

No. 862,344.

PATENTED AUG. 6, 1907.

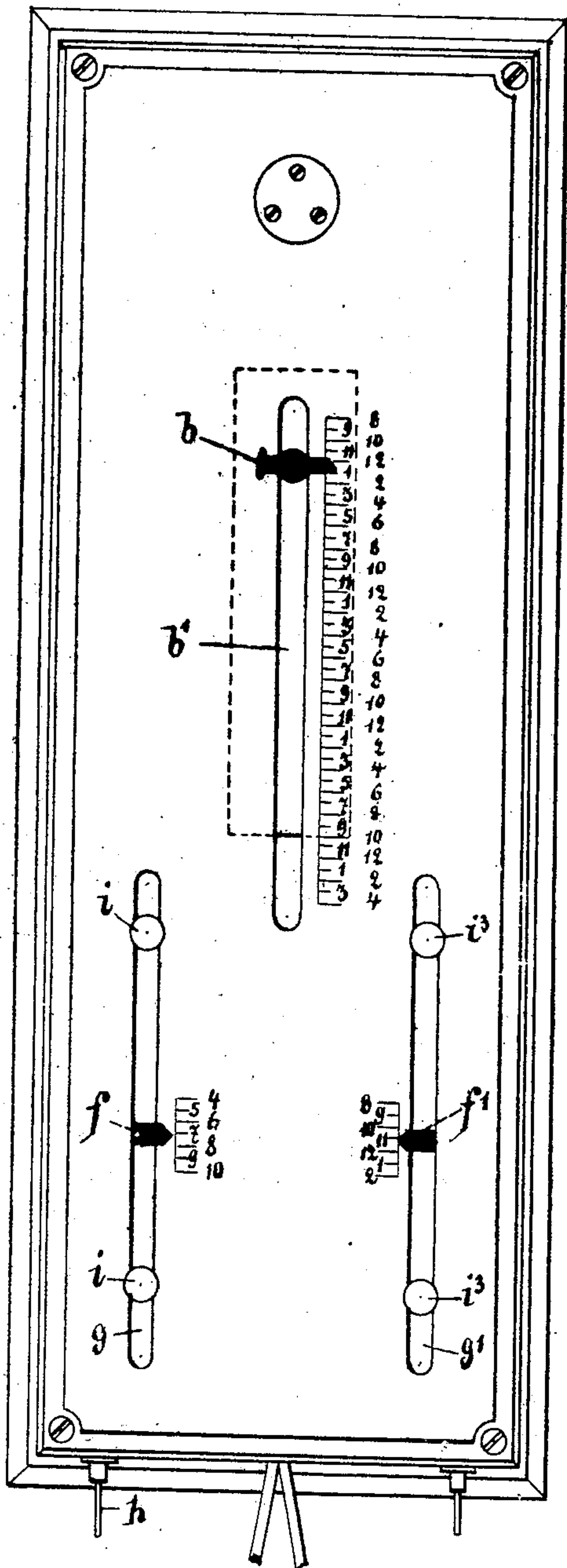
M. NEUMANN & S. REGENSTEINER.

ELECTRIC TIME SWITCH.

APPLICATION FILED SEPT. 6, 1905.

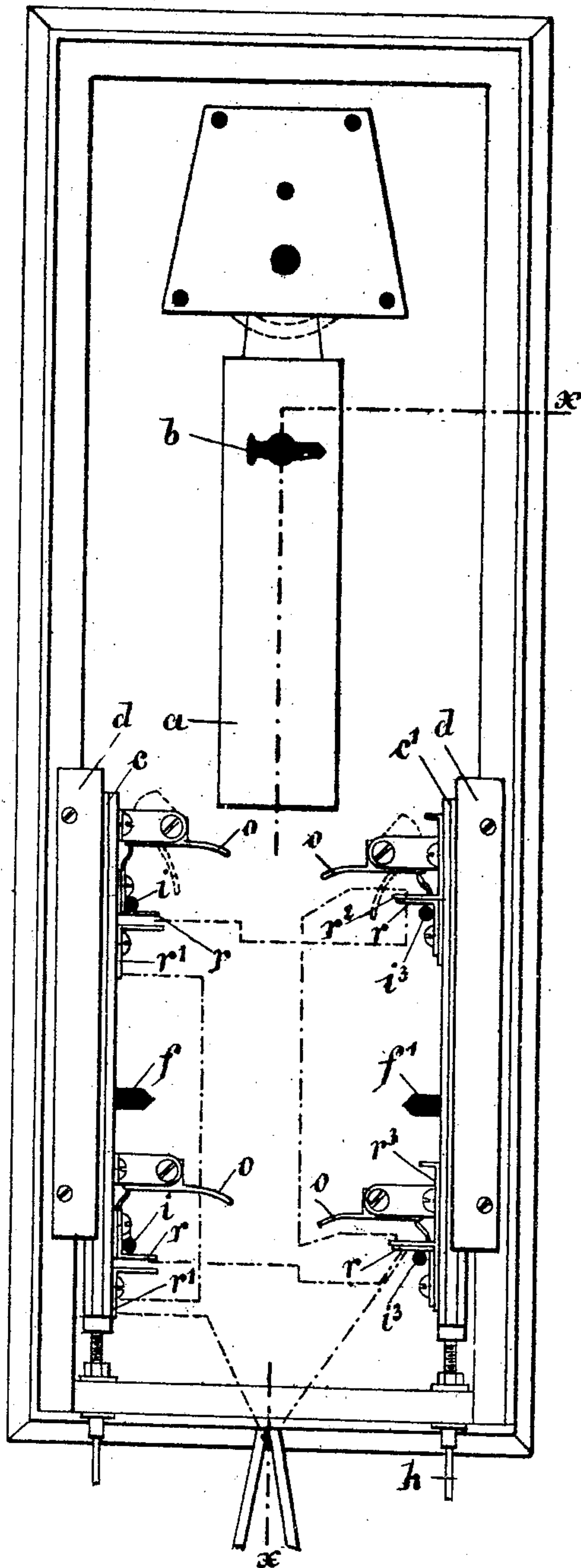
3 SHEETS-SHEET 1.

Fig. 1.



Witnesses
Georg J. K.
Mary Reissmann

Fig. 2.



Inventors
Max Neumann
Siegfried Regensteiner

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3 SHEETS—SHEET 2.

Fig. 3.

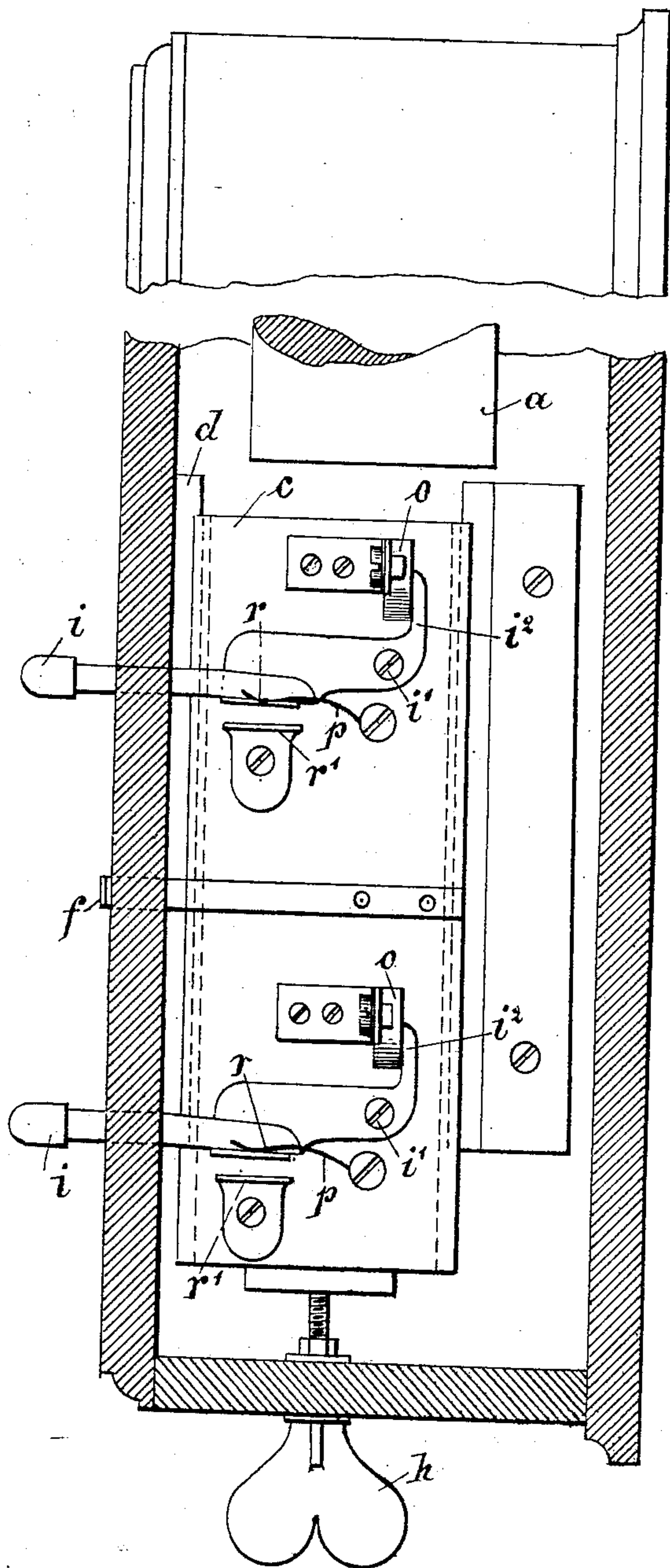


Fig. 6.

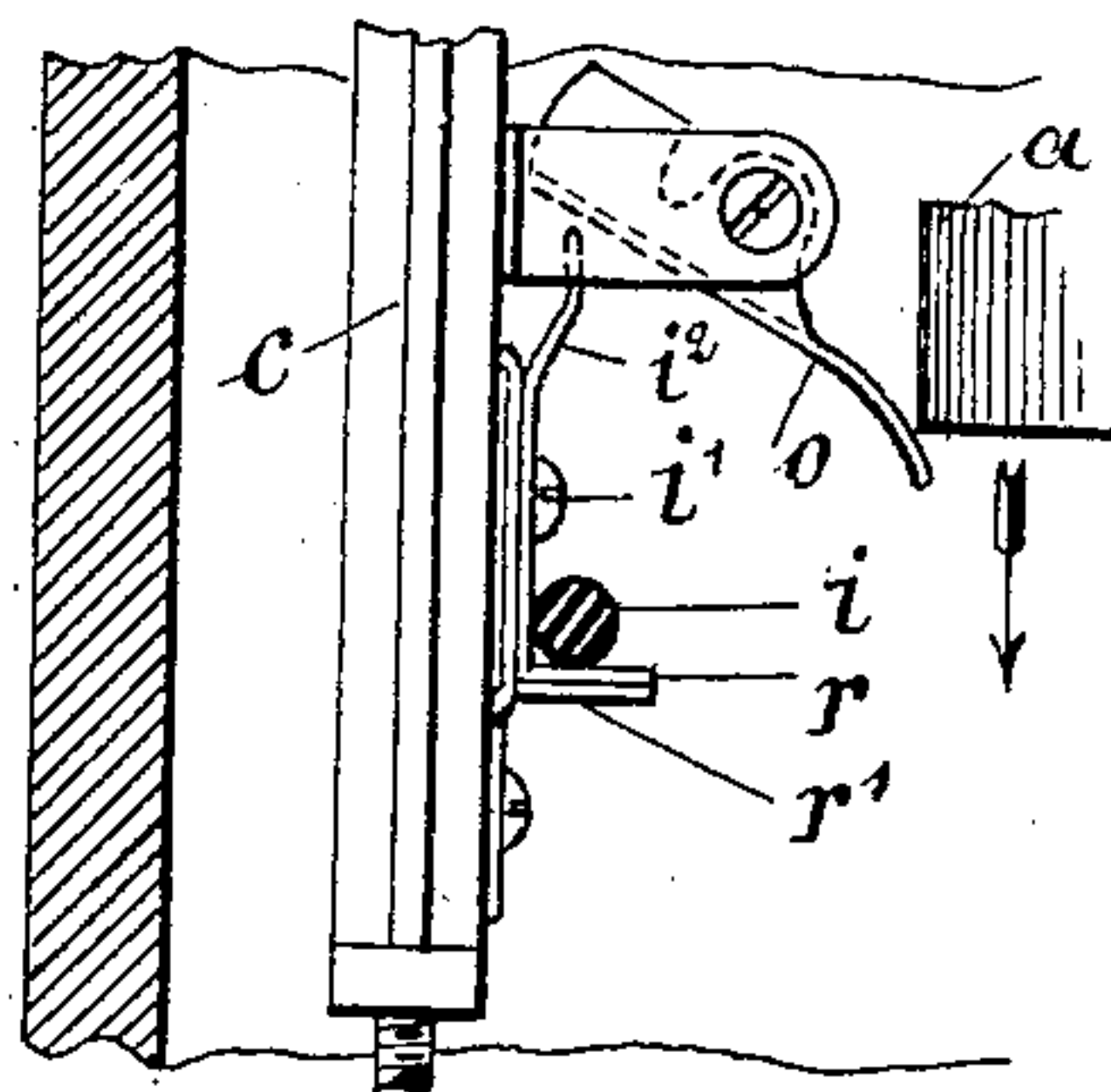


Fig. 5.

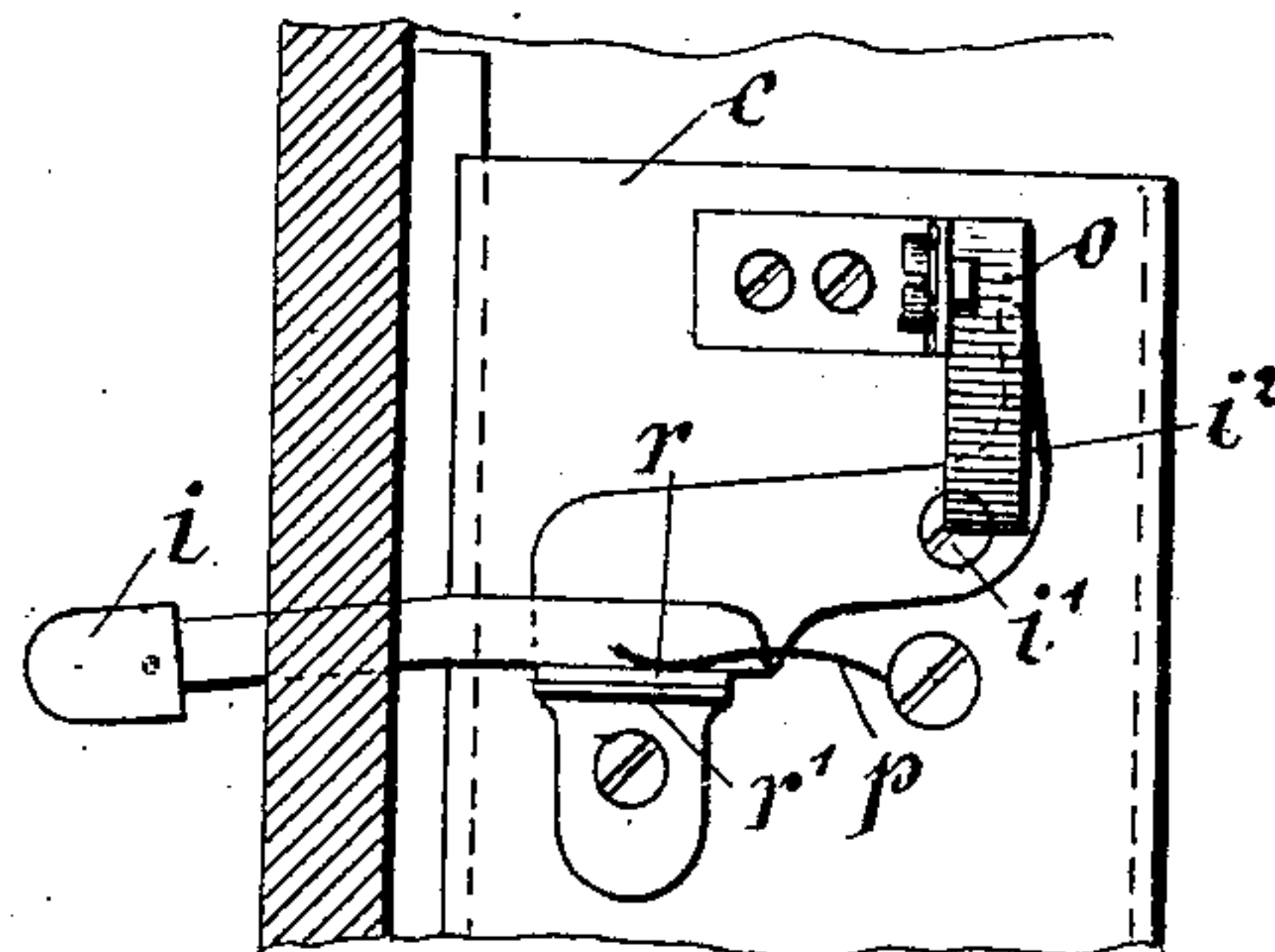
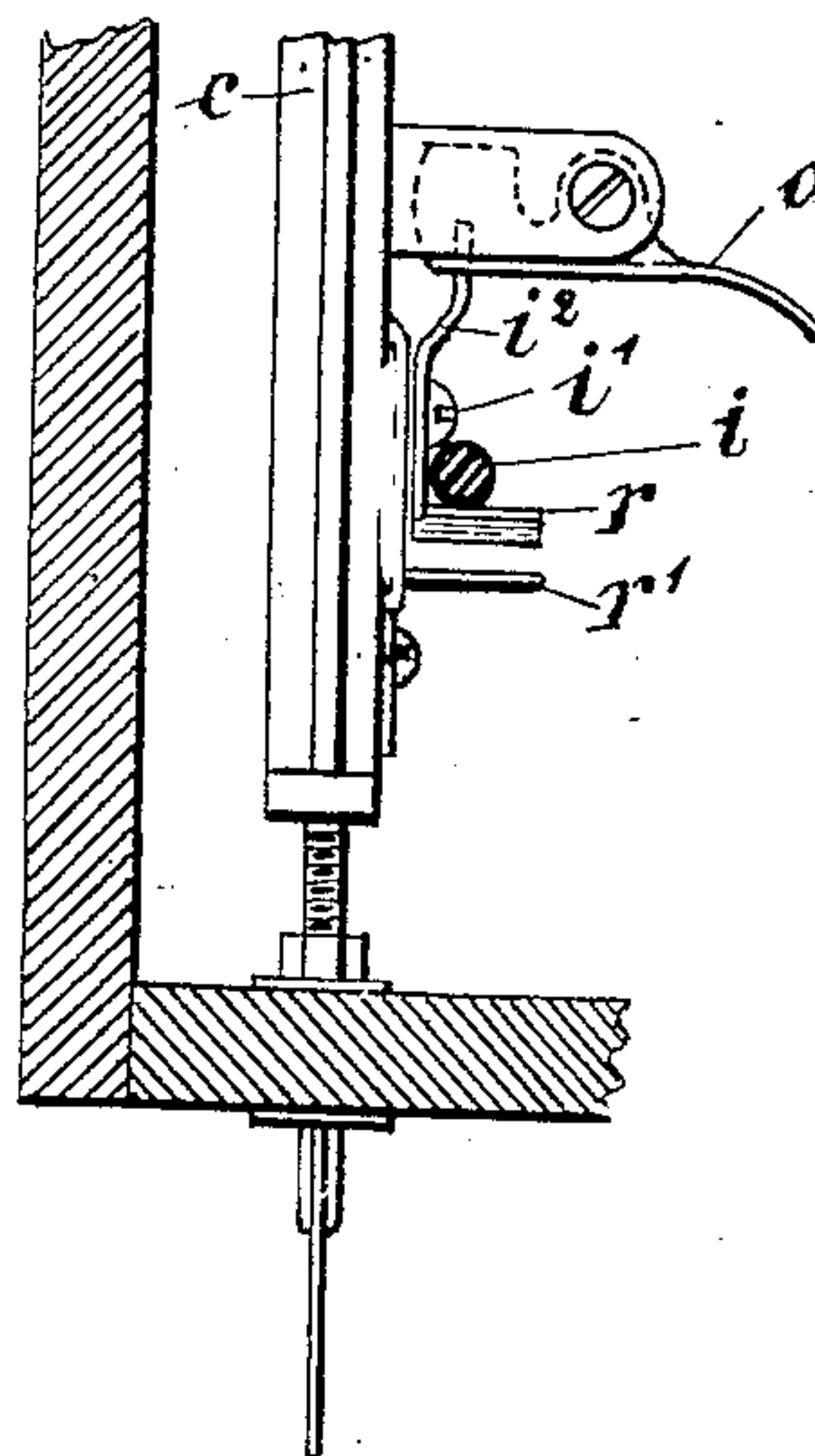


Fig. 4.



Witnesses
George B. ...
Mary Steinmann

Inventors
Max Neumann
Siegfried Regensteiner

No. 862,344.

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M. NEUMANN & S. REGENSTEINER.

ELECTRIC TIME SWITCH.

APPLICATION FILED SEPT. 8, 1905.

3 SHEETS—SHEET 3.

FIG. 7.

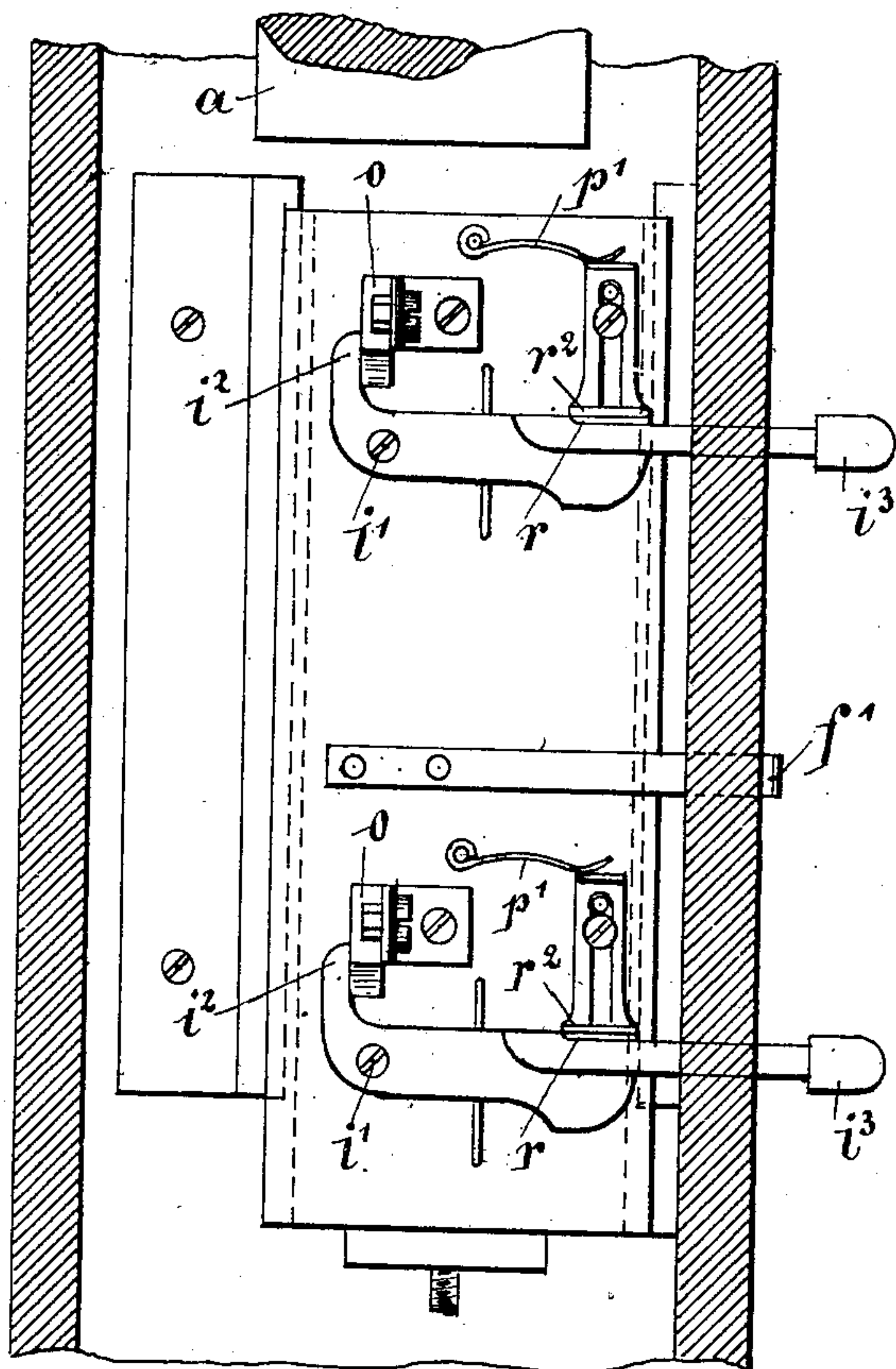


FIG. 8.

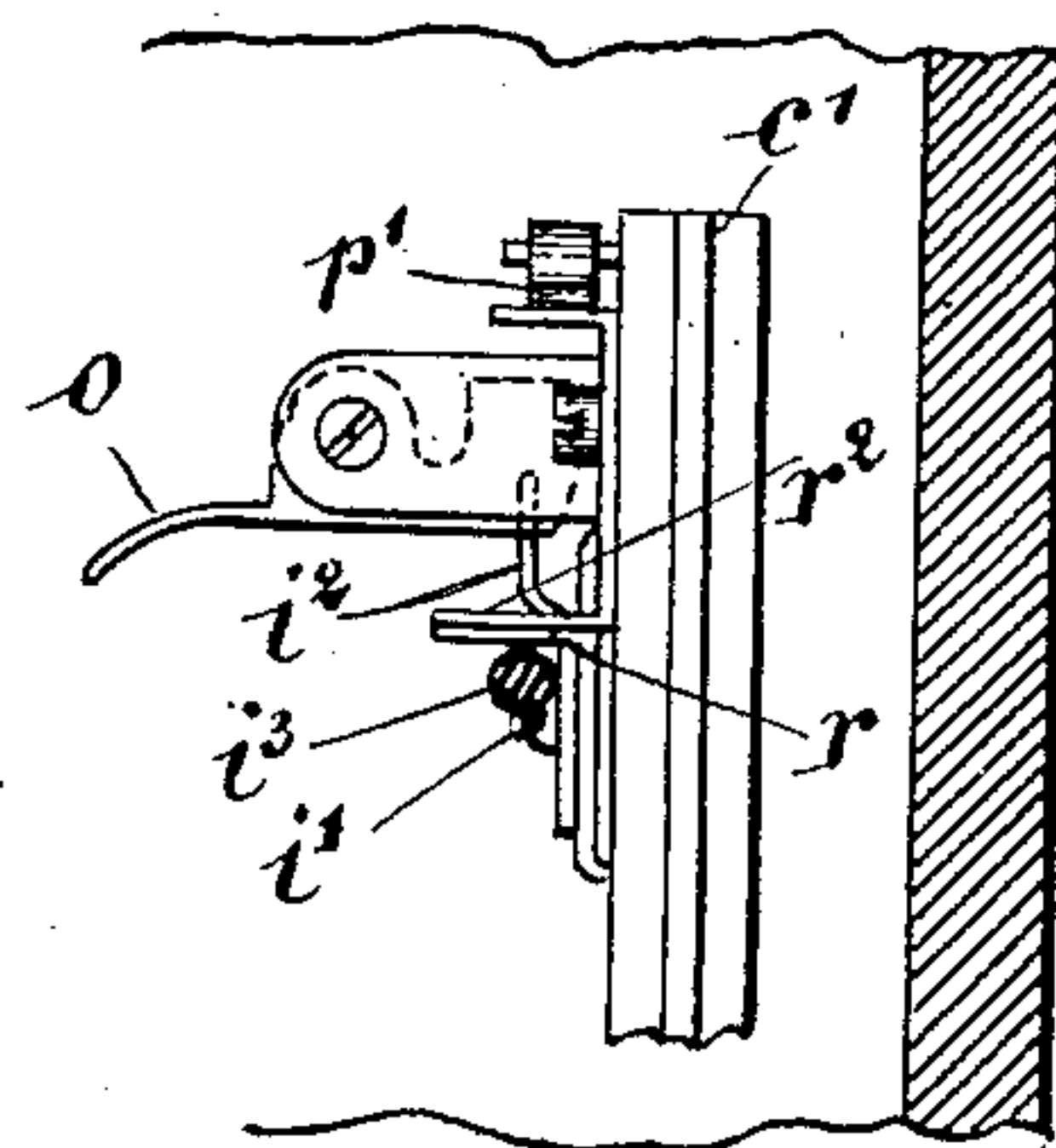


FIG. 9.

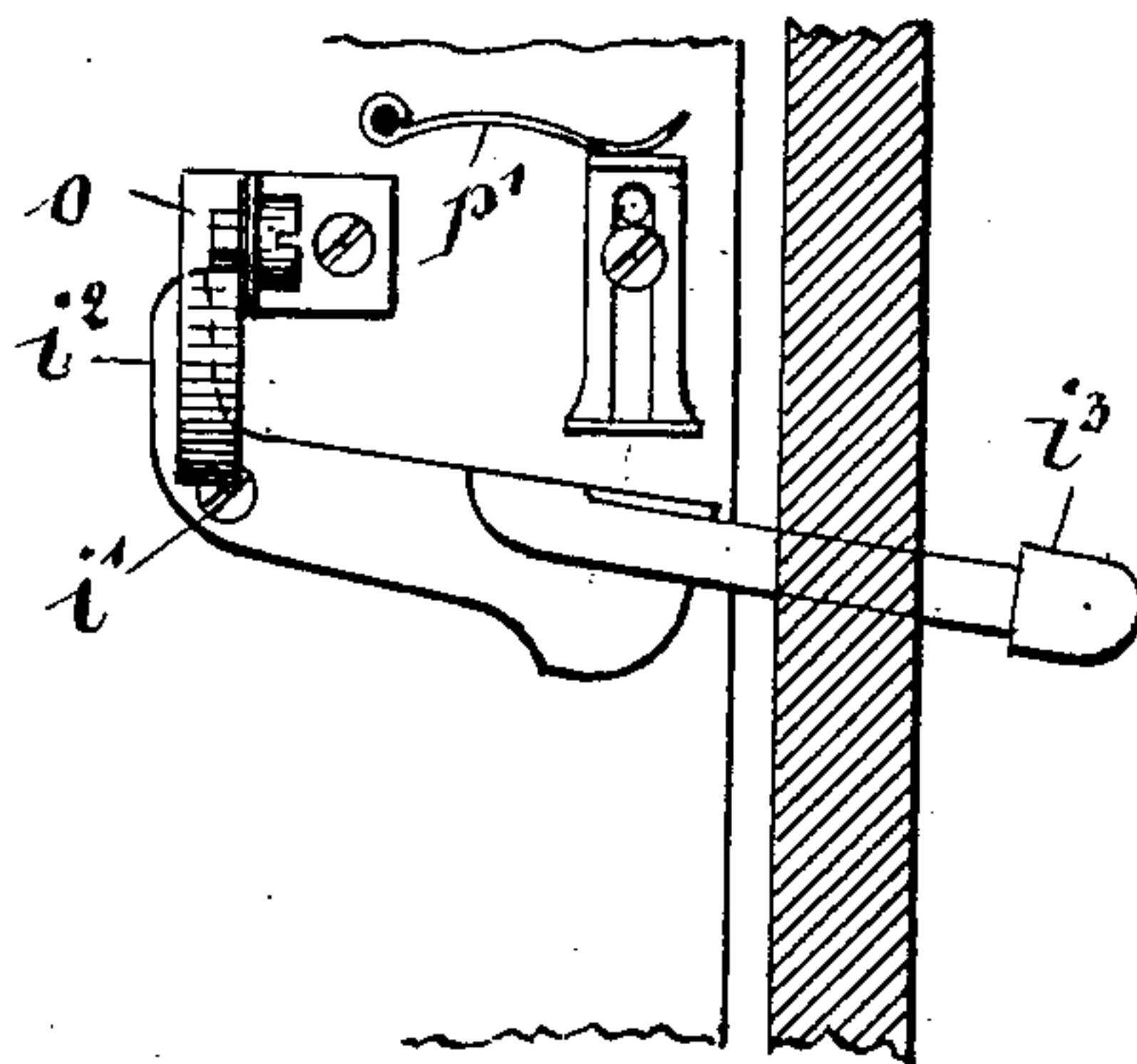
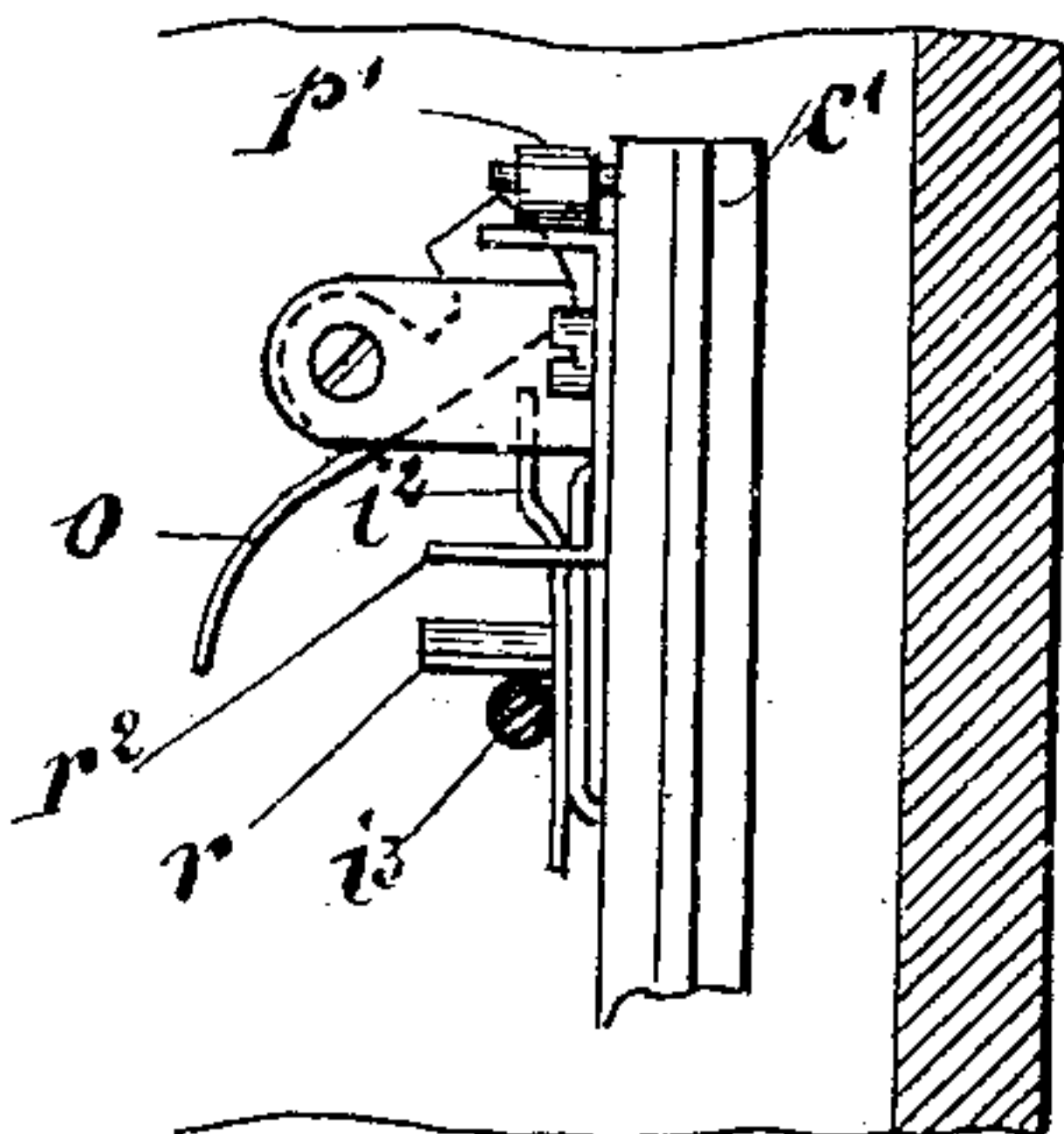


FIG. 10.



Witnesses

George J. H.
Max Fleisschman

Inventors

Max Neumann
Sigfried Regensteiner

UNITED STATES PATENT OFFICE.

MAX NEUMANN, OF MUNICH, AND SIEGFRIED REGENSTEINER, OF PASING, GERMANY.

ELECTRIC TIME-SWITCH.

No. 862,344.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed September 6, 1905. Serial No. 277,246.

To all whom it may concern:

Be it known that we, MAX NEUMANN, a subject of the Austrian Emperor, and a resident of Munich, Germany, and SIEGFRIED REGENSTEINER, a subject of the King of Bavaria, and a resident of Pasing, Germany, have invented new and useful Improvements in Electric Time-Switches, of which the following is a specification.

The subject of our invention is a clock-switch for automatically making and breaking electric circuits for lighting, signaling and like purposes at certain definite times. The circuit is made and interrupted by the descending weight of the clock, which contacts with levers lying in its path and by depressing the same causes contact pieces to be closed or separated. The levers are mounted at each side of the clock on plates secured to the casing, which plates can by means of set-screws or the like be so adjusted that the clock-weight will effect "make" or "break" at a certain definite time.

Our invention is illustrated in the accompanying drawing, in which

Figure 1 is a front elevation of the apparatus. Fig. 2 is a like view the cover-plate with dial being removed. Fig. 3 is an elevation and part section (parts being broken away) on the line $x-x$ of Fig. 2, looking toward the left, the circuit being open at both places of contact. Fig. 4 shows the bottom portion of Fig. 3, the section being taken at right angles to the latter figure. Fig. 5 shows the position of the parts of the upper contact mechanism of Fig. 3 when the circuit is closed. Fig. 6 is a section through Fig. 5, the section being taken at right angles to the latter figure and a portion of the clock weight being also illustrated. Fig. 7 is a fragmental section on the line $x-x$ of Fig. 2, looking toward the right, the circuit being closed at both places of contact. Fig. 8 shows the upper portion of Fig. 7, the section being taken at right angles to the latter figure. Fig. 9 shows the position of the parts of the bottom contact mechanism of Fig. 7 when the circuit is open. Fig. 10 is a section through Fig. 9, the section being taken at right angles to the latter figure. Figs. 3-10 are drawn to a larger scale than Figs. 1 & 2.

The clock-weight a is provided with a pointer b , which protrudes through a slot b^1 in the cover-plate of the clock (Fig. 1). On this plate there is arranged a time-scale, by means of which the time is determined when the weight makes or breaks the circuit. At each side of the clock there is a plate of insulating material c, c^1 . The plate c carries the levers for closing the circuit, and the plate c^1 the levers for breaking the circuit. Each plate c, c^1 slides between guide-strips with the aid of feathers and grooves and is provided with a pointer f, f^1 , which projects through a slot g, g^1 in the cover-plate. Each plate c, c^1 can, moreover, be adjusted in vertical direction by means of a thumb screw

h , (which passes through the bottom of the clock case or cabinet), according to the time when the making or breaking of the circuit is to commence. The pointer f for indicating "making" and the pointer f^1 for "breaking" can be adjusted by the aid of time-scales marked on the cover-plate of the clock.

Pivoted to the plate c at v^1 (Fig. 3) are two bent levers i , the shorter limb of each of which i^2 bears against a pivoted counterweighted lever o (detail view Fig. 5) which projects into the path of the clock weight. Each lever i is acted upon by a spring p and is provided with a contact-piece r , the twin contact-piece r^1 being rigidly secured to the plate c . When the weight a descends it depresses the lever o which lies in its path and owing to the tilting of this lever the shorter arm i^2 of the lever i is released, so that the contact-piece r of the latter is forced against the contact-piece r^1 by the pressure of the spring p . At the right hand plate c^1 the arrangement is similar, but the stationary contact r^2 is located above the lever i^3 (Fig. 4). When, therefore, the weight a descends upon the lever o , the limb i^2 which bears against it will be released and the arm i^3 with contact-piece r descends. In order to insure thorough contact at r, r^2 , when the circuit is closed, the contact-piece r^2 instead of being stationary may be arranged to slide on the plate c^1 under the influence of the spring p^1 , so that it bears down upon the twin contact. The extent of its motion may be limited by slot and pin.

When the clock is to be employed, that is set, the levers must be pushed up, whereupon they will be mechanically held. The weight a by releasing the lever i makes the circuit and by releasing the lever i^3 breaks it.

In the drawing a two day arrangement is illustrated, that is to say, there are two "making" and two "breaking" levers. The purpose of this is to enable during two days,—that is after each twenty-four hours,—making and breaking to be automatically repeated. Should more frequent making and breaking be required, more such levers must naturally be provided.

Having thus described our invention, we declare that what we claim as new and desire to secure by Letters Patent of the United States of America is:

1. In a clock switching apparatus, in combination, a clock weight, a plate secured at each side of the clock case, a two armed lever pivoted to each plate one arm of which lever protrudes into the path of the clock weight, a two armed contact lever pivoted to each plate one arm of which contact lever is engaged by the first said lever but is released when the clock weight descends upon the latter, and a contact piece on each plate adapted to close the circuit when the contact lever presses against it, substantially as described.

2. In a clock switching apparatus, in combination, a clock weight, an adjustable slide at each side of the clock case, a two armed lever pivoted to each slide one arm of which lever protrudes into the path of the clock weight, a

two armed contact lever pivoted to each slide one arm of which contact lever is engaged by the first said lever but is released when the clock weight descends upon the latter, and a contact piece on each slide adapted to close the circuit when the contact lever presses against it, substantially as described.

3. In a clock switching apparatus, in combination, a clock weight, a plate secured at each side of the clock case, a two armed lever pivoted to each plate one arm of which lever protrudes into the path of the clock weight, a two armed contact lever pivoted to each plate, that on the one plate being spring actuated, one arm of each of which contact levers is engaged by the first said levers but is released when the clock weight descends upon the latter, and a contact piece carried by the plate carrying the spring actuated contact lever and adapted to close the circuit when the latter presses against it, and a spring actuated sliding contact piece secured to the other plate and normally pressed against the other contact lever, substantially as described.

4. In a clock switching apparatus, in combination, a clock weight, a plate secured at each side of the clock case, a plurality of two armed levers pivoted to each plate one arm of each of which levers protrudes into the path of the clock weight, a plurality of two armed contact levers piv-

oted to each plate, one arm of each of which contact levers is engaged by one of the first said levers but released when the clock weight descends upon the latter, and a plurality of contact pieces carried by each plate and adapted to close the circuit when the corresponding contact levers press against them, substantially as described.

5. In a clock switching apparatus, in combination, a clock weight, a slide secured at each side of the clock case, a two armed lever pivoted to each slide one arm of which lever protrudes into the path of the clock weight, a two armed contact lever pivoted to each slide one arm of which contact lever is engaged by the first said lever but is released when the clock weight descends upon the latter, a contact piece on each slide adapted to close the circuit when the contact lever presses against it, pointers on the clock weight and the slides and time scales on the clock case, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

MAX NEUMANN.

SIEGFRIED REGENSTEINER.

Witnesses:

ULYSSES J. BYWATER,

ABRAHAM SCHLESINGER.