

No. 815,072.

PATENTED MAR. 13, 1906.

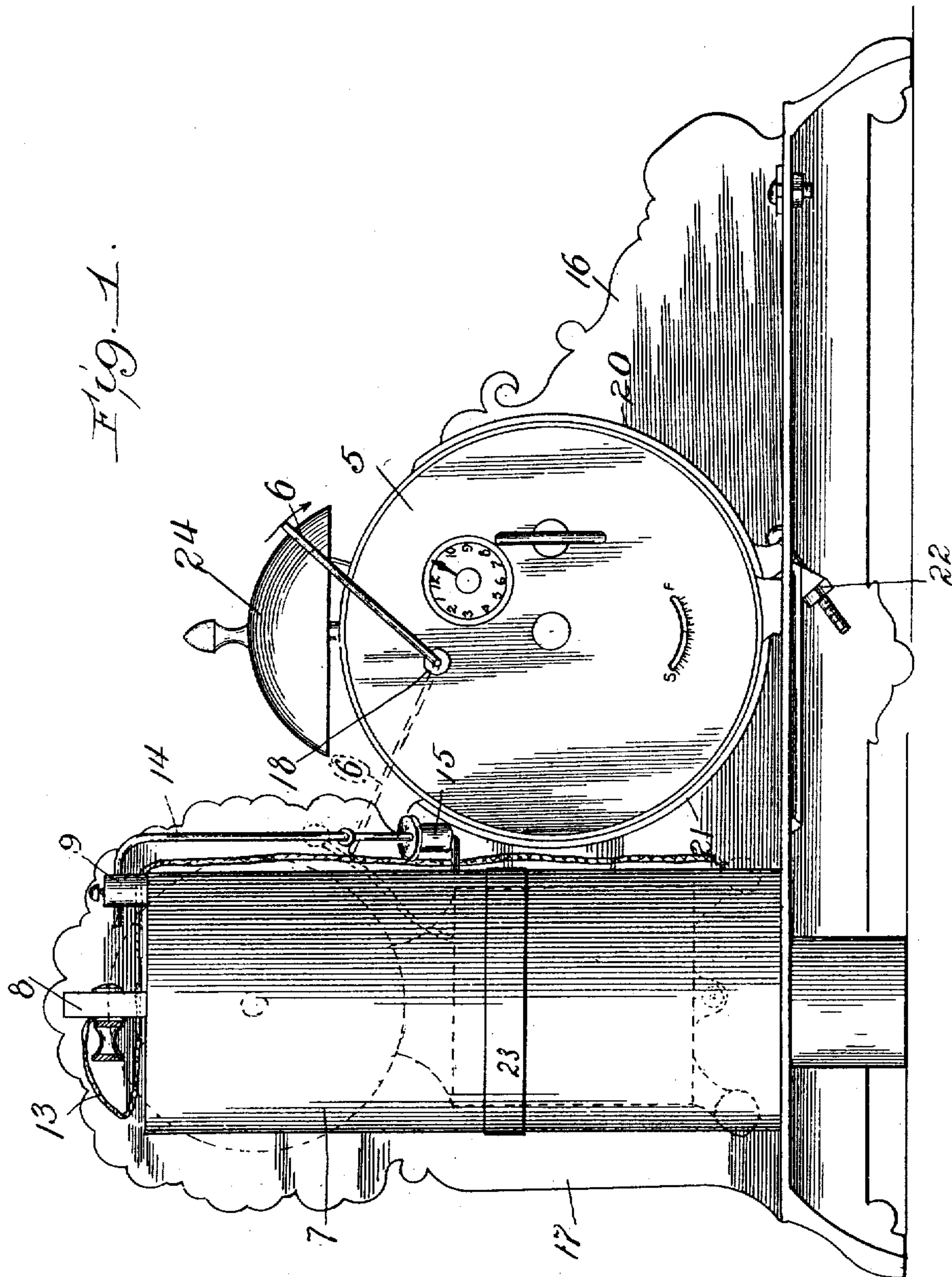
G. C. DANCHE, DEC'D.

A. Y. DANCHE, EXECUTRIX.

ELECTRIC ALARM CLOCK.

APPLICATION FILED JUNE 13, 1904.

3 SHEETS—SHEET 1.



Witnesses:

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Ray White.

Inventor
Augusta Y. Dancbe,
Executrix of George C. Dancbe deceased.

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3 SHEETS—SHEET 2.

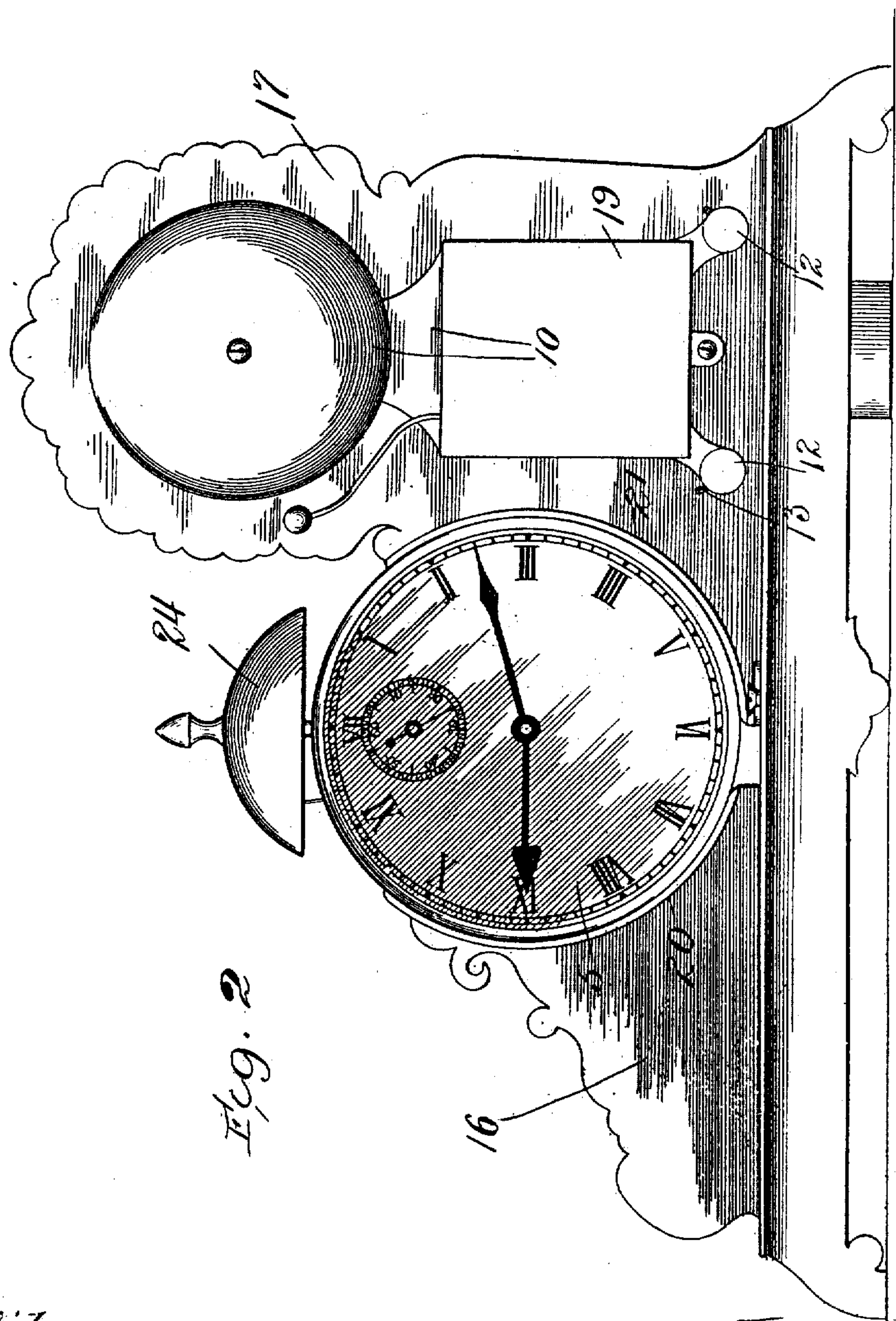


Fig. 2

Witnesses:
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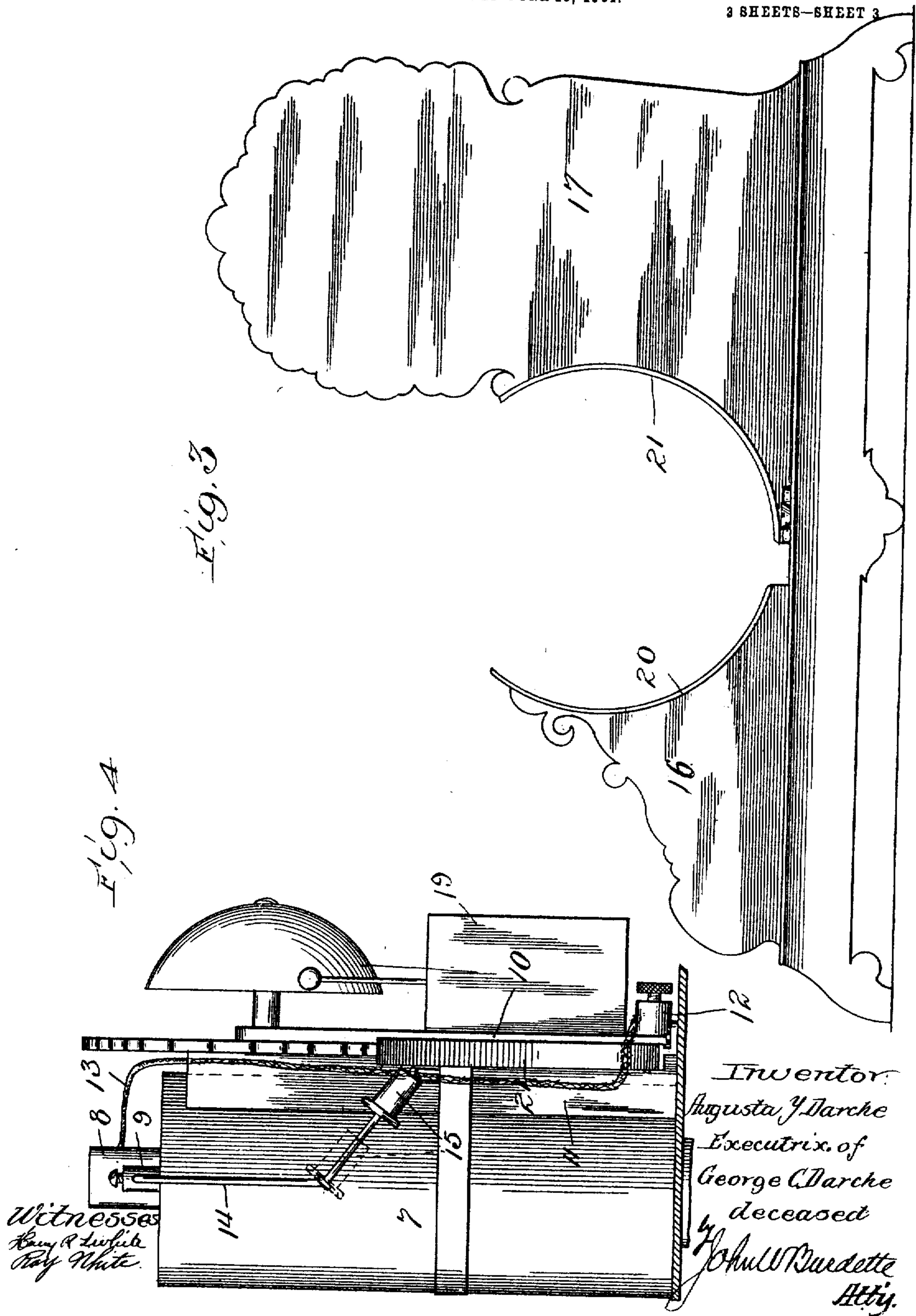
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3 SHEETS—SHEET 3



UNITED STATES PATENT OFFICE.

AUGUSTA Y. DARCHE, OF CHICAGO, ILLINOIS, EXECUTRIX OF GEORGE C. DARCHE, DECEASED.

ELECTRIC ALARM-CLOCK.

No. 815,072.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed June 13, 1904. Serial No. 212,328.

To all whom it may concern:

Be it known that GEORGE C. DARCHE, deceased, prior to his death being a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, invented certain new and useful Improvements in Electric Alarm-Clocks; and I, AUGUSTA Y. DARCHE, his executrix, do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the class of electric alarm-clocks in which the operation of an ordinary mechanical alarm is caused to close an electric circuit and to cause thereby an electric alarm; and the object of the invention is to provide a simple, cheap, and efficient means by which an ordinary mechanical alarm-clock may be connected with an electric alarm without taking the clock apart and without necessarily soldering joints and without introducing wires or other mechanism into the works or movement of the clock.

By this invention any mechanical alarm-clock may be connected with an electric alarm without removing the clock's case and without inserting any wire or other mechanism within it, the only alteration, if any, in the clock consisting in the substitution for the winding-key of the alarm of an arm, of metal, adapted to be revolved by the arbor and to make contact with the pole of a battery. The clock may at any time without alteration or repairs be removed from the frame and used as originally designed for a mechanical alarm-clock. No wires or other devices need be removed or replaced. The said arm may be used as a winding-key or may be so attached to the winding-key by a clamp, catch, or spring as to permit the key to remain in position so the arm may be detached therefrom and leave the clock precisely as it came from the manufacturer, all of which will more clearly appear from the drawings and specifications which follow.

The invention consists in a new arrangement and disposition of the essential elements and the omission of those not required, whereby a new combination is effected and unnecessary wires and contacts are eliminated and the tendency and opportunities for disar-

agement and consequent inefficiency are avoided and cheapness and simplicity of construction and maintenance are attained and reliability of operation is increased.

In the drawings the same reference-numerals are used in the several figures to indicate the same parts.

Figure 1 represents a rear view of device embodying this invention. Fig. 2 represents a front view of the same. Fig. 3 shows a metal frame adapted to receive and support and connect the parts of this device, as shown in Figs. 1 and 2. Fig. 4 is a side view of the battery and electric bell and connections separated from the clock for greater convenience of illustration.

In the figures, 5 is an ordinary mechanical alarm-clock supplied with the usual and ordinary arbor for winding the mechanical alarm thereof.

6 is a metal arm attached to the winding-arbor of the alarm in place of the key.

7 is a common electric battery. 8 is a binding-post attached to the carbon of the same. 9 is a binding-post attached to the zinc of the same.

10 is an ordinary electric or magnetic bell and appurtenances.

11 is a block of insulating material between the battery and frame, Fig. 3.

12 is a binding-post of the magnet appurtenant to 10.

13 is a wire connecting 8 and 12.

14 is a metallic bar attached to the binding-post 9 and extending across the path of the arm 6 in its revolution.

15 is a thimble of insulating material loosely fitted on the bar 14, adapted to be adjusted thereon.

16 is a portion of the frame for the clock movable laterally upon its base, and thereby adapted to be forced against the clock and to press the same firmly against the opposite portion of the frame 17.

17 is a portion of the frame, made of metal, adapted to support the electric bell and battery and to connect electrically the clock and the magnet of the electric bell.

18 is an ordinary tap, threaded to fit and screwed on the winding-arbor of the alarm, and into which by means of a proper screw-thread on its end the arm 6 is screwed.

19 denotes an ordinary electromagnet, such as is commonly used with electrical alarms, connected, by means of the binding-post 12 and the frame 17, with the electric bell 10.

20 is the inner surface of the adjustable portion 16 of the frame, curved and adapted to fit the circumference of the clock. 21 is the inner surface of the opposing portion 17 of the frame, similarly curved.

22 is a set-screw or bolt and nut adapted to adjust the adjustable portion 16 of the frame and to force it against the clock-case.

23 is a band of tin or other suitable material supporting the battery and retaining it in position, the ends of 23 being made fast to opposite sides of the insulating-block.

24 is a mechanical alarm-bell pertaining to the clock.

The operation of this device is as follows: The binding-posts 8 and 12 are connected by the wire 13. One end of the metal bar 14 is firmly attached to the binding-post 9. The other end may be disposed of in any suitable manner. In the drawings it is shown to be inserted into the insulating-block 11 to insure greater rigidity. The insulating-thimble 15 is placed on the metal bar 14. The key to the winding-arbor having been removed, the metal tap 18 is screwed on the arbor and the metal arm 6 is screwed into the tap and is bent at a suitable angle and extended to such a length that it is adapted to come into contact with the bar 14 in the course of a revolution, as shown by the dotted lines in Fig. 1. The clock is placed in position in the frame between the adjustable portion 16 and the fixed portion 17. The adjustable portion of the frame 16 is forced by any suitable means against the side of the clock, pressing the clock firmly against the opposing curved face of the stationary metal portion of the frame, to which an electric bell is attached and in electrical contact. The alarm is wound and set in the usual manner, as contemplated by its structure for a mechanical alarm. At the time set it is discharged and in that operation by the revolution of the winding-arbor the arm 6 is revolved to the position shown by the dotted lines in Fig. 1 and makes contact with the bar 14, completing the electric circuit by way of the clock 5, the stand 17, the bell 10, and the wire 13. The alarm will continue to sound until the battery is exhausted, unless the circuit is broken. This may be done by separating the metal arm 6 from the metal bar 14 and moving the insulating-thimble 15 into the position shown by the dotted lines in Fig. 4, interposed to receive the contact of the arm 6. The thimble 15 is formed with a suitable groove or shoulder to receive the arm 6, adapted to retain it in its insulating position until released by removing the arm 6, when it falls into its origi-

nal position by its own weight and leaves the bar 14 again exposed to receive the contact of the arm 6.

It is not intended to limit this patent to the precise forms shown and described. The forms here shown illustrate the principle. In detail they may be varied in many ways. For example, the bar 14 may be of great variety of forms and may be attached to the battery in a great many different ways. It may consist of a short straight bar or a loop or any other form, depending upon the position of the battery with reference to the clock, every alteration of which would require a corresponding modification of the form of the bar 14 and the arm 6 to so adapt them that the arm 6 would make contact with the bar 14 as the former revolved. The bar may be entirely omitted and contact made by the arm 6 directly upon the pole of the battery. So, also, the method of attaching the arm 6 to the winding-arbor may be various. In the drawings the key is shown to have been removed and the threaded tap inserted in its stead, and a thread being made up on the end of the arm 6 the arm 6 is screwed into the tap; but it is obvious that this arm may be attached to the arbor in a variety of ways or to the key without removing the same. It might be split for a suitable distance at one end and the key inserted between the severed portions. It may be attached by a clamp or by a set-screw or soldered on or in any other manner by which it may be adapted to revolve with the winding-arbor and make due electrical contact with the battery; so, also, as to the electrical bell, which may be, if desired, grounded directly upon the clock-case in any desired manner by direct contact or in any other way without the use of the frame, Fig. 3.

In the drawings a metal frame is introduced as a common electrical ground for the bell and clock; but this is not essential, as the frame may be of any material, so long as the electrical contact is established between the bell and the case of the clock by its means. An ornamental frame of wood or any non-conducting material may be used, provided a strip or section of metal is introduced, making connection between the clock and the magnet.

In operation the current is taken off binding-post 8, flows through wire 13 to binding-post 12 on the bell, through the coils in the bell, then to the frame 17 from the other binding-post 12, thence through arm 6, bar 14, and back to the battery through binding-post 9. When the mechanical alarm mechanism brings arm 6 into contact with bar 14, the current begins to flow and continues to flow and operates the alarm mechanism until the insulating-thimble 15 is interposed between arm 6 and bar 14. In this way a continuous

alarm is given and continues to operate until it is manually stopped.

What is claimed is—

1. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary electrode arranged in the path of movement of said arm and an insulating-sleeve movably mounted on said stationary electrode and adapted to be positioned between said arm and stationary electrode for preventing contact therebetween and thus maintaining the circuit open.

2. A signal mechanism, comprising a mechanical alarm-clock, a metal arm connected to the alarm mechanism of said alarm-clock and adapted to be moved thereby, an electric signal, a circuit for said signal including a source of current, said electric signal, a stationary contact secured to said source of current and having stops formed thereon, a movable contact on said mechanical alarm-clock, and an insulating-sleeve adjustably mounted on the said stationary contact, the said sleeve being limited in its movement by said stops.

3. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact arranged in the path of movement of said arm, and an insulating-sleeve mounted on said stationary contact formed with means projecting therefrom,

adapted to engage said movable arm for maintaining said sleeve in position to hold apart the said contact-points.

4. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact positioned in the path of said arm, an insulating-sleeve carried by said contact, said contact being arranged to permit said sleeve to be moved by gravity when said arm is on the sleeve adapted to engage the arm for sustaining the sleeve between the arm and contact when the arm is in contact with the sleeve.

5. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact arranged in the path of movement of said arm and an insulating-sleeve mounted on said stationary contact formed with a flange on one end thereof, said flange being adapted to engage said movable arm for maintaining said sleeve in position between the contacts.

Dated at Chicago, Illinois, this 27th day of May, A. D. 1904.

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Witnesses:

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