

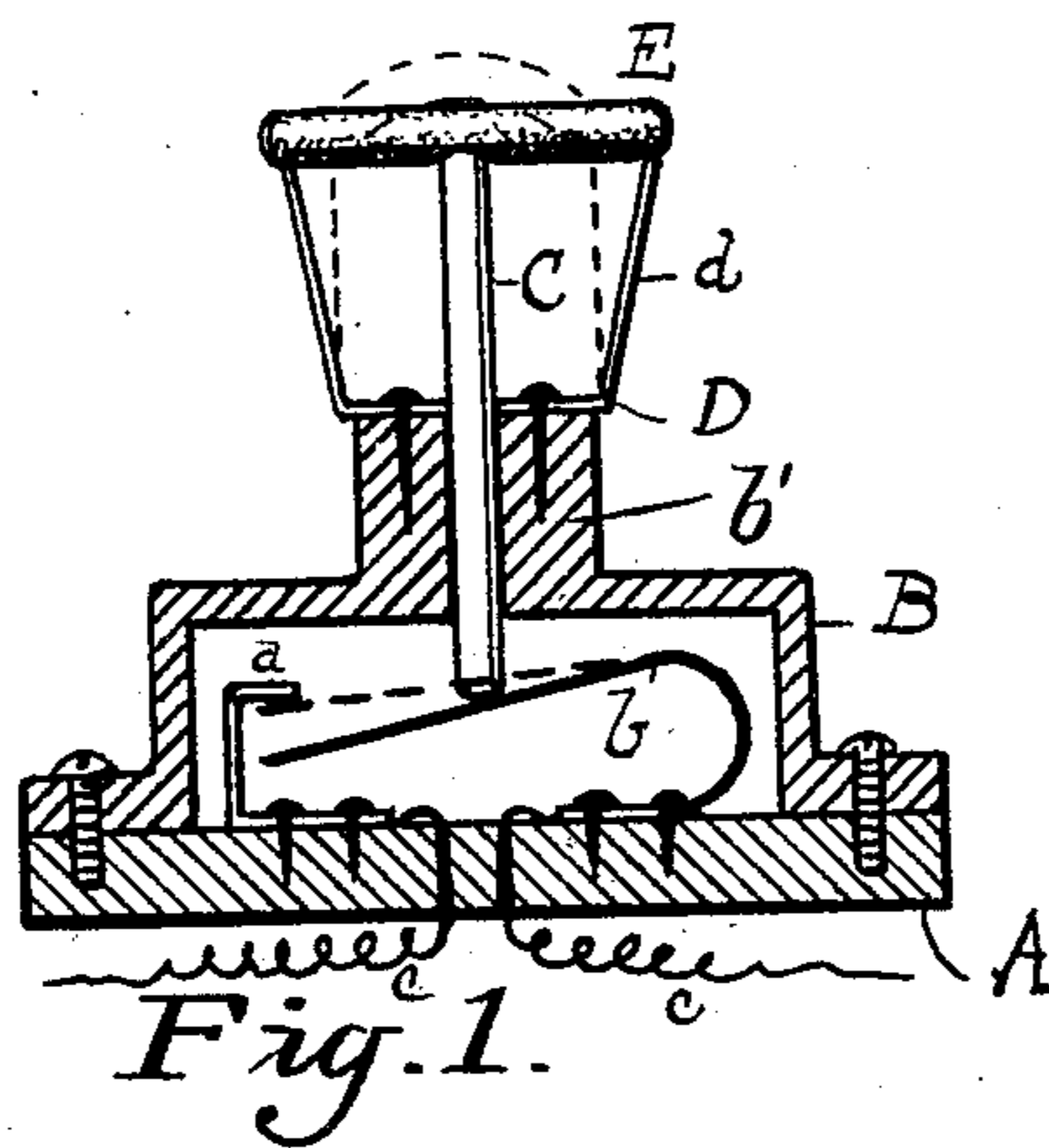
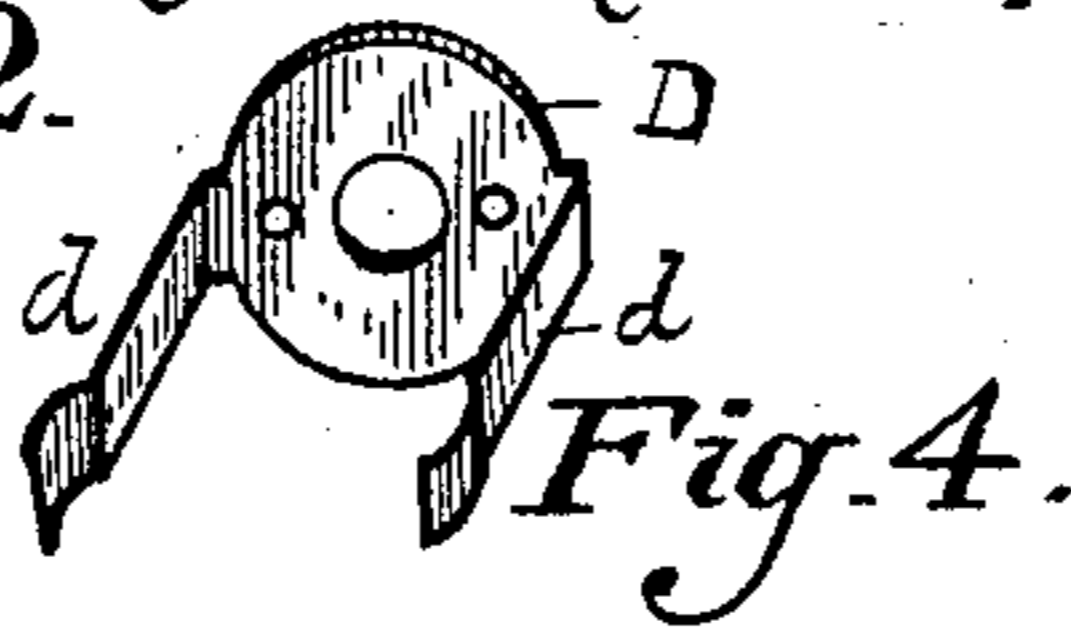
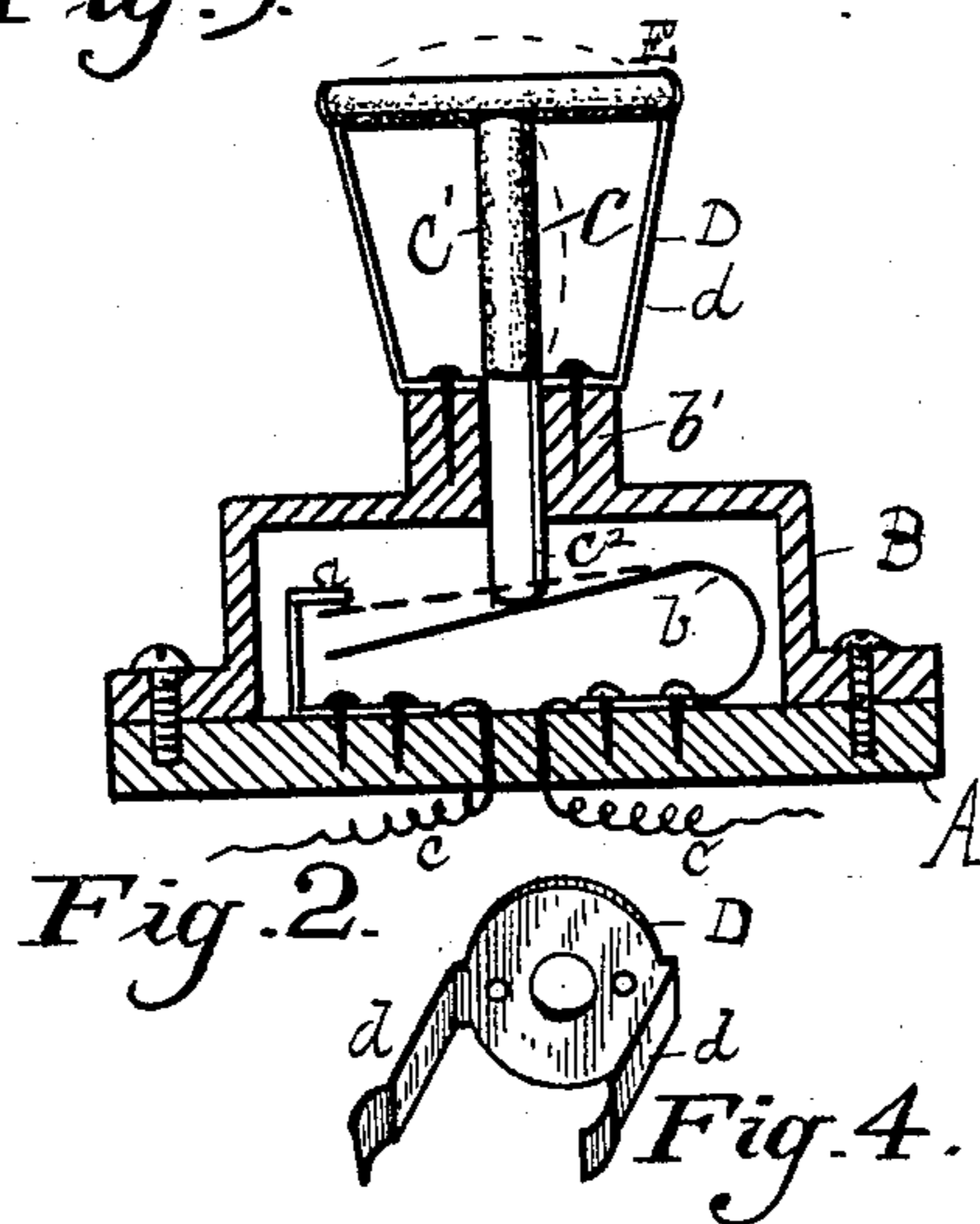
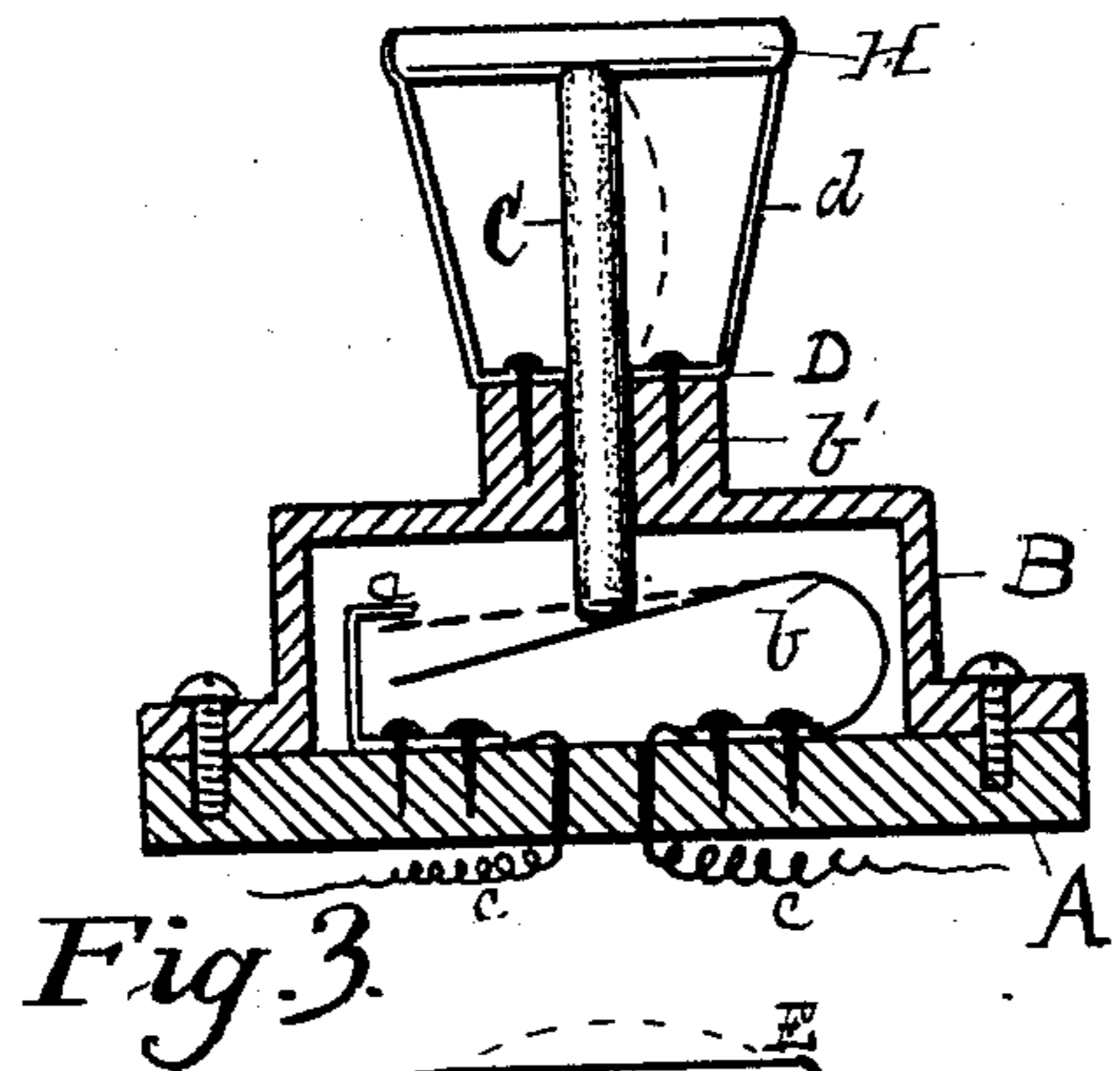
No. 698,383.

Patented Apr. 22, 1902.

F. WILKE.
ELECTRIC CIRCUIT CLOSING DEVICE.

(Application filed June 23, 1899.)

(No Model.)



Witnesses,

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UNITED STATES PATENT OFFICE.

FERDINAND WILKE, OF AKRON, OHIO, ASSIGNOR OF THREE-FOURTHS
TO JOHN GREYHER, SMITH G. TIBBS, AND LOUIS A. WECHT, OF
AKRON, OHIO.

ELECTRIC-CIRCUIT-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 698,383, dated April 22, 1902.

Application filed June 23, 1899. Serial No. 721,588. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND WILKE, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Electric-Circuit-Closing Devices; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electric-circuit-closing devices, and is an improvement in the line of invention shown and described in the application of Ferdinand Wilke, Serial No. 712,230, April 8, 1899.

In the accompanying drawings, Figure 1 is a sectional elevation of a form of device in which the fusible material is arranged at right angles to the plunger and engaged thereby at its middle. Fig. 2 is a sectional elevation of a modification of the device, wherein the plunger consists in part of fusible material; but the device otherwise is the same as in Fig. 1. Fig. 3 is a sectional elevation of the device, in which the plunger is of fusible material and is engaged by a rigid part at its outer end corresponding to the fusible sticks in Figs. 1 and 2. Fig. 4 is a perspective elevation of the bracket for holding the outer piece or part, which confines the plunger.

In the several views there are certain parts which are the same in all, consisting of the box or casing composed of the base portion A and the cap portion B, fixed thereto. Within the chamber of these is a fixed electric contact-point *a* and a flat bent spring *b*, adapted to spring into contact with *a* when the spring is liberated by C to enable this to occur. The electric circuit is completed through the wires *c*, which may connect with a battery or other source of energy and in the circuit of which there is located a suitable alarm device of any kind, as a bell or the like, and all of which in itself is not new.

The cap B has a neck *b'*, and to or upon this neck is secured a suitable bracket D, preferably of good spring metal and having the

shape, preferably, also shown in Fig. 4. As thus constructed the bracket D is adapted to be fixed securely to the said neck, and the part or member which depresses the plunger and the spring *b* is detachably connected with the extremities of the spring-arms *d*. In Fig. 1 the plunger or part C bears upon the spring *b* at its inner end and is engaged by what, in this instance, is a stick E of fusible material of any desirable sensitiveness, so that it will soften and yield at high or comparatively low degrees of temperature. It may be made very sensitive or less so, as the place and occasion may require, and the character of this material is subject to considerable variation, both as to kind and quality. It is assumed that the spring *b* in any event has such spring, however the casing may be located, whether upon the side of a wall, on the ceiling, or on the floor, that it will press the bolt C outward and force itself into electrical contact with the point *a* when the stick E surrenders under the proper degree of heat. Of course when this occurs and the circuit is closed the alarm will be sounded and all the purposes of this device will have been accomplished. Then to reset the device as the stick E is straightened and cools off the same stick can be replaced and the device be put in condition for use again, as before. Any suitable spring having the function of spring *b* and any equivalent arrangement of bolt C and which will serve the same purpose may be adopted without departing from the spirit of the invention, and this is true as to the several Figs. 1, 2, and 3.

In Fig. 2 I show a modification of the invention in which the plunger or part C is sectional, there being in this instance a short piece of fusible material C', supplementing the bolt *c*² below and engaging the fusible stick E. This makes the device additionally sensitive and is an obvious modification of Fig. 1.

In Fig. 3 the invention is somewhat reversed as to the plunger and its engaging stick, the plunger C in this case being of fusible material and the stick H of fixed rigidity, whether it be of metal or other material which heat

will not affect in its working relations. In order that a fusible plunger may be used, I have reduced the depth of the neck *b'* of the casing B, so as to expose more of the plunger than in Fig. 1, and thus promote its action under heat.

Obviously still other modifications and changes will suggest themselves to the mind and which I might particularize in this connection, but I do not deem it necessary to do so.

It will be seen that the fusible material in all the views has sufficient external exposure without the casing to make it responsive to the temperature of the room where the device is located and where it is not affected by being inclosed.

I have for convenience referred to the parts C and G as a "plunger," and so they are, and these identical parts may be used, as shown, or other parts, though differently constructed and arranged but having the same function, may be used, if preferred, and keep within the spirit of the invention. Indeed, any member of whatever shape that will act in the place of the plunger shown, whether it be round, square, flat, or of other cross-section and of whatever material, if it will respond to the weakening or surrender of the fusible material and so relax its pressure as to enable the spring *b* to close the circuit, it is regarded as a "plunger" in the sense of the word

as herein used and is clearly within my invention. Neither do I confine myself to the shape of the casing or box here shown nor to the shape of the bracket for supporting the transverse stick, as changes of different kinds may be made in these parts without departing from the invention, and the fusible stick or member may be wholly or in part of fusible material.

What I claim is—

1. In an electric-circuit-closing device, means to keep the circuit open consisting of a contact-spring and a circuit-closing point to be engaged by said spring, a plunger operatively engaged with said contact-spring, a pair of spring-arms and a part engaged at its ends by said arms and at its middle by said plunger, substantially as described.

2. In an electric-circuit-closing device, a casing and a circuit-closing spring therein and a contact-point for said spring, a plunger supported and adapted to slide in said casing, a set of spring-arms on said casing and a cross-piece engaged in said springs and serving as a bearing for one end of said plunger, substantially as described.

Witness my hand to the foregoing specification this 19th day of June, 1899.

FERDINAND WILKE.

Witnesses:

J. V. WELSH,
NELLIE MCFARLAND.