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PROVISIONAL SPECIFICATION:

Improvements in or in connection with Time Alarm Clocks or Indicators.

I, KONSTANTIN HAIDENEKG of Pakrae, Hungary, Postmaster, do hereby declare the nature of this invention to be as follows:—

This invention relates to an indicator or signal clock which shall indicate by the aid of an electric current in combination with notices or entries in a book matters that have to be carried out at certain times, this being effected in such manner that the clock signals a certain time (to be determined at will) by means of which signal on referring to the corresponding entries in a book, it can be at once ascertained what has to be done at that particular time.

Such an electrical signalling clock can be constructed for various divisions of time, the following being the three principle types.

1. For hours.
2. For hours and days.
3. For hours days and months.

The signal clock of the first kind is suited for signalling or indicating events happening during the day and it consists for this purpose of a dial with 12 or 24 hour divisions, over which travel hour and minute clock hands, of which the hour hand; at a predetermined time, makes a contact so as to close a battery circuit the current of which actuates an audible signal.

In order to enable this to be done in every position of the hands, the dial is made of conducting material and has on its periphery a number of holes corresponding to that of the hour divisions.

A conducting wire passes from the battery to the arbor of the hour hand which is insulated from the dial, and a second conductor leads from the battery to the dial, and has an electric signal bell included in it. If a signal is to be sounded at a certain time, a pin of conducting material is introduced into the hole of the corresponding division with which pin an elastic extension of the hand makes contact as it arrives at that division, thus closing the circuit, and in sounding the bell, giving a signal to the official or person that something requires to be done at that time, the nature of which he ascertains on reference to his book. This book may either be carried by the official &c. or it may be combined with the clock as hereinafter described.

The signal clocks of the second kind have either two concentric dials, one for indicating the hours and the other for the days. In the former case the outer annular dial is insulated from the inner one and is preferably marked with 24 hour divisions, while the inner one has 31 day-divisions.

Each one has a circle of holes into which are inserted conducting pins, and there is a hand for each dial, the hand for the outer one moving through one division for every hour, and the inner one, one division in a day. The hands have elastic extensions that come in contact with the pins as before.

With this clock the battery circuit will only be closed and a signal sounded when both hands make contact with their pins, the day hand making such contact during a whole day while the hour hand changes contact from hour to hour. In this case the

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battery current passes, say first to the insulated arbor of the day hand, through this, the contact pin and day dial thence through a conductor to the arbor of the hour hand through this, its contact, pin and hour dial and back to the battery through the signal bell. If the entry book is combined with the clock this is also included in the circuit in such a way that the current passes through the closed lock of the book the two parts of which act as contacts so that when the book is opened the circuit is broken. Instead of connecting the book itself to the circuit an enclosing case thereof may be so connected, or the book may be pushed into a case which has two contact springs between which the book makes contact.

With the arrangement where the hour and day dials are separate, arranged side by side the same general arrangement of the parts are employed. Each dial has however a separate circuit in which is included an electro magnet.

The circuit of the day dial passes from the battery to the day hand its contact pin and dial through the one electromagnet and back to the battery. The second circuit passes from the battery through the hour hand, its contact pin and dial through the second electromagnet back to the battery. When the day hand closes its circuit the electromagnet being excited attracts an armature which is made to liberate a fastening holding the entry book. This is situated on an incline so that when liberated it slides down to the second electromagnet which again holds it.

When the hour hand closes its circuit its electromagnet also liberates the book which slides further down and makes contact with stops which are included in a third circuit containing the signal bell, so that this is now sounded; on removing the book the bell circuit is broken. The said electromagnets with the incline and book can be enclosed in a cupboard and contact buttons may be provided by depressing which by hand, the circuits may be closed at any time so as to actuate the electro magnets and liberate the book. The signal clocks of the third above mentioned kind have three dials respectively for hours days and months these being arranged either concentrically one within the other or two may be concentric and one separate or they may be all three separate. Each has circle of holes with contact pins and a hand making contact therewith as before.

The circuit is only closed and the signal bell sounded when all three hands make contact the passage of the current then taking place in a similar manner to the before described construction.

The entry book may either be included in the clock circuit in a similar manner to that first described or it may be arranged in combination with electro magnets and an incline as last described in which case each dial would have a separate circuit.

Dated this 9th day of June 1896.

ABEL & IMRAY,
Agents for the Applicant.

COMPLETE SPECIFICATION.**Improvements in or in connection with Time Alarm Clocks or Indicators.**

I, KONSTANTIN HAIDENEGG of Pakrae, Kingdom of Hungary, Postmaster, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of this electric clock is to indicate, in conjunction with notes what should be done at a given moment; for this purpose the clock rings at a certain fixed hour (which may be chosen at will) after which you can read in a note book what is arranged to be done at a certain time.

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Such an electric clock may be constructed to work at different time-measurements and the following divisions will be the result :

- 1.) One for hours.
- 2.) One for hours and days.
- 3.) One for hours and days and months.

The drawings herewith represent these three divisions of time by sketched figures. Figure 1 is a clock with hour divisions while Figures 2 and 3 represent a similar clock with divisions into hours and days.

Finally Figures 4, 5 and 6 show one with divisions into hours, days and months.

The signal clock shown in Figure 1 is intended to give signals during the day ; it is composed for this purpose, of a dial *a* with divisions into 12 or 24 hours.

This clock rings a signal when a needle (hour-needle *c*) closes the circuit on an electric pile *b*. To make this possible for any position whatever of the needle, this dial is made of a conducting material and is pierced with a number of holes *d* corresponding to the number of divisions.

A conducting wire *f* runs from the pile *b* and penetrates into the clock, that is to say to the pivot of the needle which pivot is insulated from the dial ; in the same way the dial *a* is connected with the pile by a conductor *e* in which is introduced an electric bell *g*.

When at a fixed hour, an electric bell should ring, a rod *h* has to be placed in the corresponding hole, which rod forms an electric communication between the needle and the dial the moment that the elastic extension *i* of this needle meets the rod.

The bell put in action by the closing of the circuit gives notice to its proprietor that a certain business requests him at the moment. It is in a note book intended to receive similar notes that he may read what is required.

This note book may be of any kind and be carried on his person (supposed in Figure 1) or as seen in Figure 2, or it may be part of the apparatus so that he may have it directly to his hand.

The warning clocks of Figures 2 and 3 are suitable for days and hours, that is to say that in pressing in two rods for a certain day one can be warned by the apparatus at that moment that a certain work has to be done.

For this purpose the clock shown in Figure 2 is furnished with two conducting circular faces *a*, *a'*, the greater surrounding the less, whilst they are insulated from one another. The large annular face *a* will be by preference divided into 24 hours, while the smaller *a'*, either disc-form or annular, shows divisions of 31 days.

In this arrangement the warning signal only sounds when the two contacts have been formed between the needles and their corresponding circular faces, by means of rods *h*, *h'* above-mentioned (which have been pushed into the holes *d*, *d'*) but of course one after the other the contact of the day face working first and remaining closed during all the day, while the hour contact is formed in the course of the day.

This being done the current passes from the pile *b* in the direction of the arrow and across the completely insulated tube of the day needle *c'* into the rod *h'* and thence into the face *a'* to pass on to the limit *k* whence it arrives by the movement of the pivot of the hour-needle *c* across a book *m* (which is placed there) to return by the bells *g* to the pile.

In this form of work a note book *m* (preferably a monthly book) is used, directly introduced into the circuit, the part *m m* of the cover forming contacts when the book is shut, which it always is when not required.

The circuit is interrupted and consequently the bell system, when it is opened, after which one can see what is to be done at that moment.

The book can also be replaced by a cover intended to contain it ; or the book may be introduced in a case containing two electric contacts which are connected as soon as the book is introduced. It is necessary in this form of working that the conducting tube of the day-needle, as well as its conducting gear, be insulated in relation to all the parts which touch them, and this by the use of a non-conducting material. There is no reason why there should not be a minute needle.

The different reading of the Figure 3 corresponds to that of Figure 2 so far that

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both comprise divisions of days and hours, but they differ from one another inasmuch as the two faces $a a$ are placed one along side the other. The contacts are formed also by the introduction of rods $h h^1$.

This variation differs also from the preceding one in the book containing the notes not being introduced into the circuit, and in its being influenced by the various currents decided by the closing of the contacts. Clearly each face forms part of a distinct circuit in which is introduced an electro magnet. The circuit of the day face is as follows :

The current passes from pile b to flow in the direction of the arrow to the insulated pivot of the day needle c^1 through the rod h^1 and the dial a^1 from n through the electro magnet o and back into the pile. The second circuit start from the pile b , enters into the movement, that is to say into the pivot of the hour needle c crosses it as well as the dial a and re-enters from p through the electro magnet q into the pile.

The working of this clock is as follows :

When the day-needle closes its circuit (which should be but for a short time, so as not to use up the pile) the electro magnet o is excited and attracts its armature r . This sets free thus the book s , placed on an inclined plane t , and this book slides down to the armature of the second electro magnet q . If now the hour needle also closes its circuit, the book becomes again free and slides down to the pier u which is introduced like the contacts v and the alarm bell g into a special circuit ; this circuit is closed by the book placed in the conducting frame which has the effect of sounding the bell. In taking away the book the circuit becomes re-opened.

In order to be able to withdraw in any position and at any time the book placed in a box (preferably behind the movement) buttons of distinct push $w x$ are used for the two circuits, permitting the electro magnets to work independently of any other contact.

The manner of working of Figures 4, 5 and 6 have this in common, that they are arranged for hours, days and months and comprise therefore three dials $a a^1 a^2$, each having a fixed division of time, hours, days, months and its corresponding needle $c c^1 c^2$.

In Figure 4 the annular dials $a a^1 a^2$ are found one in the other, eventually at different depths and they are insulated from one another.

Each dial is pierced with holes $d d^1 d^2$ corresponding to its divisions and intended to receive the rods $h h^1 h^2$ which close the contacts. These contacts are formed successively as in Figure 2 and the signal only rings after the three contacts have been closed.

The order in which the contacts close is not important however, to provide for every case, the month's contact is formed first, then that of the days, and last, that of the hours. The current leaves the pile, flows in the direction of the arrow to the completely insulated tube of the needle c^2 of months; thence across the rod h^2 and the dial a^2 to the limit y , to the insulated tube of the needle c^1 of days, and from this and by the rod h^1 to the dial a^1 ; thence to limit z , to the hour needle and by the rod h to the dial a , across the bells g and the book m to return to the pile.

The manner of working of Figures 5 and 6 corresponds to that of Figure 4, with this difference that in Figure 5 the dial a^2 is placed separately, while in Figure 6 the three dials $a a^1 a^2$ are placed one beside the other.

The method of communication is here the same as in Figure 2 ; the arrows showing it in this figure ; always the month first, then the day and last the hour for which the contact is made and it is only then that the electric signal rings.

In Figures 4, 5 and 6 the books m are introduced as examples into the circuit, but they may also be used in the same way as in Figure 3; each dial in this case being introduced in a special circuit.

The minute needle may be applied without any difficulty in each of these variants.

It is evident that the methods of constructions of the Figures 2 and 3 can be united in one, and in this case a single commutation is sufficient, either for introducing or for consulting the book fixed in circuit (Figure 2) or the free book Figure 3.

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Having now particularly described and ascertained the nature of this said invention and in what manner the same is to be performed, I declare that what I claim is :

1. An electric clock characterised by one, two, or three conducting dials a a^1 a^2 but insulated from one another, indicating the hours, or hours and days, or the hours, days and months, pierced with holes d d^1 d^2 into which are pressed, to close the circuits, rods h h^1 h^2 , forming contact with the corresponding needles c c^1 c^2 , that is to say with their electric bell g enclosed in the circuit.
2. In the electric alarm clock characterised by the Claim No. 1 the introduction of a book m or of an opening enclosing this book in a circuit such as their conducting shutters m^1 m^2 forming contact when the book is closed, and that the elastic contacts touch one another when the book is introduced there.
3. In the alarm clock characterised by No. 1, an arrangement in which a book enclosed in a conducting frame closes the alarm circuit, an arrangement characterised itself by inclined plane t on which a book is kept by the armature r of an electro-magnet o then slides down by successive intervals, according as the several circuits are closed by the needles, a special circuit being finally closed by contacts u , v a circuit into which is introduced the alarm bell g .

Dated this 9th day of March 1897.

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L. DUVINAGE,
Agent for Applicant.

Fig. 1.

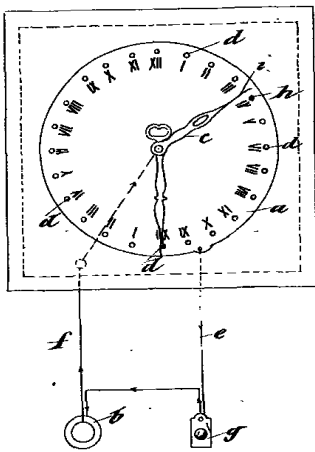


Fig. 2.

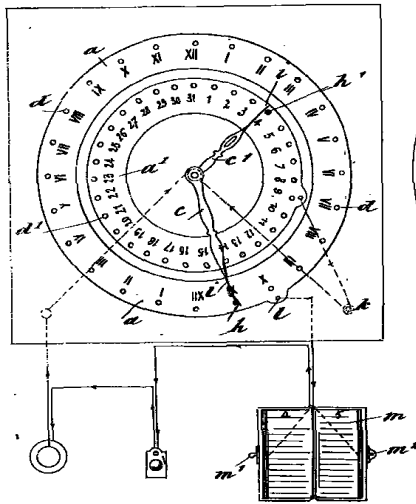
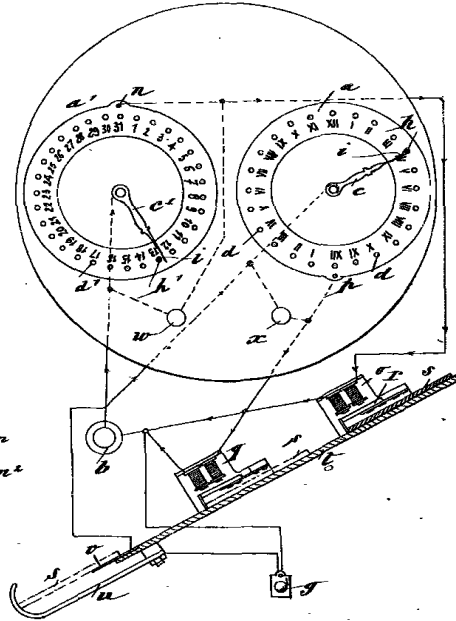


Fig. 3.



[This Drawing is a reproduction of the Original on a reduced scale.]

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Fig. 1.

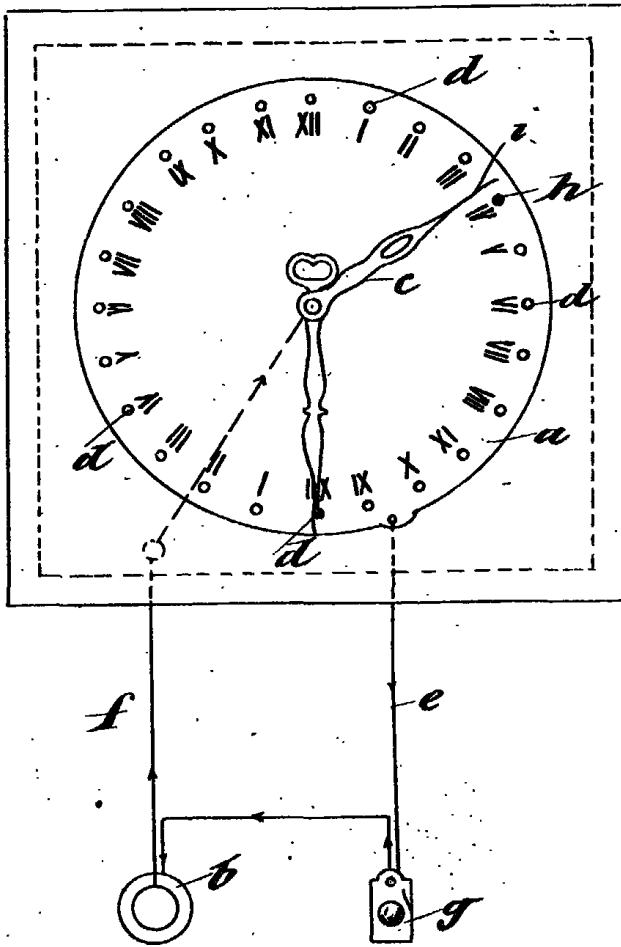


Fig. 2.

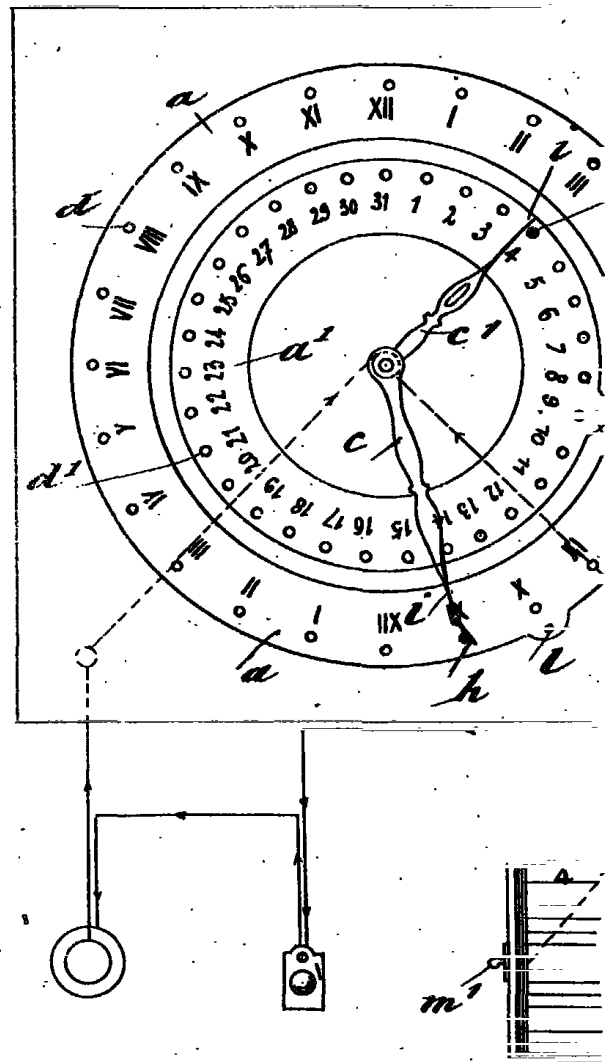
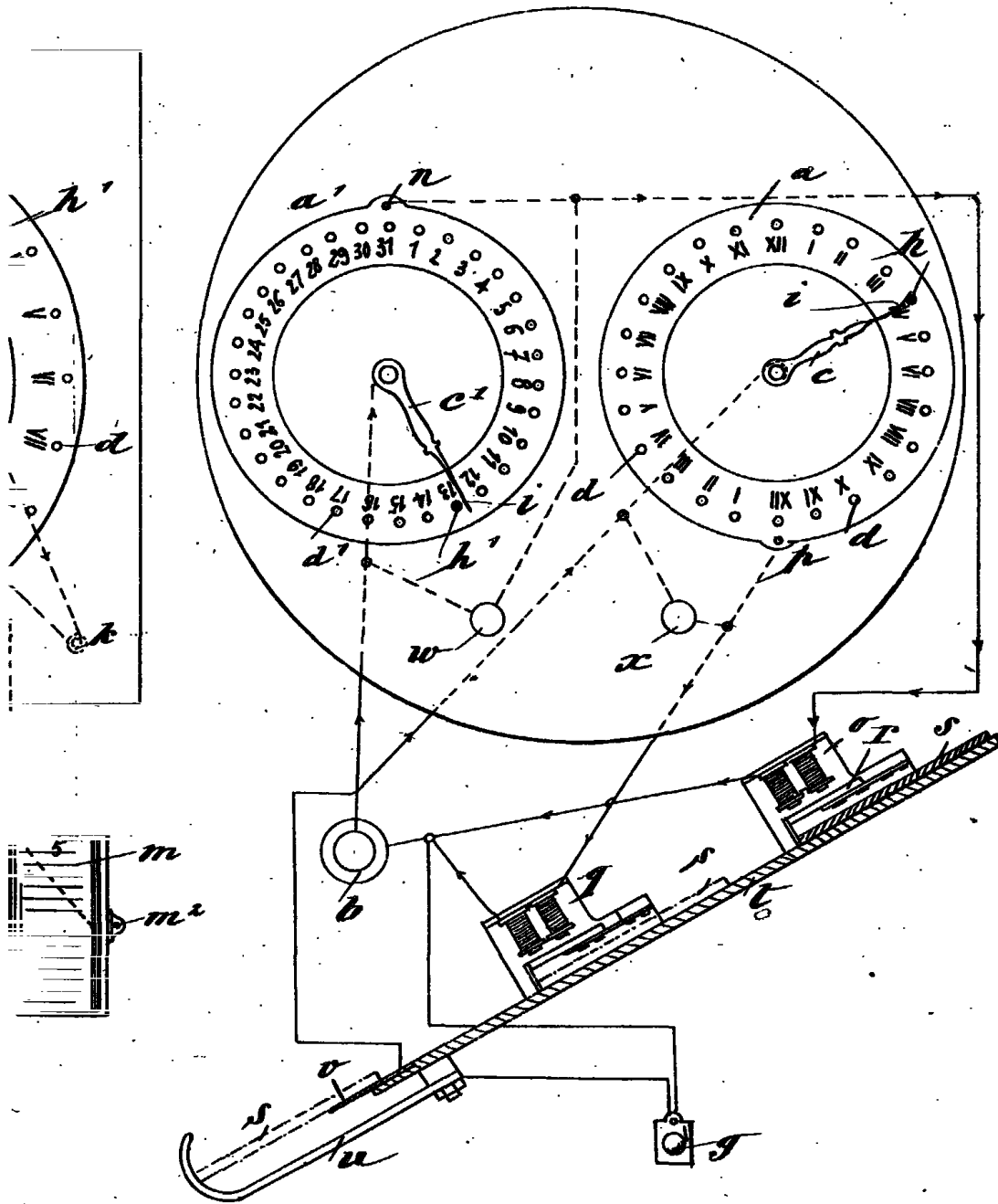


Fig. 3.



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Fig. 4.

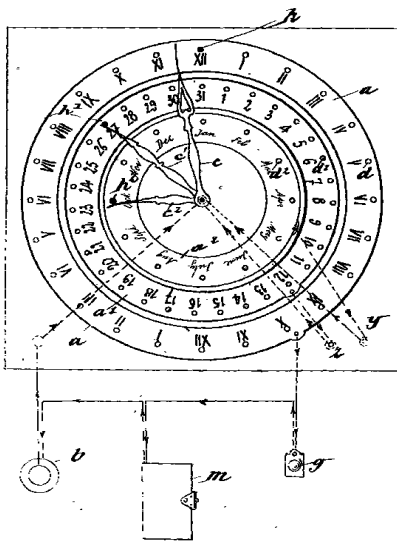


Fig. 5.

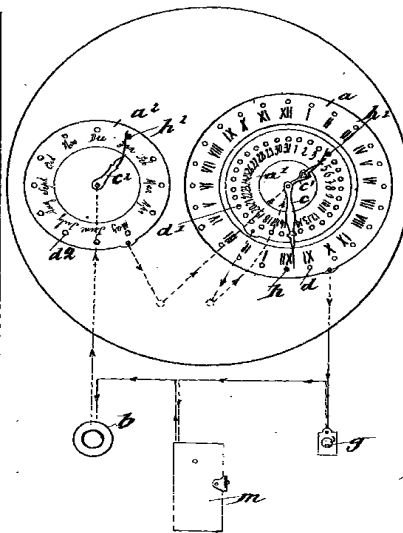
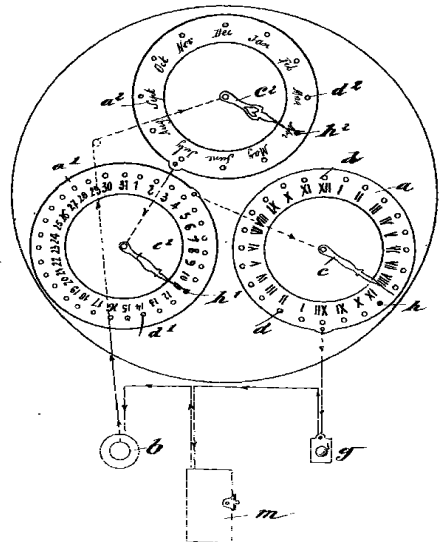


Fig. 6.



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Fig. 4.

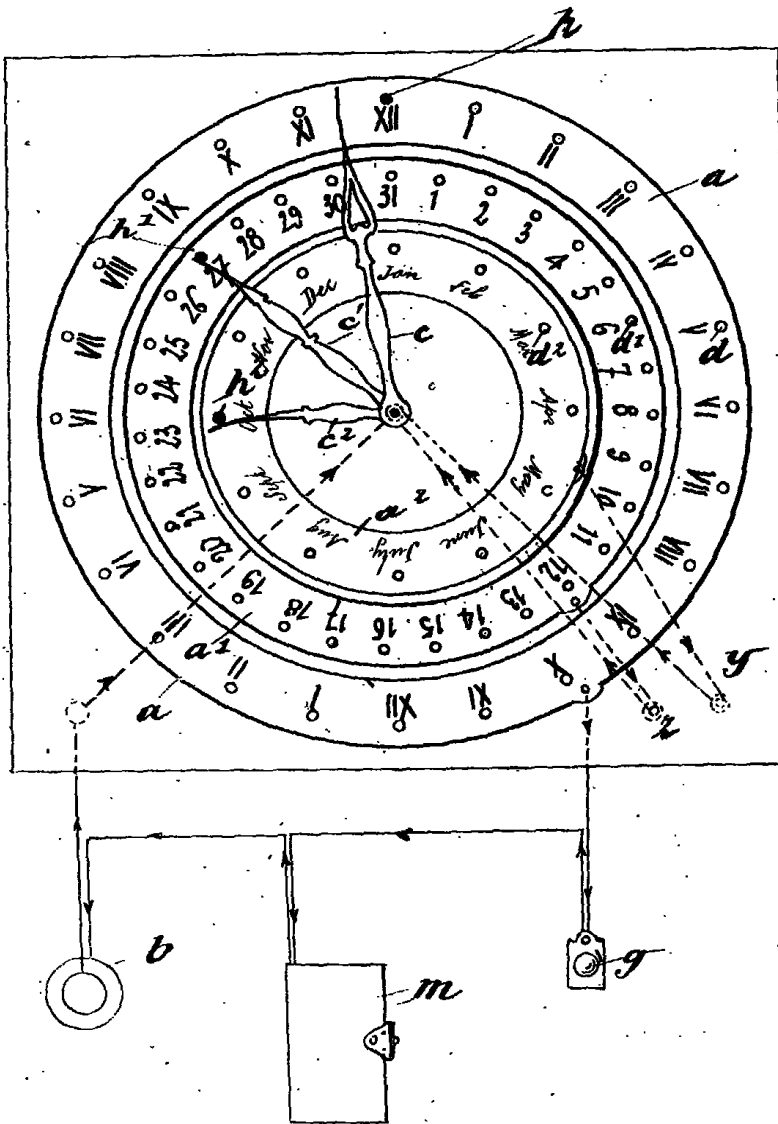
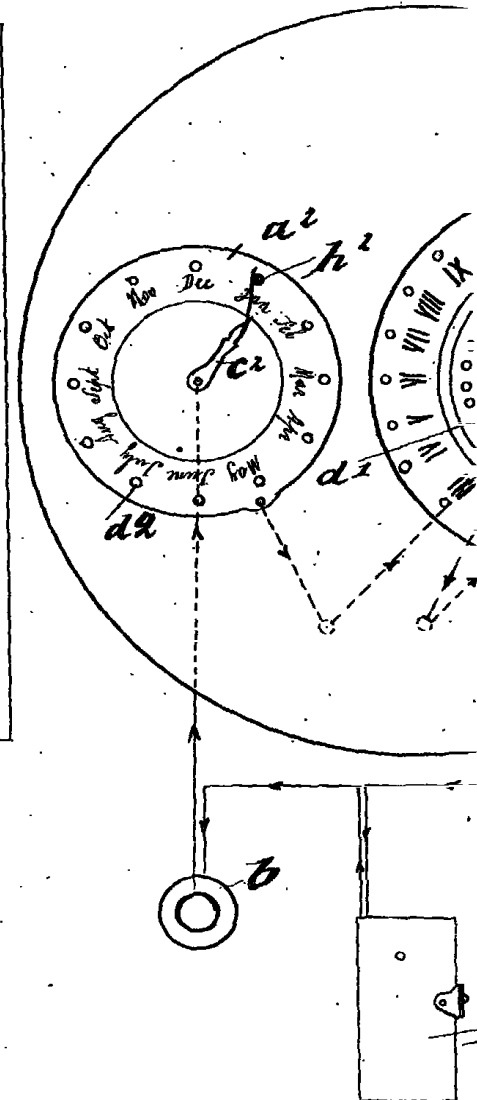
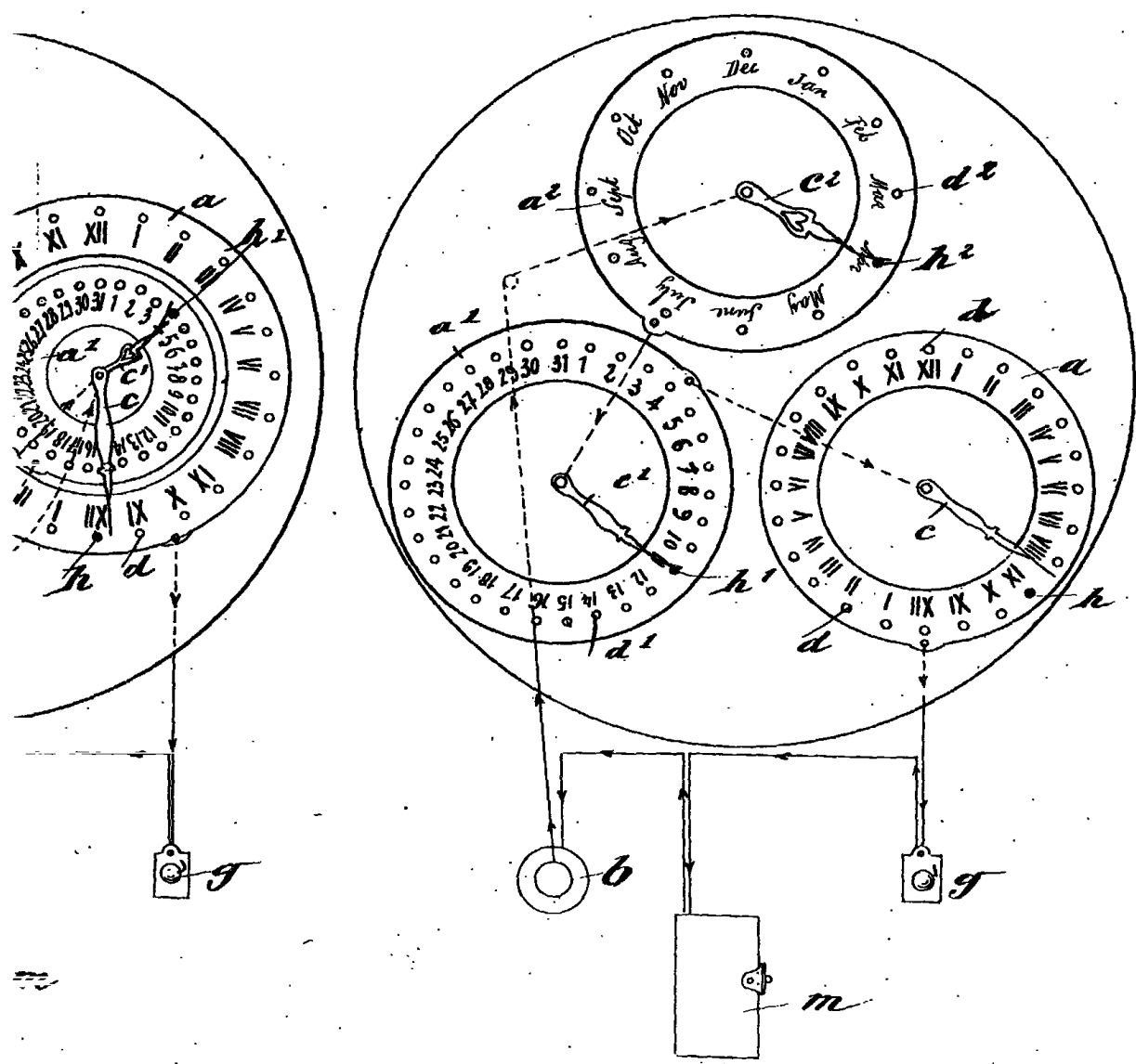


Fig.



5.

Fig. 6.



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