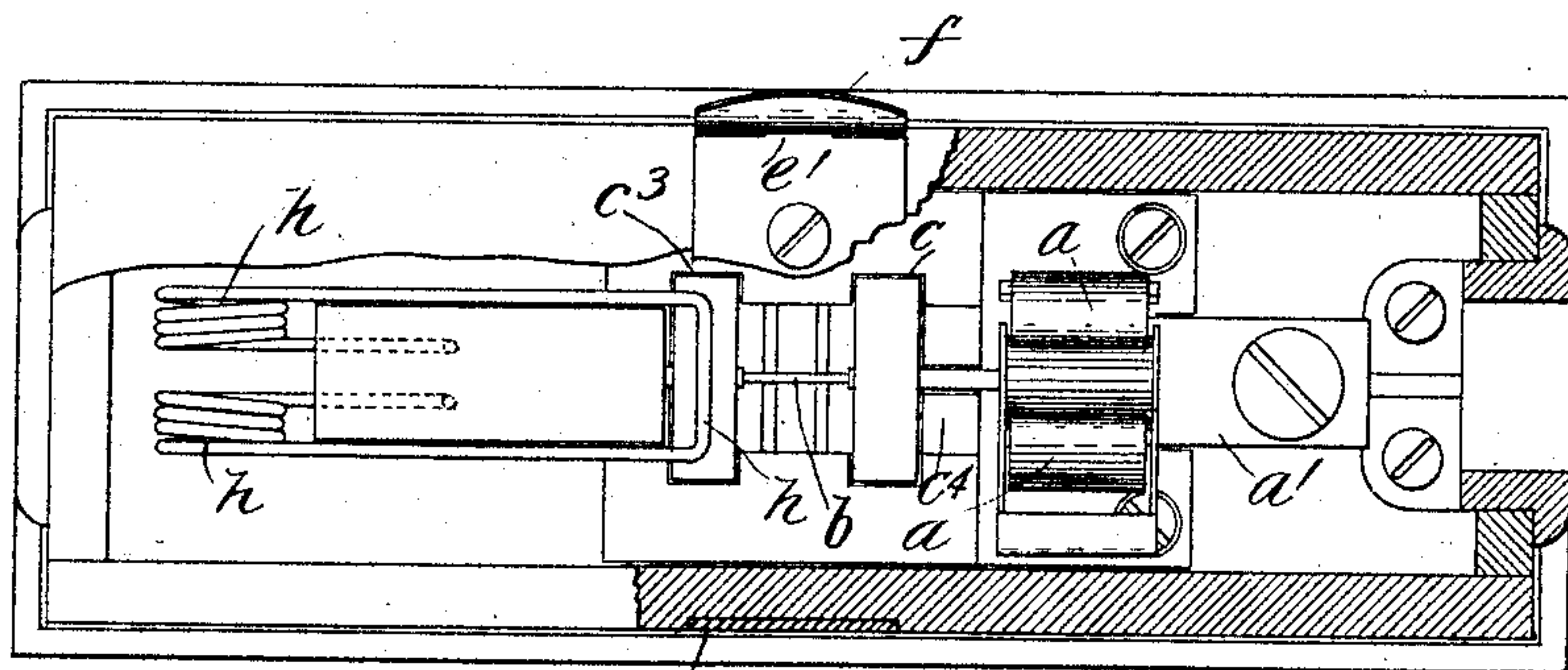
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2 Sheets—Sheet 2.



c1 Fig. 4.



f Fig. 6.

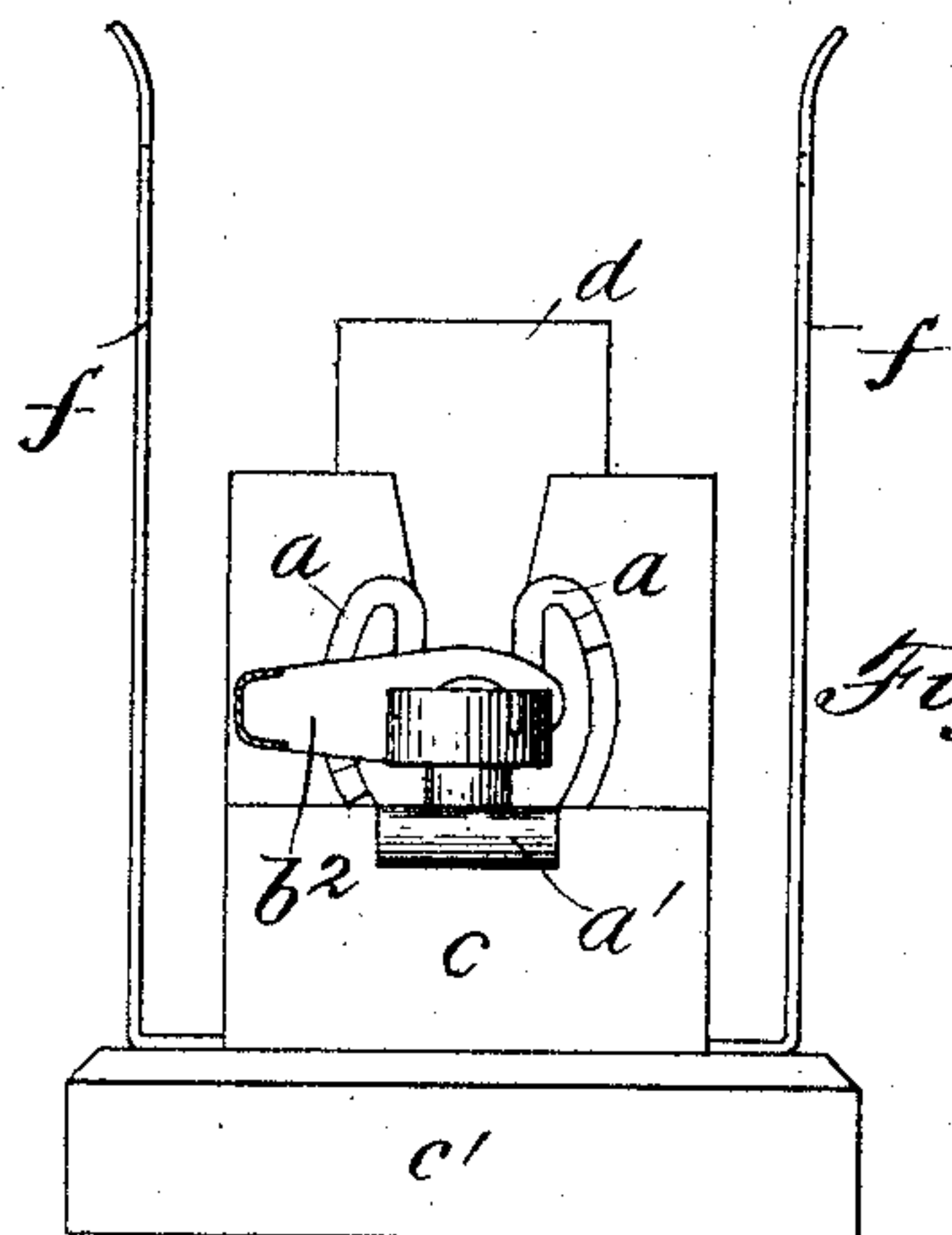


Fig. 5.

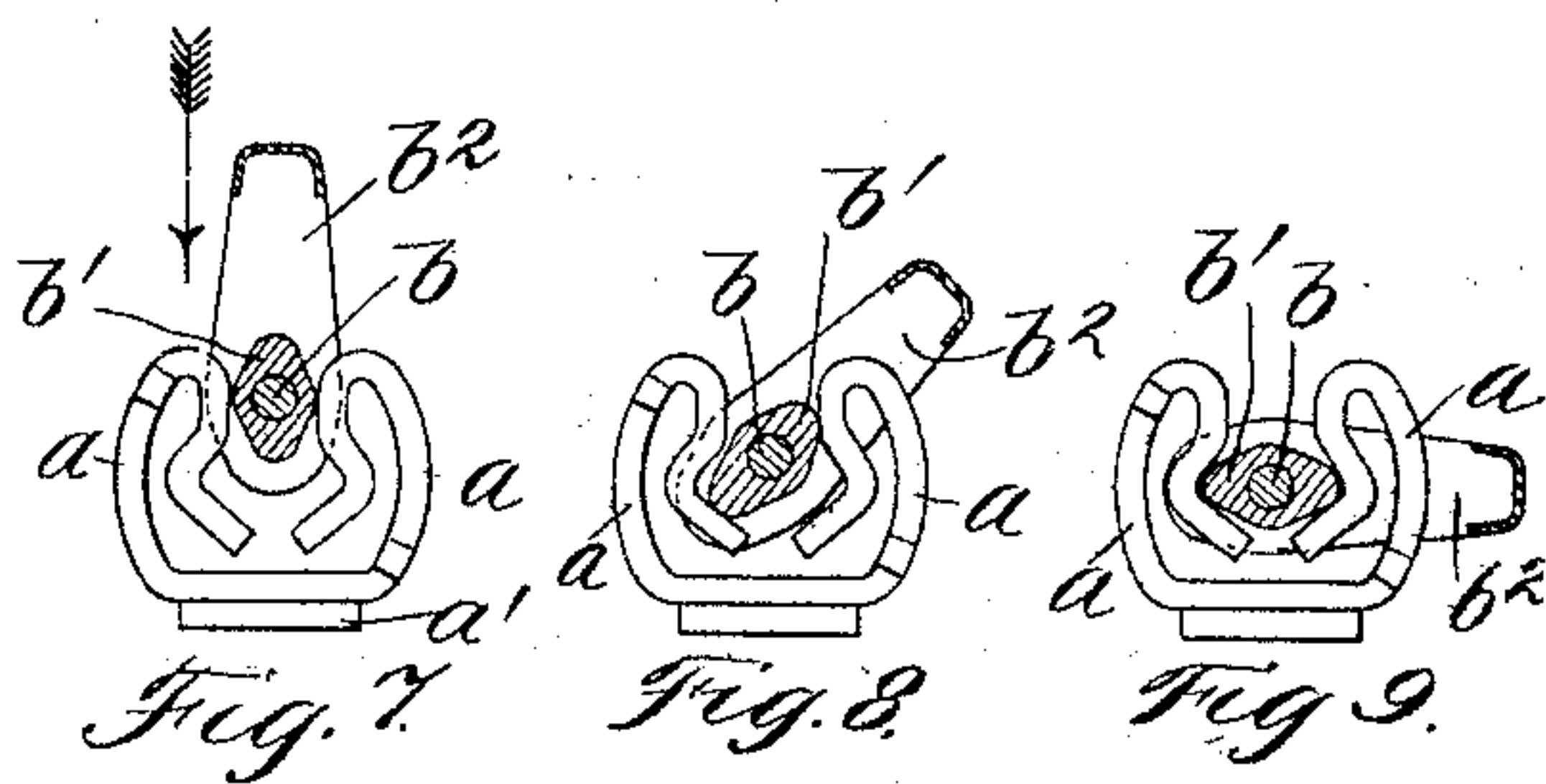


Fig. 7.

Fig. 8.

Fig. 9.

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UNITED STATES PATENT OFFICE.

EMIL BERTHOLD WALTER REICHEL, OF BERLIN GERMANY, ASSIGNOR
TO THE SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA, OF
CHICAGO, ILLINOIS.

PROTECTIVE FUSE.

SPECIFICATION forming part of Letters Patent No. 622,075, dated March 28, 1899.

Application filed September 29, 1898. Serial No. 692,167. (No model.)

To all whom it may concern:

Be it known that I, EMIL BERTHOLD WALTER REICHEL, a subject of the Emperor of Germany, residing at Berlin, Germany, have
5 invented a certain new and useful Improvement in Protective Fuses, (Case No. 161,) of which the following is a full, clear, concise, and exact description.

My invention relates to fuses, and has for
10 its object the construction of a fuse-mounting, in combination with coöperating parts, whereby the arc resulting when the fuse is blown is limited in its travel.

Spring mechanism is preferably employed
15 for placing insulating-blocks within the path of the arc to limit its travel, the apparatus being so constructed that the terminals of the fuse and the spring mechanism for operating the aforesaid blocks are thoroughly
20 protected from the arc. I surround that portion of the fuse liable to be blown out by a tubular wall composed, preferably, of insulating material, the terminals of the fuse being upon the exterior of the wall, while the
25 insulating-blocks for obstructing the progress of the arc are placed between that portion of the fuse which is initially destroyed and the terminals. Thus the terminals are thoroughly protected from the arc and the result-
30 ing metallic vapor. I provide a protecting cover or cap for the fuse parts, which serves more thoroughly to protect the metallic parts, the spring for actuating the insulating-blocks being preferably contained within protecting
35 inclosures upon the interior of the cover. In order, therefore, to replace the fuse, it is only necessary to remove the covers, whereupon the blocks may be readily withdrawn and the fuse inserted.

40 I will describe my invention more particularly by reference to the accompanying drawings, which illustrate the preferred embodiment thereof.

Figure 1 is a side elevation, partially in section, of the structure of my invention, one
45 wall of the cover being removed to reveal the interior mechanism. Fig. 2 is a cross-sectional view on line 2 2 of Fig. 1. Fig. 3 is a view in cross-section of the cover. Fig. 4 is
50 a side elevation of the structure, the cover

being removed. Fig. 5 is an elevation of the structure as shown in Fig. 4. Fig. 6 is a plan view of the structure as shown in Fig. 1, certain parts being broken away. Figs. 7, 8, and
5 9 illustrate the fuse-terminals that I prefer to employ.

Like letters indicate like parts throughout the different views.

The fuse-terminals *a a* are preferably in the form of spring-clips, as shown in Figs. 7, 8, and 9. The fuse *b* is provided with cam-shaped ends *b'*, which when placed in a vertical position slip between the clips, handles *b²*
60 being employed to turn the ends *b'* into the position shown in Fig. 9, whereby a firm contact is made between the fuse and its terminals without the aid of binding-screws. The
65 terminals *a a* are provided with extensions *a' a'*, which support binding-screws provided for the purpose of connecting the conductor to be protected with the fuse-terminals. The
70 terminals are mounted upon an insulating-base *c*, composed, preferably, of porcelain, this base in turn being mounted upon an insulating-base *c*.

75 I embed a square tubular portion *c²* within the base *c*, this tubular portion being constructed, preferably, of fireproof material, the fuse passing through the walls of the tube and being disposed in a plane practically at
80 right angles to the bore of the tube. The tube has recesses *c³ c⁴*. The recesses *c³* receive the slides *d d* and extend below the fuse to be protected. The recesses *c⁴* permit of
85 the insertion of the fuse between the terminals *a a*. The slides *d d* preferably rest upon the top of the fuse. The parts supported upon the base *c'* are protected by a cover *e*,
90 the cover being provided with lugs *e' e²*, which engage apertures *f'*, provided in the springs *f f*, carried by the base *c'*. Inclosing receptacles *g g* are carried by the cover. Within
95 these receptacles coiled springs *h h* are contained, the ends of the springs only projecting through slots to the center of the top portion
100 of the cover, where they engage the slides when the cover is placed in position. Thus spring-pressure is only exerted upon the slides when the cover is in position. In replacing a fuse the cover is removed, the slides being

at once relieved of the spring-pressure, whereupon they may readily be removed. Those portions of the fuse which are engaged by the slides are preferably made thicker than the fuse portion between the slides, the arc frequently consuming only the thinner intermediate portion. If, however, the arc should travel farther, the springs *h h* will depress the slides into the lower portions of the recesses *c³*, the further travel of the arc toward the fuse-terminals being thus effectually prevented. It will be noticed that by this construction all of the permanently-placed metal entering into the construction of the fuse-mounting is thoroughly protected from the action of the arc.

It is obvious that changes may readily be made in the herein-described structure without departing from the spirit of the invention, and I do not, therefore, desire to be limited to the precise construction shown; but,

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

1. The combination with a fuse connected between fuse-terminals, of a base for supporting the terminals, a slide engaging the fuse, a cover for protecting the fuse parts, a spring carried by the cover adapted when the cover is in place to engage the slide and exert thereon pressure, and an inclosing receptacle carried by the cover containing a portion of the spring, another portion of the spring extending through the receptacle and engaging the slide, substantially as described.

2. The combination with a fuse connected

between fuse-terminals, of a base for supporting the terminals, a slide engaging the upper portion of the fuse, a cover for protecting the fuse parts, a spring carried by the cover adapted when the cover is in place to engage the slide and exert thereon pressure, an inclosing receptacle carried by the cover containing a portion of the spring, another portion of the spring extending through the receptacle and engaging the slide, and a tubular chamber through which the fuse passes, said chamber being provided with a recess for the slide, the said recess extending below the fuse, substantially as described.

3. The combination with a fuse connected between fuse-terminals, of a base for supporting the terminals, slides *d d* engaging the upper portion of the fuse, a cover for protecting the fuse parts, springs *h h* carried by the cover adapted when the cover is in place to engage the slides and exert thereon pressure, inclosing receptacles for said springs carried by the cover, each containing a portion of the spring, another portion of each spring extending through its receptacle and engaging its slide, and a tubular chamber through which the fuse passes, said chamber being provided with two recesses for the slides, said recesses extending below the fuse, substantially as described.

In witness whereof I hereunto subscribe my name this 13th day of September, A. D. 1898.

EMIL BERTHOLD WALTER REICHEL.

Witnesses:

C. H. DAY,

W. HAUPT.