Sept. 25, 1923. 1,469,056

G. I. SULLIVAN

REMINDING DEVICE

Filed Oct. 18, 1922

Fig. 2.

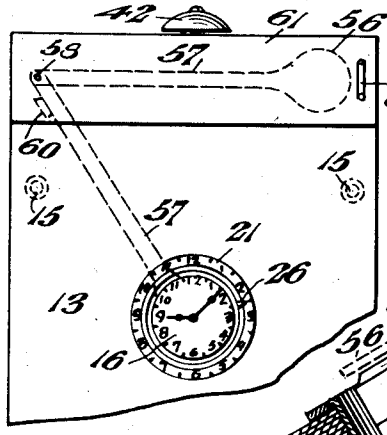


Fig. 1.

Fig. 3.

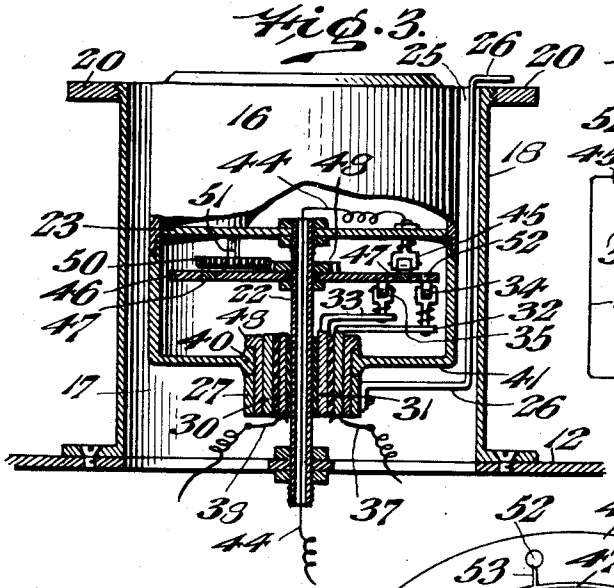


Fig. 4.

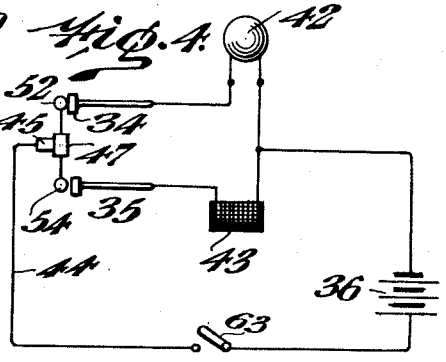
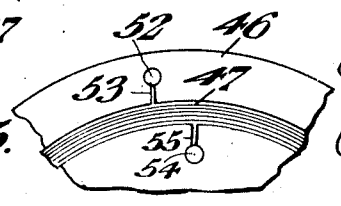


Fig. 5.



INVENTOR
George I. Sullivan.
BY
Robt M. Barr.
ATTORNEY

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UNITED STATES PATENT OFFICE.

GEORGE I. SULLIVAN, OF PHILADELPHIA, PENNSYLVANIA.

REMINDING DEVICE.

Application filed October 18, 1922. Serial No. 595,244.

To all whom it may concern:

Be it known that I, GEORGE I. SULLIVAN, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Reminding Devices, of which the following is a specification.

Some of the objects of the present invention are to provide means for causing a signal to be given at a predetermined future time as a reminder that an appointed time has arrived; to provide a device which can be set to operate at a future hour or fraction thereof as a reminder to the user of the device that a certain time has arrived; to provide a time controlled signal in conjunction with a memorandum pad or calendar; to provide a portable unit arranged to serve in an office, a home, a hospital, or any other place as a signalling means to indicate a given time has arrived for doing a certain thing, such as keeping an appointment, making a telephone call, attending a meeting, or any other thing or event; to provide means for indicating a signal has been operated in the absence of the user of a reminding device and that an appointed time has passed; and to provide other improvements as will hereinafter appear.

In the accompanying drawings, Fig. 1 represents a side elevation in part section of a reminding device embodying one form of the present invention; Fig. 2 represents a plan of the same upon a reduced scale; Fig. 3 represents an enlarged section on line 3—3 of Fig. 1; Fig. 4 represents a diagram of the electrical circuits; and Fig. 5 represents a detail of a portion of the circuit control contactor.

Referring to the drawings, one form of the present invention consists of a base frame or casing 10, formed of pressed metal or any other suitable material arranged to provide a compartment 11, and a supporting surface 12, the latter being preferably inclined in a suitable manner to receive a removable leaf memorandum pad or calendar pad 13. The pad 13, as here shown, is mounted upon a plate 14, which is arranged to be adjusted relative to the surface 12 by means of thumb-screws 15, or any other means, so that as the thickness of the pad is diminished by the successive removal of its sheets, the top or exposed sheet always lies in substantially the same plane.

For the purpose of mounting a clock 16 in position so that its face is visible, the pad 13 is provided with a through opening 17, which is arranged to snugly receive a sleeve 18, the length of which conforms substantially to the original thickness of the pad 13. The outer end of the sleeve 18 is threaded to receive a ring 20, which seats upon the pad 13 and has its visible face graduated to form a dial 21 with any desired time indications. These time indications are respectively arranged to be in radial alinement with the corresponding time intervals upon the face of the clock 16. The inner end of the sleeve 18 is riveted or otherwise made fast to the base plate 12 of the casing 10. The clock 16 is co-axially located in the sleeve 18, being rigidly held by a tube 22, which is secured to the back plate 23 of the clock and extends outwardly and joins a fixed part of the casing 10. In assembled condition there is an annular space 25 between the clock 16 and the sleeve 18 for a purpose to be later explained.

As a means for setting the device to give a signal at a predetermined time, an index arm or pointer 26 is provided, having a free end projecting through the space 25 into juxtaposed relation to the dial 21, while its fixed end is secured to a collar 27 fast to a rotatable commutator 28. The body portion of the commutator 28 is of fibre, or other suitable insulating material, and has two concentrically arranged conducting rings or bushings 30 and 31, both extending from end to end of the said body and coaxial with respect to the tube 22 upon which the commutator is free to be rotated. The inner end of the ring 30 has an arm 32 of conducting material fixed thereon in a position to aline with the index 26, and a similar arm 33 of conducting material is fixed to the inner end of the ring 31, also in position to aline with the index 26 though out of contact with the arm 32. The respective arms 32 and 33 carry spring-pressed contact rollers 34 and 35 because each arm is in a separate electrical circuit, though a common battery 36 is preferably employed. The outer end of the ring 30 forms a conducting path for a contactor brush 37 which is suitably mounted and held in contact with the

ring 30 at all times, while the outer end of the ring 31 similarly forms a conducting path for a contactor brush 38 which is suitably mounted and held in contact therewith. The commutator 28 is held against axial movement by a circumferential bearing 40 in a cap 41, which has threaded engagement with the clock plate 23. The circuit of the arm 32 includes a signal in the form of an electrically operated bell 42, while the circuit of the arm 33 includes an electromagnet 43, and a common return conductor 44 leads from a spring-pressed contact roller 45 to the battery 41. This conductor 44 for convenience passes through the tube 22.

In order to selectively control the aforesaid circuits, a movable contactor in the form of a disk 46 of insulating material is provided having a ring 47 of conducting material formed therein and concentric with the axis of rotation. The contact roller 45 is insulated from and mounted upon the plate 23 in position to contact with the ring 47, while the disk 46 is rotatably mounted upon the tube 22 and is arranged to be driven by a pinion 48 fast thereto and in mesh with a clock-wheel 50 fixed to a staff 51 which drives the hour hand of the clock 16. A contactor pin 52 is secured to the disk 46 at a distance, radially considered, equal to the radial distance of the roller contact 34 from the tube 22, so that the latter is in the path of movement of the pin 52 and makes contact therewith at a predetermined time. The pin 52 is electrically connected to the ring 47 by a conductor 53 or any other suitable means. A second contactor pin 54 is secured to the disk 46 at a distance, radially considered, equal to the radial distance of the roller contact 35 from the tube 22, so that the latter is in the path of movement of the pin 54 and makes contact therewith at a predetermined time. Circumferentially considered the pin 54 is spaced a given distance to one side of the pin 52 so that the circuit including the pin 52 is arranged to be closed a predetermined interval in advance of the circuit including the pin 54. The pin 54 is electrically connected to the ring 47 by a conductor 55 or any other suitable means.

For the purpose of setting a signal to indicate the time circuit controlled by the pin 52 has passed, a shutter 56 is provided which is mounted upon an arm 57 pivoted at 58 so that when swung to operative position the shutter 56 will cover and conceal the face of the clock 16. The shutter 56 is arranged to swing by gravity and its limit of movement is determined by a stop 60 fixed to the casing 10 in the path of the arm 57. Normally this shutter 56 is concealed by a flange 61 of the casing 10, being held thereunder by a spring hook 62 which forms the armature of the electro-magnet 43. In use the exposed face of the shutter 56 will be provided with a notice or any suitable legend whereby the user may be informed as to its function.

The operation of the device is as follows:—In assembled condition the dial 21 is screwed into position so that its time graduations are accurately alined with the corresponding time indications of the clock 16, and the device is then ready for use. For example it is desired to keep an appointment at ten o'clock, so the arm or index 26 is moved until it stands opposite to the ten o'clock graduation upon the dial 21. This movement of the index 26 is transmitted to the commutator 28 which is correspondingly moved to the designated position, which is one with the contact arms spaced a distance in advance of the pins 52 and 54. As the clock staff of the hour hand moves it gradually brings the pin 52 nearer to the contact roller 34 and at the predetermined time, namely ten o'clock, they make contact and thereby close the circuit which includes the bell 42, which then signals that the time of the appointment has arrived. The user may then again set the index for another time of which notice is to be given and the operation is repeated. In case the user is out or not within hearing of the signal at the time it functions, the disk 46 continues to move with the clock movement and within a short period it brings the second pin 54 into engagement with the roller contact 35 whereupon the second circuit is closed and the electromagnet 43 is energized to move the spring armature 62 out of the holding or locking position and thus releases the shutter, which then moves by gravity and assumes a position covering the face of the clock or timepiece. When the user returns this condition is noticed and the time of the appointment can be checked at once. The shutter is then manually returned to its inoperative position locked by the armaure until its circuit is again closed by a similar condition.

It is desirable to provide a switch 63 at a suitable place to break both of the control circuits when the device is not in use, the said switch being located at a convenient place on the casing for ready access thereto.

It will now be apparent that a complete unitary reminding device has been devised wherein an automatic provision has been made for giving notice of any desired fixed time, while the setting thereof is not limited to hours or half-hours but can be employed accurately to fractions thereof. Also the signal equipment in no way interferes with the use of the pad as a memorandum device but cooperates therewith in that the appointment is written upon the pad and the signal mechanism set at the same time.

While only a single form is shown in which the invention may be embodied, it is to be understood that the invention is not limited to any specific construction but

might be employed in various forms without departing from the spirit of the invention or the scope of the appended claims.

Having now fully described my invention, I claim:—

1. A reminding device comprising in combination a pad, a time-piece associated therewith, a signal, means controlled by said time-piece for operating said signal at a predetermined time, and means operating automotically a predetermined time after said signal operating means to indicate said signal has functioned.

2. A reminding device comprising in combination a pad, a time-piece associated therewith, a dial encircling said time-piece, an index arranged to cooperate with said dial, a commutator connected to said index and mounted for rotary adjustment, an electrically operated signal, a circuit including said signal and having a terminal connected to said commutator, and means controlled by said time-piece and including the other terminal of said circuit for closing said circuit to operate said signal at a predetermined time.

3. A reminding device comprising in combination a pad, a time-piece associated therewith, a dial encircling said time-piece, an index arranged to cooperate with said dial, a commutator connected to said index and mounted for rotary adjustment, an electrically operated signal, a circuit including said signal and having a terminal connected to said commutator, means controlled by said time-piece and including the other terminal of said circuit for closing said circuit to operate said signal at a predetermined time, and means also actuated by said time-piece controlled means for indicating said signal has operated.

4. A reminding device comprising in combination a pad, a time-piece associated therewith, a dial graduated in time units encircling said time-piece, an index arranged to cooperate with said dial, a commutator connected to said index and mounted for rotary adjustment, a signal, a circuit including said signal and having one terminal connected to said commutator, an electromagnet, means controlled by said magnet for setting an indicating device, a circuit including said magnet and having one terminal connected to said commutator but insulated from said signal terminal, and means controlled by said time-piece for selectively closing said circuits.

5. A reminding device comprising in combination a pad, a time-piece associated therewith, a dial graduated in time units encircling said time-piece, an index arranged to cooperate with said dial, a commutator connected to said index and mounted for rotary adjustment, a signal, a circuit including said signal and having one terminal connected to said commutator, an electromagnet, means controlled by said magnet for setting an indicating device, a circuit including said magnet and having one terminal connected to said commutator but insulated from said signal terminal, and means controlled by said time-piece for successively closing said circuits at predetermined times.

6. A reminding device comprising in combination a pad, a time-piece associated therewith, a signal, means controlled by said time-piece for operating said signal at a predetermined time, and means operating automatically a predetermined time after said signal operating means to conceal the face of said time-piece.

7. A reminding device comprising in combination a pad, a time-piece associated therewith, means arranged to conceal the face of said time-piece at a predetermined time, and means controlled by said time-piece for causing said concealing means to function.

Signed at Philadelphia, in the county of Philadelphia, State of Pennsylvania, this 17 day of October, 1922.

GEORGE I. SULLIVAN.