No. 824,262. PATENTED JUNE 26, 1906.

J. M. POWELL.

ELECTRIC TIME SIGNAL.

APPLICATION FILED AUG. 31, 1905.

2 SHEETS—SHEET 1.

Fig. 1

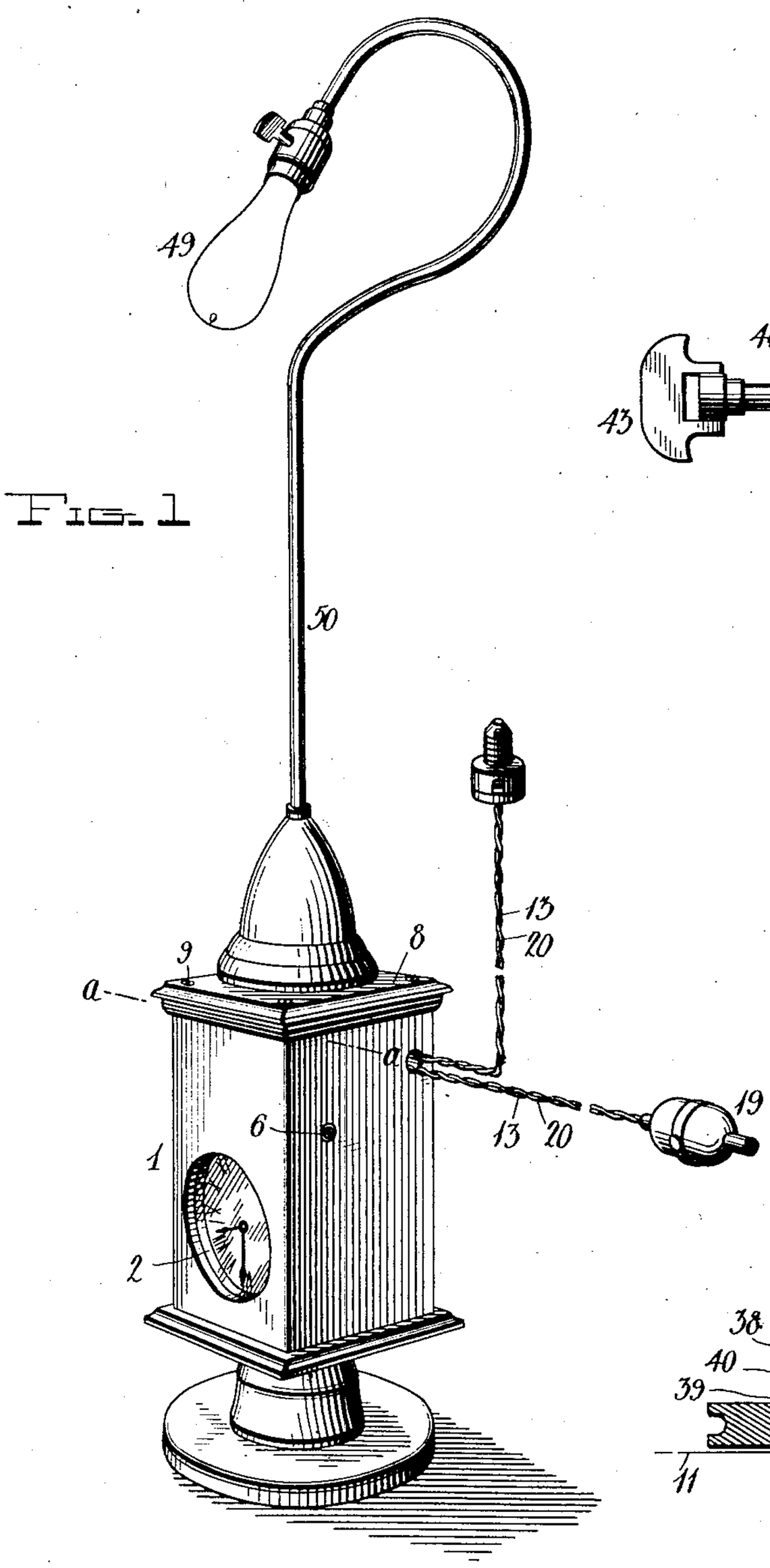


Fig. 4

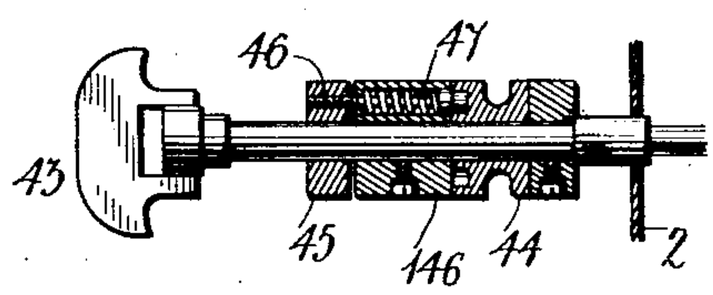
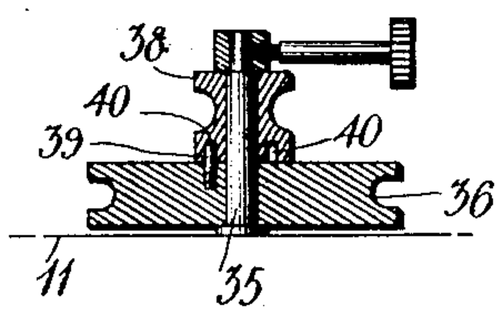


Fig. 5



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2 SHEETS—SHEET 2.

FIG. 2

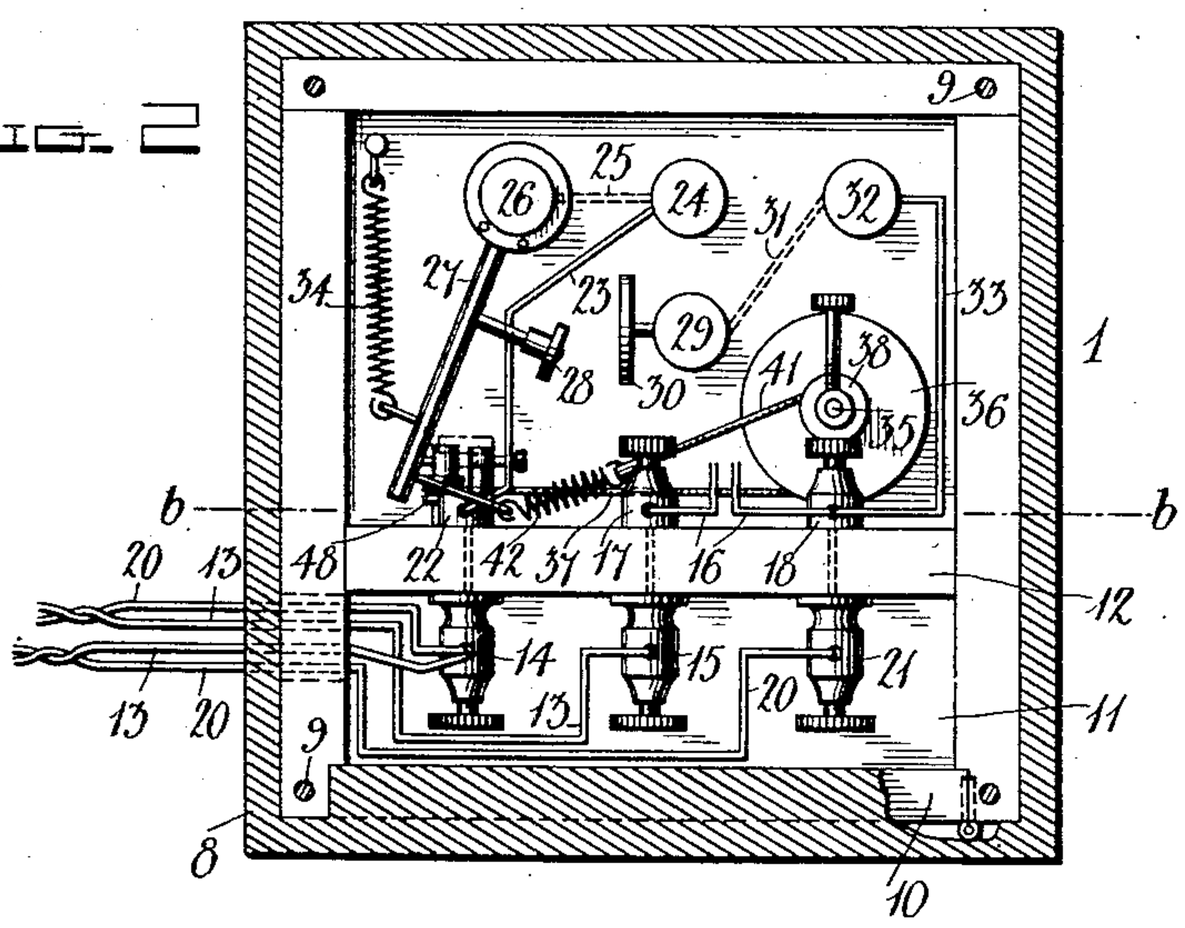
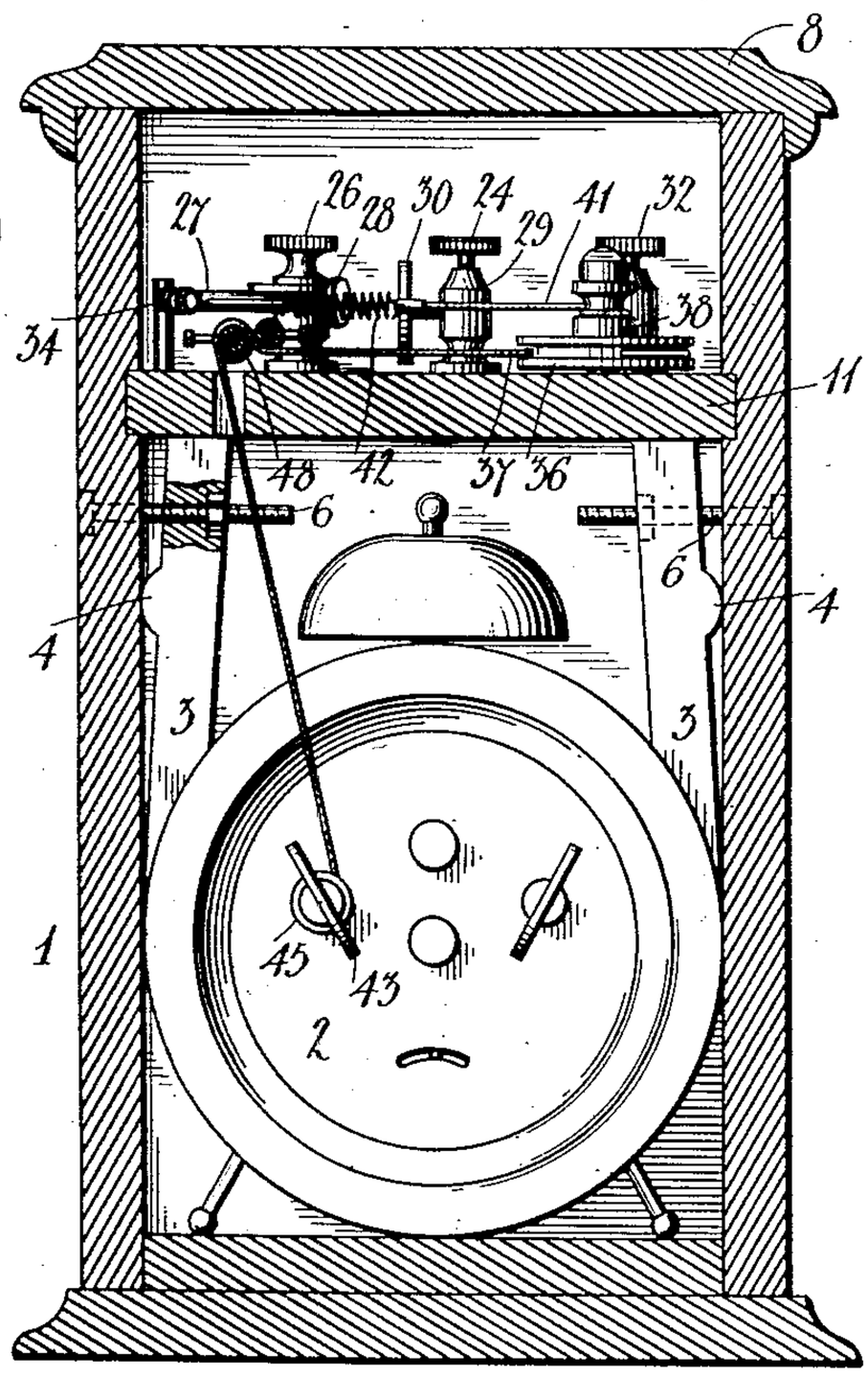


FIG. 3



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ELECTRIC TIME-SIGNAL.

No. 824,262. Specification of Letters Patent. Patented June 26, 1906.

Application filed August 31, 1905. Serial No. 276,583.

To all whom it may concern:

Be it known that I, JOHN M. POWELL, a citizen of the United States, residing at Potecasi, in the county of Northampton and State of North Carolina, have invented certain new and useful Improvements in Electric Signaling Devices; and I do 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.

My invention is an improved electric signaling device to be used in connection with an alarm-clock or other time mechanism and actuated by the alarm-clock or other time mechanism to turn on the light at a predetermined hour; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of an apparatus embodying my invention. Fig. 2 is a horizontal sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 1 and showing the switch. Fig. 3 is a vertical sectional view of the same, taken on the plane indicated by the line *b b* of Fig. 2, showing the connections between the winding-arbor of the alarm mechanism of the clock and the switch to operate the latter and cause the electric lamp to be lighted when the alarm mechanism operates. Fig. 4 is a detail sectional view of the winding mechanism for the alarm apparatus, and Fig. 5 is a similar view showing the construction of the drum which operates the switch-arm.

In the embodiment of my invention I provide a suitable box or casing 1, which may be of any suitable size, shape, or design and is preferably ornamental in appearance. In the lower portion of the same is secured an alarm-clock 2, which is held in place by means of a pair of clamp-bars 3, each of which is formed with a fulcrum-piece 4 to bear against one side of the box or casing, and screws 6, which operate in openings in the sides of the box or casing and the inner portions of which operate in screw-threaded openings or nuts with which the clamping-bars are provided. The lower ends of the clamping-bars bear against opposite sides of the clock, and it will be understood that by appropriately turning the screws the clamping-bars may be caused to securely clamp the clock in place. The face of the clock is disposed opposite an opening in the face or front side of the box or casing. The latter is provided with a removable top 8, secured in place by screws 9 or other suitable devices. Said box or casing is further provided with a hinged door 10 in its rear side to permit access to the clock. In the upper portion of the box or casing is a slide 11, opposite sides of which work in grooves in the inner faces of the sides of the box or casing. Said slide forms a base for an electric switch, hereinafter described, and is provided with an outstanding board 12 near one side. The feed-wires 13 are connected to binding-posts 14 15 on the board 12. The electric-light wires 16 are connected to binding-posts 17 18 on said board. A push-button or other circuit-closer 19 is connected by conductors 20 to the binding-post 14 and to a post 21, which is also on the board 12. Said post 21 is electrically connected to the post 18. The posts 15 and 17 are electrically connected, and the post 14 is electrically connected to a post 22, and the latter is connected by a conductor 23 to a post 24. Said post 24 is connected by a conductor 25 to a pivot-post 26, which carries a pivoted switch-arm 27, having an electrode 28. A post 29 has an electrode 30 opposed to the electrode 28 and is connected by a conductor 31 to a post 32, the latter being connected by a conductor 33 to the binding-post 18. A spring 34 is connected to the switch-arm 27 to normally retain the latter in open position.

On the slide 11 is secured a vertical arbor 35. On the said arbor revolves a drum 36, to which is connected an operating-chain 37. A drum 38, which is smaller than the drum 36, also revolves on the said arbor with said drum 36 and is detachably connected to the latter by means of a dowel-pin 39, which may be engaged with either of a number of openings 40 with which the drum 36 is provided, so that the drum 36 may be adjusted with reference to the drum 38. A chain or other suitable flexible connecting element 41 is attached to the drum 38 and wound thereon reversely with respect to the chain 38, said chain or element 41 being connected to a spring 42, which is connected to the switch-arm 27, said spring being here shown as a coiled extensile spring.

A winding-key 43 is attached to the winding-arbor of the alarm mechanism of the clock and is provided with a drum 44, which is free to revolve thereon, and with a shiftable collar 45, provided with a dowel-pin 46 to

engage the drum 44 and lock the latter to the winding-key. Between the said collar and the said drum is a sleeve 46, which is secured to the key for revolution therewith and has an opening through which the dowel-pin of the collar 45 extends, and in the said opening is a spring 47, which moves said dowel-pin normally in locking position with respect to the drum. The chain 37 is attached to the said drum, and the latter is so adjusted with respect to the winding-key 43 that when the key is turned to wind up the alarm mechanism it slackens the chain 37, causes the spring 34 to draw the switch-arm 27 outwardly to break contact between the electrodes 28 30, and to also unwind the chain 41 from the drum 38, hence causing the latter to revolve the drum 36 to take up the slack in said chain 37. The latter passes over a direction sheave or pulley 48, which is carried by the board 12 on the slide.

It will be understood that since the switch on the slide 11 is opened by the action of the key in winding the alarm mechanism it will be closed by the reverse rotation of the key when the alarm mechanism is sprung, and hence the electric light will be turned on simultaneously with the springing of the alarm, the current passing from the battery through one of the feed-wires 13 to the post 15, from the latter to the post 17, the through the conductors 16 and electric lamp to the post 18, then through the conductor 33, post 32, conductor 31, post 29, electrodes 30 28, conductor 27, post 26, conductor 25, post 24, conductor 23, posts 22 and 14, and the other feed-wire 13, back to the battery. If at any time before the alarm is sprung it is desired to light the electric lamp, this may be done by means of the press-button or circuit-closer 19, as will be understood, the current passing from the battery through one of the feed-wires 13 to the post 15, from the latter to the post 17, then through the conductors 16 and the electric lamp to the post 18, then to the post 21, through the conductors 20 to the post 14, and from the latter through the other conductor 13, back to the battery. The time-mechanism-actuated switch (indicated by the pivoted arm 27) and electrodes 28 29 and the press-button or circuit-closer 19 are connected to the lamp-circuit by independent shunts, as will be understood, so that either may be operated independently of the other to turn on the light by closing its circuit.

The light or lamp (indicated at 49) is carried by a bracket 50, which is secured on and rises from the removable cover of the box or casing. This effects a compact arrangement of the apparatus, including the clock, the switch, and the lamp, so that the same may be readily carried about and may be placed on a mantle, shelf, dresser, table, or anywhere desired in a room.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a time mechanism having an alarm apparatus, a key to wind the alarm apparatus and having a drum free to rotate thereon, said key being further provided with means to lock the drum thereto; an electric switch, and a flexible element to operate said switch, said flexible element being connected to said drum.

2. In combination with an electric switch having a movable arm and a spring to move said arm in one direction, a drum mounted for revolution, a flexible element connecting said drum to said switch-arm, a drum revoluble with the first-mentioned drum, a flexible element connected thereto and wound thereon in the reverse direction to the first-mentioned flexible element, and a time mechanism having a movable element to which said last-mentioned flexible element is connected, for the purpose set forth.

3. The herein-described electric signaling apparatus, comprising a time mechanism having a winding-key provided with a drum, a switch connected to a light-circuit in open shunt and including a pivoted arm, a spring to move said arm in one direction, a drum 36 mounted for revolution, a flexible element connecting said drum to that of the winding-key, a drum 38 revoluble with and adjustable on the drum 36, and a flexible element connecting said drum 38 to the switch-arm, the flexible element being reversely wound on the drums 36, 38, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN M. POWELL.

Witnesses:
J. W. GARNER,
JNO. T. MEANY.