

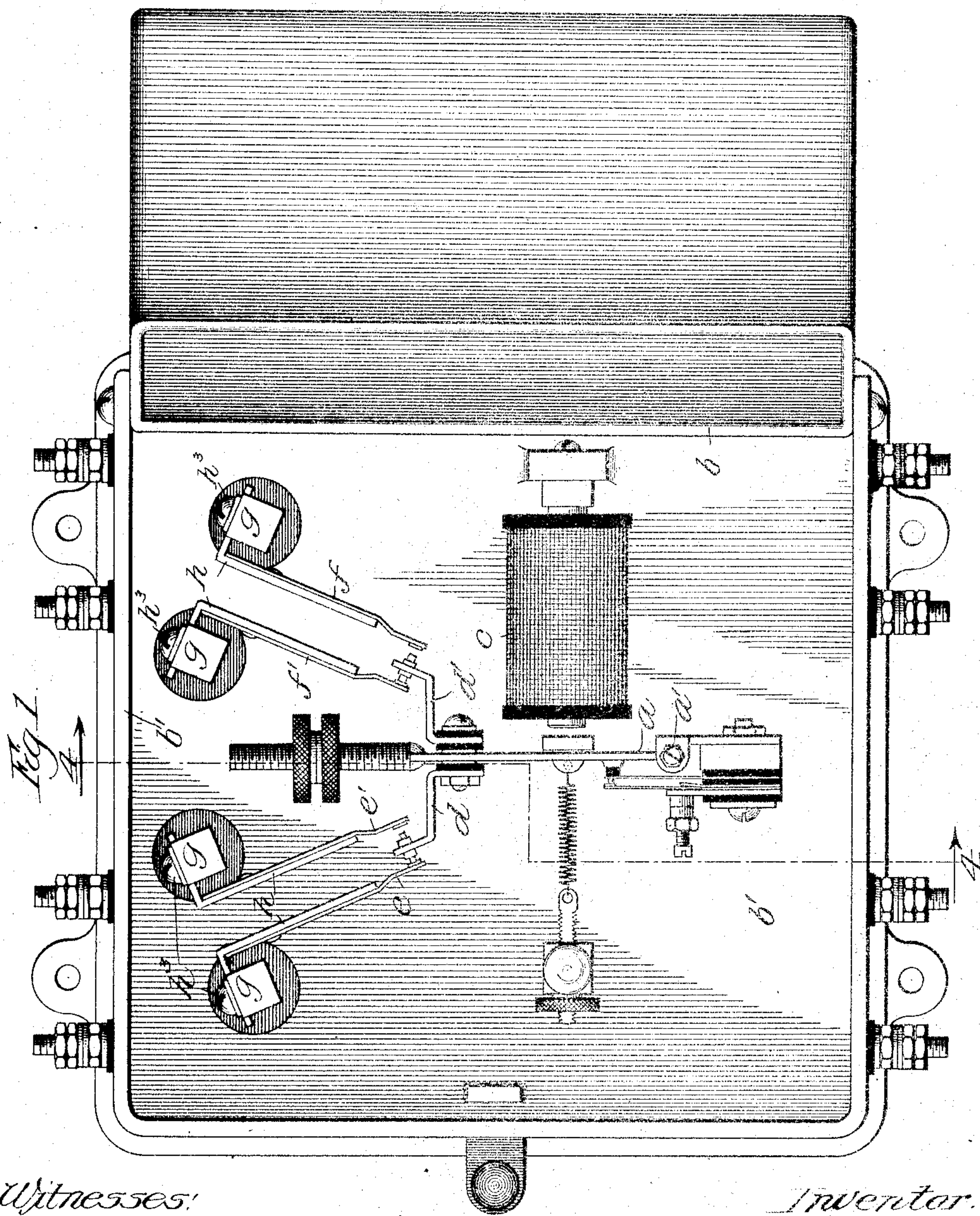
No. 886,141.

PATENTED APR. 28, 1908.

A. R. LUSCHKA.
INTERRUPTER.

APPLICATION FILED DEC. 11, 1905.

3 SHEETS—SHEET 1.



Witnesses:
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3 SHEETS—SHEET 2.

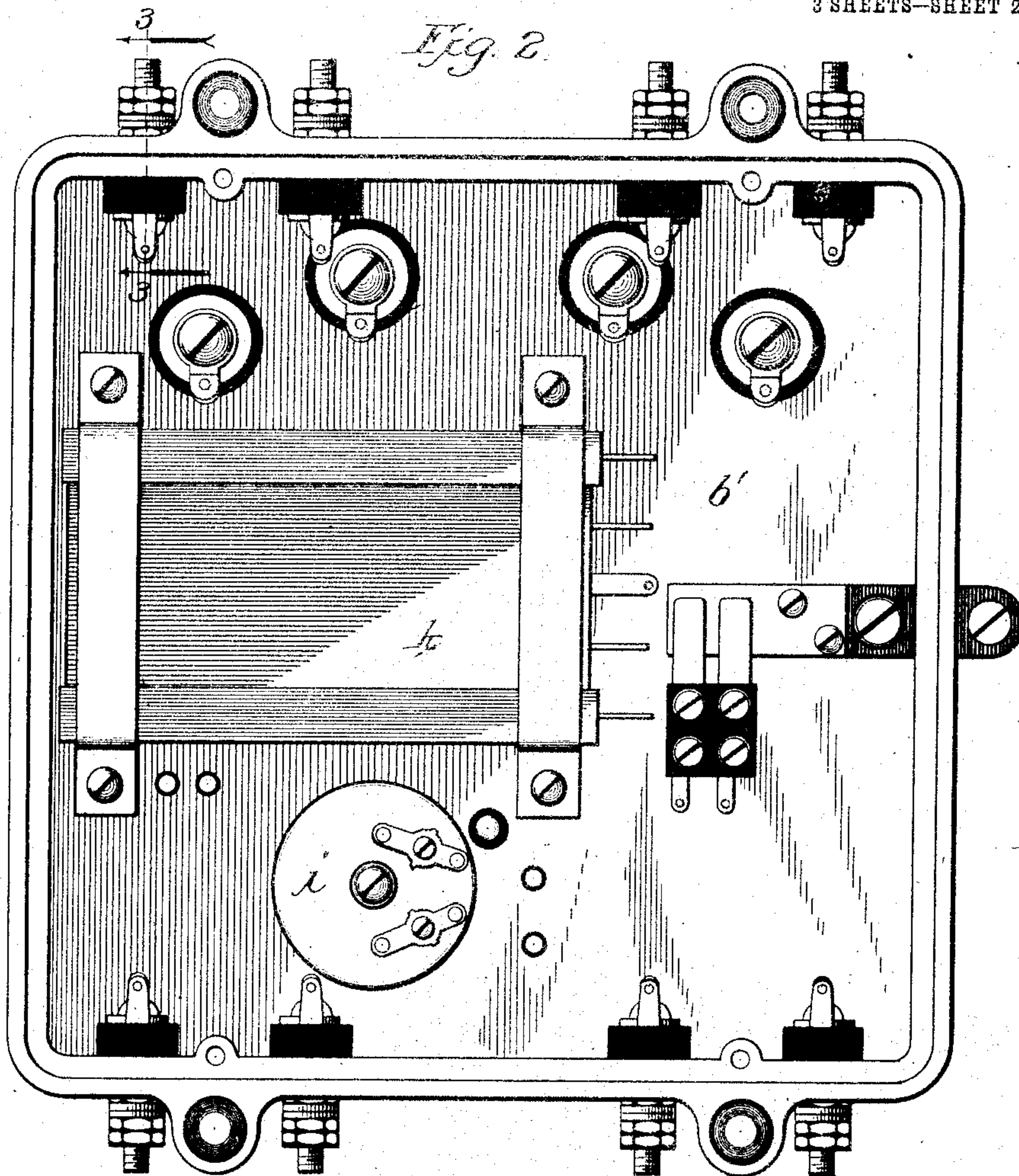
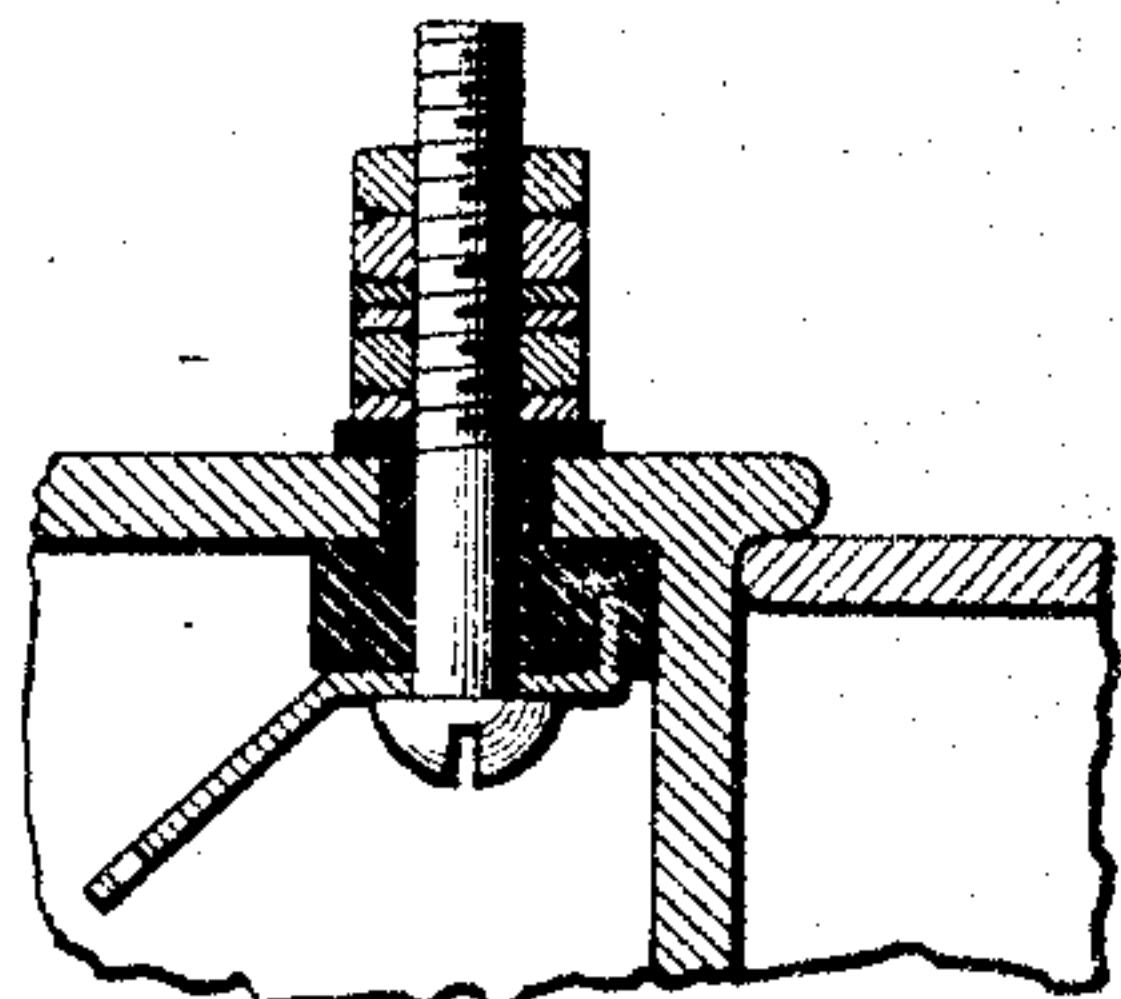


Fig. 3.



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3 SHEETS—SHEET 3.

Fig 4.

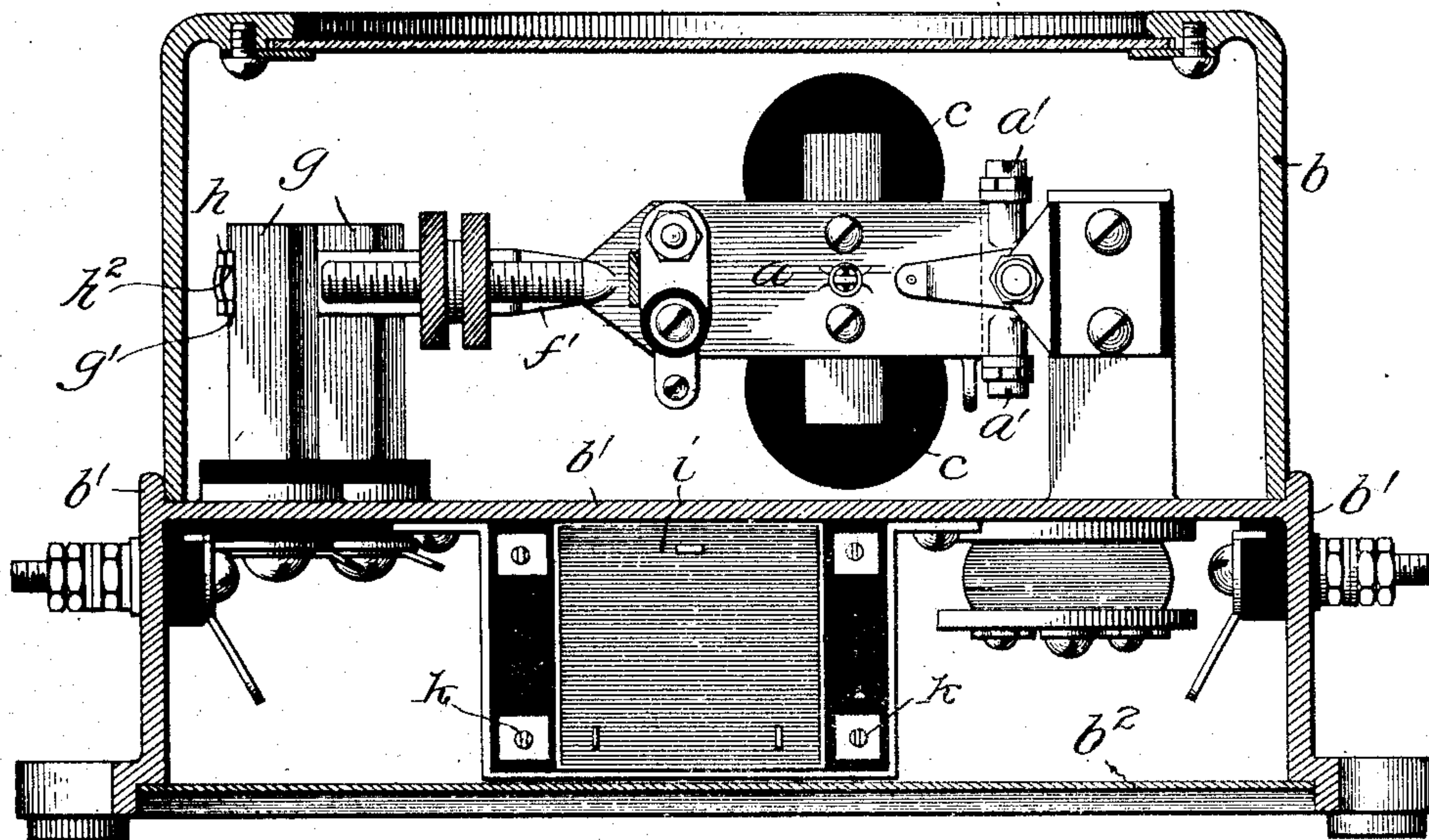
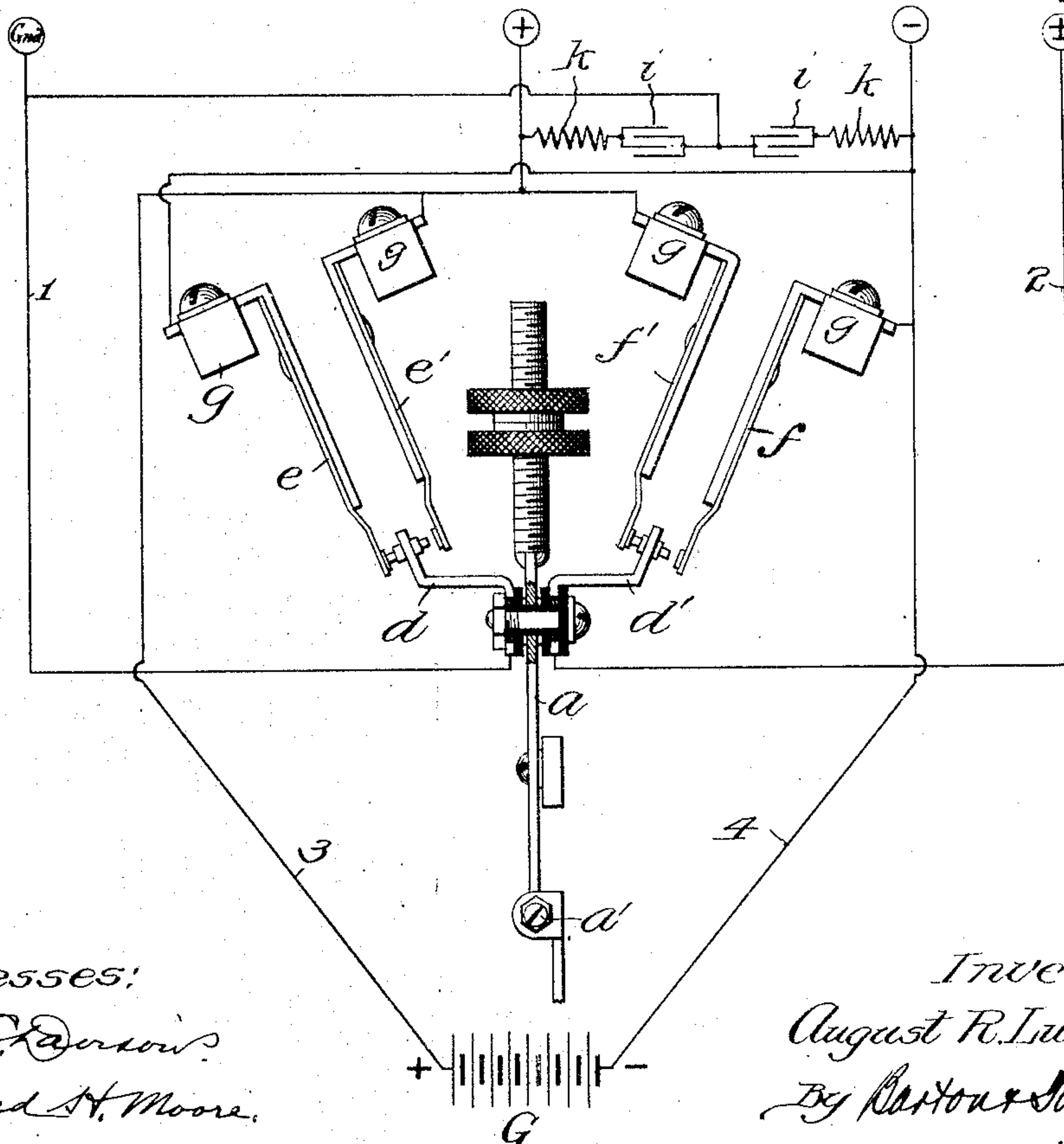


Fig 5.



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UNITED STATES PATENT OFFICE.

AUGUST R. LUSCHKA, OF RIVER FOREST, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INTERRUPTER.

No. 886,141.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed December 11, 1905. Serial No. 291,205.

To all whom it may concern:

Be it known that I, AUGUST R. LUSCHKA, citizen of Switzerland, residing at River Forest, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Interrupters, of which the following is a full, clear, concise, and exact description.

My invention relates to pole changers for transforming direct current into pulsating or alternating current, and has for its object to provide an improved and simplified device capable of permanently secure assembly, easy and complete adjustment without resorting to the bending of springs and without danger of short circuits, and furthermore, to accomplish these desirable results in a structure compact as is compatible with efficient operation.

I will describe my invention by reference to the accompanying drawings, which illustrate the preferred embodiment thereof, reserving for the appended claims a statement of the parts, improvements and combinations which I consider novel with me.

In the drawings, Figure 1 is a plan view of a pole changer embodying my invention, with the cover of the containing case swung open; Fig. 2 is a bottom view of the pole changer, with the lower base plate removed, to show the hollow base, within which may be mounted condensers and resistance coils; Fig. 3 is a sectional view on line 3—3 of Fig. 2, showing a portion of the hollow base and the manner in which the terminals are insulated and locked in place. Fig. 4 is a transverse sectional view on line 4—4 of Fig. 1; and Fig. 5 is a diagram illustrating the circuit connections of the device.

Similar letters of reference designate like parts throughout the several figures of the drawings.

The vibrating arm *a* of the pole changer is pivoted at *a'* to a lug carried by the base *b'* of the containing case *b*, said arm being operated by an electromagnet *c* in the well-known manner. The arm *a* carries two contact fingers *d d'* insulated from the arm and projecting angularly therefrom, preferably at right angles, one finger being mounted on each side of the arm. Said fingers *d d'* have associated therewith pairs of contact springs *e e'* and *f f'*

respectively, each finger when moved by the arm *a* intermittently engaging the springs associated therewith. The free ends of said fingers are preferably bent to lie in radial lines from the pivotal point of the vibratory arm, and the springs *e e'*, *f f'* which are mounted on edge also lie in substantially radial lines from said pivotal point, the free ends of the springs of each pair lying parallel to the free end of their operating finger and on opposite sides thereof. This fan-shaped arrangement of the contact springs, fingers and arm, laid out with regard to a given center, provides a striking contact between the fingers and springs and eliminates the objectionable sliding of the contacts on each other.

I provide a supporting post *g* for each spring, said post being secured to the base *b'*, the springs being laterally adjustable upon said posts to vary their separation from their operating fingers. The fixed end *h* of each spring is preferably bent to lie at right angles to the body of the spring, and is adapted to move longitudinally in a groove *g'* in the rear side of the post supporting such spring, so as to move the body of the spring laterally for adjustment. The angular end *h* of each spring is provided with a longitudinal slot *h²* therein, and a screw *h²* or other suitable fastening device is adapted to be passed through said slot into the post to secure the spring in any adjusted position. With this arrangement, the springs may be readily adjusted while the device is in operation if desired, without danger of short circuiting the springs, since each spring has its individual supporting post, and the posts are necessarily mounted, in order to hold the springs in proper radial position, far enough apart to permit convenient access to said posts and springs, while at the same time the structure is very compact. When adjusted in any position, the springs are held firmly in such position.

In Fig. 5 I have shown a set of circuit connections for the pole changer herein described as embodying my invention. One finger *d* is grounded by conductor 1, and the other finger *d'* is connected with a conductor leading to the alternating circuit terminal of the instrument. A source of direct current *G* is illustrated, the positive pole thereof being

connected by a conductor 3 with the positive pulsating current terminal of the instrument, springs $e' f'$ forming the terminals of branches leading from said conductor. The negative pole is connected with a conductor 4 which leads to the negative pulsating current terminal of the instrument, springs $e f$ forming terminals of branches from said conductor. Thus when the arm is in the position shown, the negative pole is grounded by way of conductor 4, spring e , finger d and conductor 1, and a positive impulse is delivered to the positive pulsating terminal of the instrument by way of conductor 3, a positive impulse being also delivered by way of conductor 3, spring f' , finger d' and conductor 2, to the alternating current terminal. When the arm is in its alternative position, with fingers $d d'$ engaging springs $e' f'$ respectively, positive pole of battery G is grounded, and a negative impulse delivered to both the negative pulsating terminal of the instrument and the alternating current terminal thereof.

I preferably provide condensers i and resistances k in association with the circuits of the instrument to prevent sparking at the contacts, as shown in Fig. 5, and these parts may be compactly mounted with the hollow

base b' of the case b , as shown in Fig. 4, the base being closed by a plate b^2 .

I claim:—

In a pole changer, the combination with a base, of a vibratory arm carried thereby, insulated-angularly disposed contact fingers carried by said arm, a pair of contact springs mounted on edge associated with each finger, adapted to be intermittently connected with said finger in the operation of said arm, the free ends of each pair of springs lying on opposite sides of its associated finger, and a supporting post for each spring, the fixed end of each spring being bent at right angles to the body of said spring to slide in a groove in the rear side of its supporting post to vary the distance between the free end of said spring and its associated finger, the said angular end of the spring being longitudinally slotted, and a screw passing through said slot into the post to secure the spring in an adjusted position.

In witness whereof, I, hereunto subscribe my name this 2nd day of December, A. D. 1905.

AUGUST R. LUSCHKA.

Witnesses:

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