

No. 750,569.

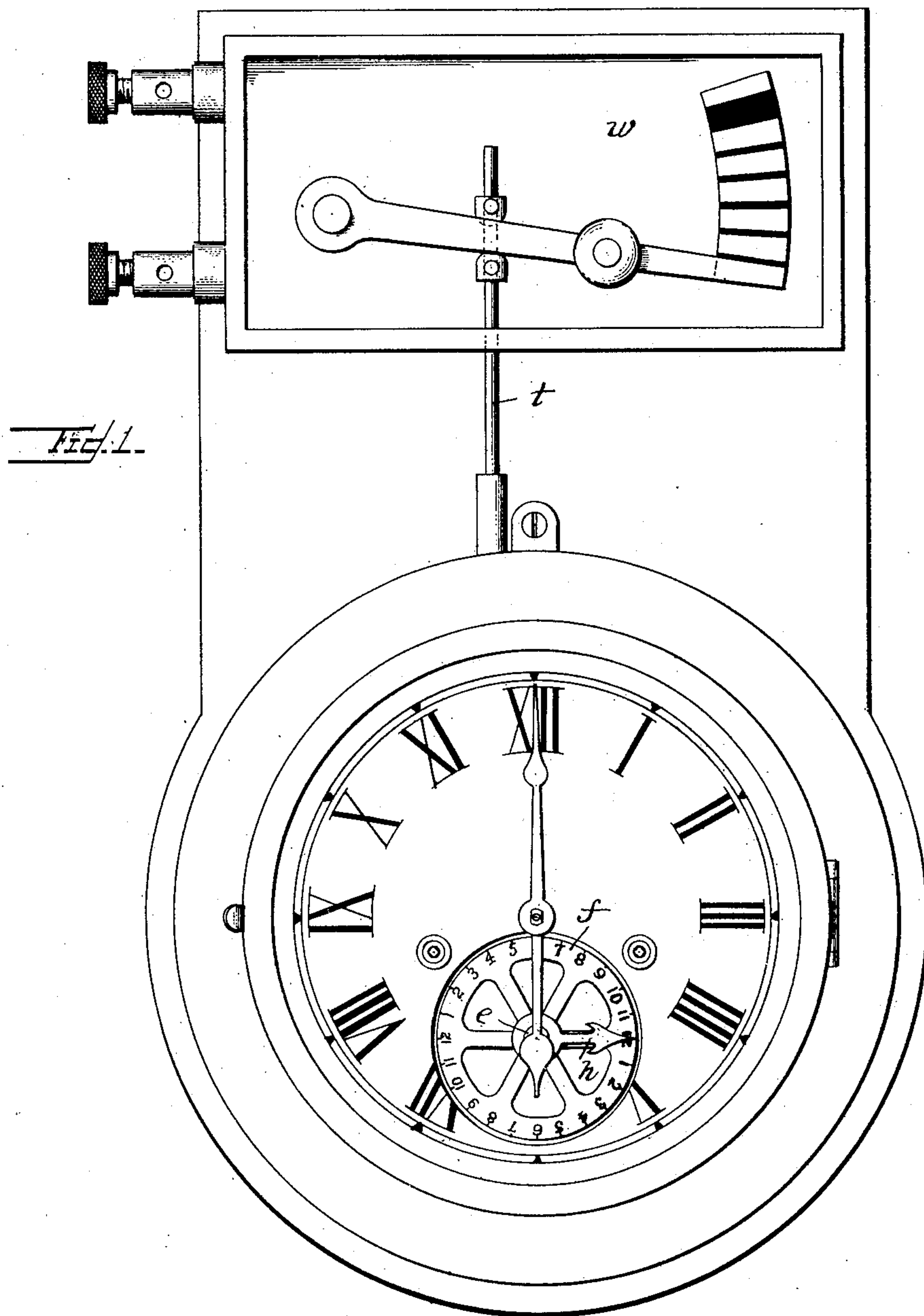
PATENTED JAN. 26, 1904.

T. L. BEAR.  
ELECTRIC TIME ALARM.

APPLICATION FILED SEPT. 27, 1901. RENEWED AUG. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Jesse B. Skeller,  
John H. Schindler

Inventor:

Theophilus L. Bear  
by Chas. A. Patten.  
Attorney.

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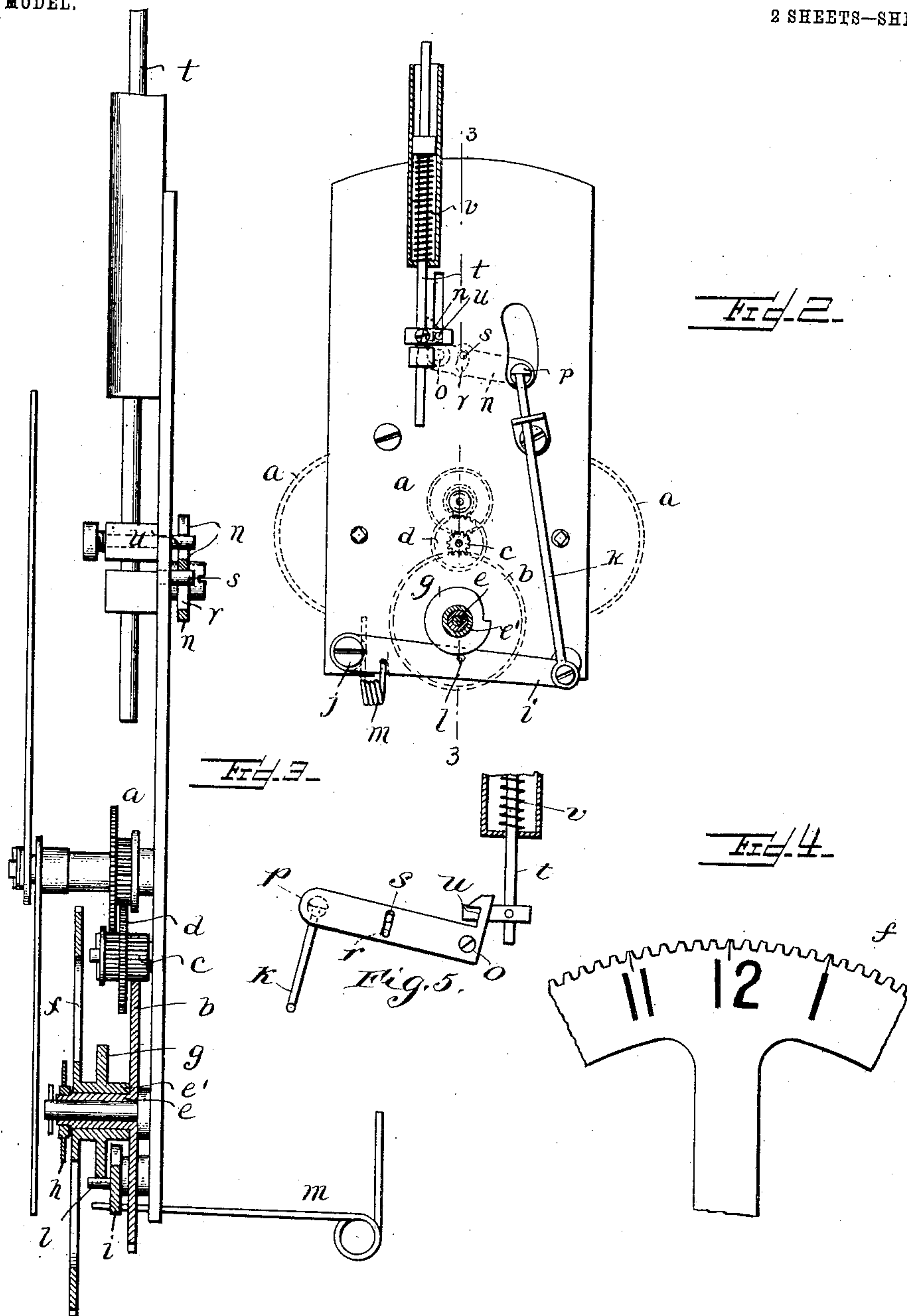
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2 SHEETS—SHEET 2.



Witnesses:  
Jesse B. Steller.  
John W. Shields

Inventor:  
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# UNITED STATES PATENT OFFICE.

THEOPHILOUS L. BEAR, OF CAMDEN, NEW JERSEY.

## ELECTRIC TIME-ALARM.

SPECIFICATION forming part of Letters Patent No. 750,569, dated January 26, 1904.

Application filed September 27, 1901. Renewed August 8, 1903. Serial No. 168,764. (No model.)

*To all whom it may concern:*

Be it known that I, THEOPHILOUS L. BEAR, a citizen of the United States, and a resident of the city and county of Camden, State of New Jersey, have invented certain new and useful Improvements in Electric Time-Alarms, of which the following is a specification.

My invention relates to improvements in electric time-alarms, and more particularly to improvements in clock-controlled switch-operating mechanism for turning electric lights, &c., off and on at predetermined intervals; and the object of my invention is to furnish a simple, inexpensive, and positive mechanism for this purpose.

In the accompanying drawings, forming part of this specification, and in which similar characters of reference indicate similar parts throughout the several views, Figure 1 is a front elevation of clock and switch operating mechanism complete, the clock registering six p. m., while the index is set to open switch at twelve night; Fig. 2, a front elevation of the clock and switch operating mechanism partly in section; Fig. 3, a section of Fig. 2 on line 3 3, showing only a portion of the mechanism; Fig. 4, an enlarged face view of a portion of the index-wheel; Fig. 5, a rear elevation of the spring-actuated switch-operating rod and the means for holding and for releasing this rod.

*a* represents a clock-train of any well-known construction which it will not be necessary to describe in detail. Gearing with one of the gears of the clock-train or with a separate pinion turning with one of the gears is a gear *b*, which for general uses is adapted to make one complete revolution in twenty-four hours. Preferably the gear *b* gears with a pinion *c*, carried upon the same arbor and turning with the minute-wheel *d*, as shown in the drawings.

*e* is a sleeve secured to and turning with gear *b*, which carries frictionally an index-wheel *f*, which carries a cam *g*. The index-wheel and cam can be turned on sleeve *e* without turning gear *b*.

*h* is a hand or pointer carried by and turning with sleeve *e*. The periphery of wheel *f* is divided into twenty-four equal parts if the gear *b* is adapted to make one revolution in

twenty-four hours or into twelve parts if gear *b* is adapted to make one revolution in twelve hours. For general purposes it is more convenient to use the twenty-four-hour system, and the mechanism will be so described.

We will assume wheel *f* to be divided into twenty-four equal divisions, which represent each one hour, and each of these divisions to be subdivided into twelve equal parts, each of which represents five minutes. One half of the wheel will then represent the hours of the day and the other half the hours of the night, the divisions for the night being indicated by numerals of one thickness and for the day of another thickness or character, so that they may be readily distinguished one from the other.

*i* is a lever, one end of which is pivoted at *j* and the other end of which carries a rod *k*.

*l* is a stop carried by lever *i*, adapted to be operated by cam *g*; *m*, a spring normally raising lever *i* and keeping stop *l* in contact with cam *g*.

*n* is a trigger pivoted at *o* and carrying at its outer end a stop *p*, adapted to be engaged by rod *k*. The trigger *n* is furnished with a slot *r*, through which a fixed pin *s* is adapted to pass to limit the movements of the trigger.

*t* is a rod carrying a detent *u* and surrounded by a spring *v*, which normally acts to elevate it.

*w* is a switch adapted to be engaged by rod *t*.

The point of cam *g* is on a line radial with one of the divisions 12 on the index-wheel *f*, and the position of the pointer *h* corresponds with that of the hour-hand of the clock.

If it be desired to have the switch operated to extinguish lights at, say, twelve o'clock, the index-wheel is turned until the figure "12" comes under pointer *h*. This moves the cam *g* so that at twelve o'clock the stop *l* on lever *i* will be tripped, the spring *m* throwing lever *i* upward and with it rod *k*, which engages stop *p* on trigger *n*, releasing this trigger from detent *u* on rod *t*, which is immediately thrown upward by spring *v* throwing switch *w* so as to cut out the lamps on the circuit which it controls.

It will be understood, of course, that the mechanism may be used for tripping any device other than an electric switch.

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I have found it more convenient to divide the periphery of the index-wheel *f* by means of teeth rather than by lines. The distance from the middle of one tooth to the middle of the next representing ten minutes and the distance from the middle of the top of one tooth to the middle of the space between the tooth representing five minutes.

The hour divisions on wheel *f* are, as previously stated, arranged upon one half of the wheel for night and the other half for day, similar hours for the night and day being placed diametrically opposite one another.

Having thus described my invention, I claim—

In combination, a clockworks, a gear driven by a pinion carried upon the arbor of the minute-wheel so as to make one revolution in twenty-four hours, said pinion and minute-wheel, a sleeve carried by said gear, a pointer

carried by and turning with said sleeve, an index-wheel frictionally carried by said sleeve one half of said index-wheel being divided into equal divisions representing the hours of the day and the other half into similar divisions representing the hours of the night, a cam carried by said index-wheel, a lever pivoted at one end, a stop carried by said lever adapted to engage said cam, a spring for throwing said lever toward said cam, a rod carried by the free end of said lever, a trigger adapted to be operated by said rod, a rod furnished with a detent adapted to be engaged and held by said trigger when said rod is lowered, and a spring for actuating said rod when released by said trigger.

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Witnesses:

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