J. P. TONSOR.

TIME ACTUATED RELEASING DEVICE.

APPLICATION FILED APR. 29, 1911.

1,004,827.

Patented Oct. 3, 1911.

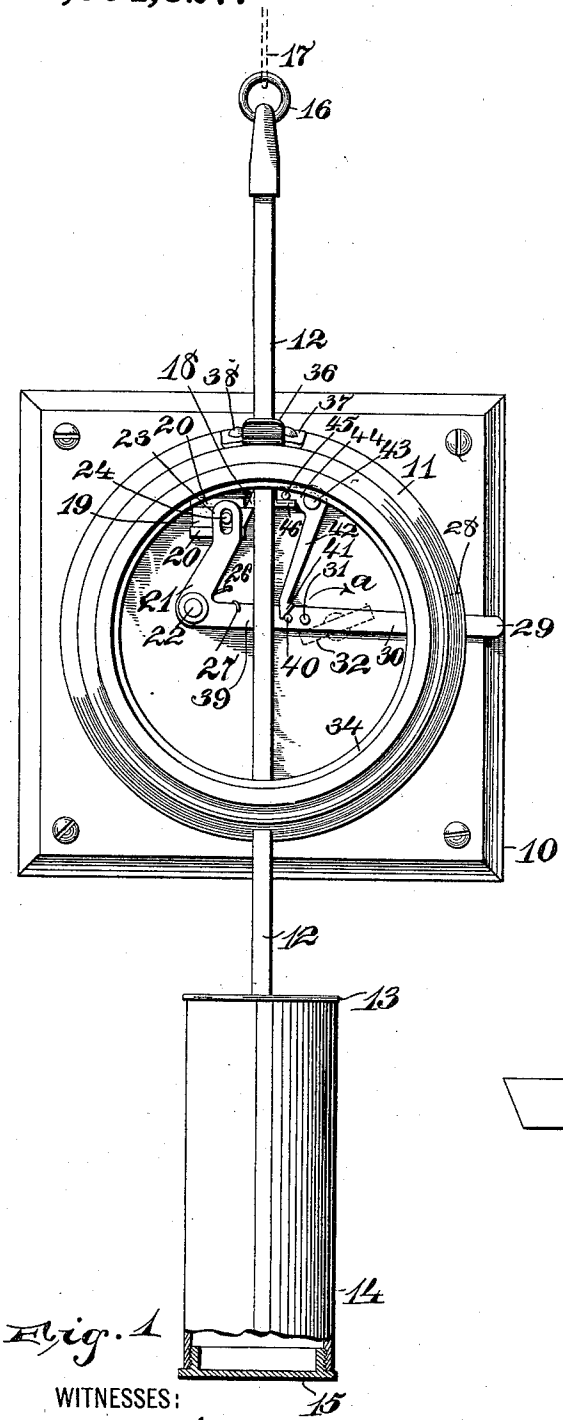

Fig. 1

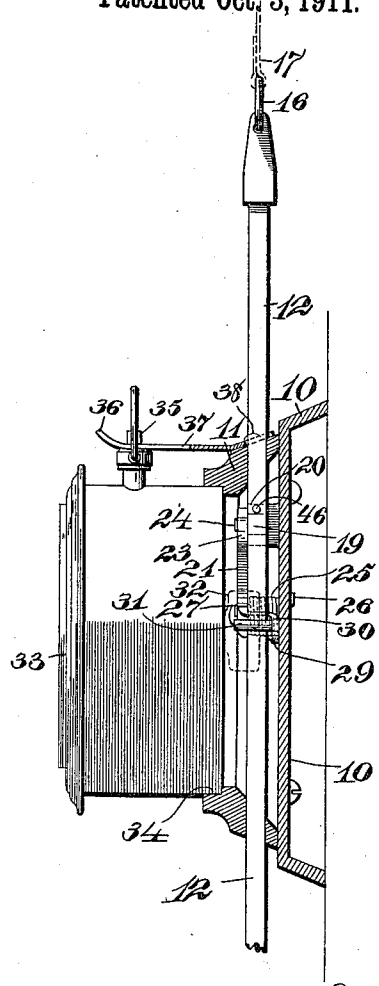

Fig. 2

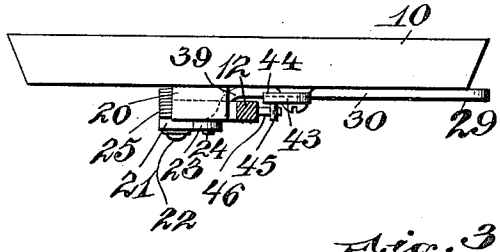

Fig. 3

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TIME-ACTUATED RELEASING DEVICE.

1,004,827. Specification of Letters Patent. Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that I, JOHN P. TONSOR, a citizen of the United States, residing at Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Time-Actuated Releasing Devices; and I 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a time-actuated releasing device and is constructed to be used in conjunction with a clock which can be regulated to operate at a predetermined time similar to an alarm clock, so that when the clock operates it releases a weight which has previously been suspended in an inoperative position, this weight when released operating any suitable mechanism such as the dampers or drafts of a furnace or heater, an electric switch for the regulation of lights, or in any one of the numerous cases where it can be employed to perform a function at a stated time.

The device is adapted to be used in conjunction with an alarm clock or a clock similar to an alarm clock, the clock being removably attached to a suitable support, on which support is mounted the suspending device, the clock and the suspending device being adapted to coöperate when the clock is in place so that when the clock operates the suspending device is released and the weight drops by gravity and performs its function.

The invention is also designed to provide a means for manipulating the suspending device when the clock is not in place.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a view of the releasing device with the clock removed. Fig. 2 is a side view with the support of the clock in section, the clock being shown in place. Fig. 3 is a top view of the base portion with the releasing device shown in elevation, the clock and the clock-supporting ring being removed.

The device consists of a base 10 to the front of which is attached a clock-supporting frame 11. Sliding through the clock-supporting frame and arranged vertically therein is a rod 12 at the end of which is arranged a weight 13 which can be of any of the usual types of weight, and can be either fixed or variable as to its weight. I show the weight made of a casing 14 with a removable bottom 15 whereby the casing can be supplied as desired with material such as shot or the like to adjust the weight even to a fine degree when this is necessary. To the top of the rod 12 I secure a ring 16 which is in turn fastened to a strand 17 or to any other suitable element which is connected to the device to be operated by the weight, which latter device is not shown in the drawing. On the rod 12 is a tooth 18, the tooth being beveled on its top edge and adapted to rest on its bottom edge on the pointed end of a latch 19 which is beveled on its lower face so that when the rod is raised the tooth 18 and the beveled edge of the latch 19 will slip past each other to enable the tooth to be placed on top of the latch. The latch 19 slides in ways 20 which are arranged on the face of the base 10, the latch being normally thrown forward by means of a lever 21 pivoted at 22 and having a slotted end 23 engaging the pin 24 on the latch, the lever 21 being normally swung by the coil spring 25 having one end 26 bearing on the base and the other end 27 bearing on the lever. The lever is substantially L-shaped and projects out through a slot 28 in the clock-supporting frame to present its end 29 so that it can be manipulated by the hand if necessary.

The arm 30 of the lever 21, which provides the end 29 for the manipulation, is provided with a pin 31 which is engaged by the winding key 32 of a clock 33 when the clock is placed in the clock-supporting frame, the arrow *a* in Fig. 1 indicating the direction of rotation of the winding key when it moves in the reverse direction after having been wound up and it is released by the usual mechanism within the clock. The clock is set within a recess 34 which has a stud 35 on the top which easily passes under the curved end 36 of a spring 37 and goes through a perforation in this spring 37, the spring 37 being secured to the clock-supporting frame by suitable screws 38.

The clock is available for telling time because its face is arranged outward when it

is placed in the supporting frame, and it can be easily removed by grasping the end 36 of the spring 37 and bending it upward and pulling the clock forward from its place. The key 32 can be wound and the alarm or time-actuated device within the clock can be set, and the alarm key 32 can be wound so that when it is actuated within the clock and released, it will rotate in the reverse direction and be in a position to cooperate with the pin 31 to raise the arm 30 of the lever 21, slide back the latch 19, release the tooth 18 and allow the weight to descend, pulling the rod 12 with it and operating whatever element it is connected with. The arm 30 is preferably bent as at 39 to pass behind the rod 12 and has a stud 40 thereon, which stud is adapted to be engaged by a tooth 41 on the end of a finger 42, being pivoted at 43 to the base and having a nose 44 thereon with a pin 45 which is placed so that when the rod 12 is raised it is engaged by a pin 46 to raise it and swing the finger 42 over to the position shown in Fig. 1. When the arm 30 is raised by the alarm key 32 and the rod 12 descends, the pin 46 releases the pin 45, the finger 42 has a tendency to swing to a vertical position, and the tooth 41 engages the stud 40 and the arm 30 is held in its raised position so that the pin 31 is out of the path of travel of the alarm key 32, and the alternate raising and lowering of the arm 30 with the consequent noise and clatter is avoided. It will be understood that this restraining device comprising the finger 42 with its end to engage the pin 40 can be dispensed with without affecting the operation of the releasing device of the suspending means.

It will thus be seen that I have devised an easily transportable suspending means for a weight, which weight is adapted to in turn operate any desired device and provide the same with a clock that coöperates to release the suspending means at a stated time, the clock being easily detachable for winding and setting, and when in place being available for telling the time.

Having thus described my invention, what I claim is:—

1. A time-actuated releasing device consisting of a base, a clock-supporting frame on the face of the base, a rod sliding vertically in the frame, a projection on the rod by which it can be suspended, a weight on the rod, the rod having means for attaching it to an element to be operated by the weight, a latch sliding horizontally on the frame and engaging the rod to suspend it in its raised position, a lever operating by gravity to slide the latch to its locked position, a clock having an alarm key adapted to be wound in one direction and arranged to rotate in the reverse direction when released by the clock mechanism, means for detachably securing the clock to the frame with its alarm key within the frame, and a pin on the lever adapted to be engaged by the alarm key when the alarm key rotates in the reverse direction, this operation of the lever releasing the latch to permit the rod to be actuated by its weight.

2. A time-actuated releasing device comprising a base, a frame on the face of the base, a rod sliding vertically in the frame, a weight on the rod, a tooth on the rod, ways on the frame, a latch sliding in the ways, a lever engaging the latch, means for operating the lever to normally force the latch to its closed position to engage the tooth, a clock having an alarm key projecting from the back thereof, the clock when in place having its alarm key in position to cooperate with the lever for moving the latch to release the rod, and means for detachably securing the clock in the frame.

3. A time-actuated releasing device comprising a base, a frame on the face of the base, a rod sliding in the frame, a tooth on the rod, ways on the frame, a latch sliding in the ways, an L-shaped lever in the frame having one end projecting for its manipulation and having its other end engaging the latch to slide it, a spring for normally holding the latch shut, and a clock detachably secured on the face of the frame and having an alarm key to coöperate with the lever to release the latch, the alarm key being placed in position when the clock is placed in the frame.

4. A time-actuated releasing device comprising a base, a frame on the face of the base, a rod sliding in the frame, a tooth on the rod, ways on the frame, a latch sliding in the ways, an L-shaped lever in the frame having one end projecting for its manipulation and having its other end engaging the latch to slide it, a spring for normally holding the latch shut, a clock detachably secured on the face of the frame and having an alarm key to coöperate with the lever to release the latch, the alarm key being placed in position when the clock is placed in the frame, means for locking the latch out of its normal position when the lever is operated, and means for releasing said locking means of the lever when the rod is raised.

5. A time-actuated releasing device comprising a suitable support, a rod sliding in the support having its end projecting from the top and bottom, a weight on the rod, a suspending means within the support, the support having an opening in its face providing access to the suspending means, and a clock detachably secured in the opening in the face of the support to close the opening and conceal the suspending device, the clock having time-actuating means projecting from the back and within the support for operating the suspending device.

6. A time-actuated releasing device comprising a frame, a rod sliding vertically in the frame, the rod being weighted, ways on the frame, a latch sliding in the ways, a tooth on the rod adapted to be rested on the latch to suspend the rod, an L-shaped lever in the frame having its inner end engaging the latch to slide it and having its outer end projecting from the frame for its manual manipulation, its outer end also providing a weight to cause by its own weight the sliding of the latch to its locking position, a clock, and means for detachably securing the clock on the frame, the clock having an alarm key to coöperate with the lever to raise the lever to open the latch.

In testimony, that I claim the foregoing, I have hereunto set my hand this 27th day of April, 1911.

JOHN P. TONSOR.

Witnesses:
WM. H. CAMFIELD,
M. A. JOHNSON.