A. T. KOOPMAN.

Lighting Attachments for Alarm-Clocks.

No. 211,748. Patented Jan. 28, 1879.

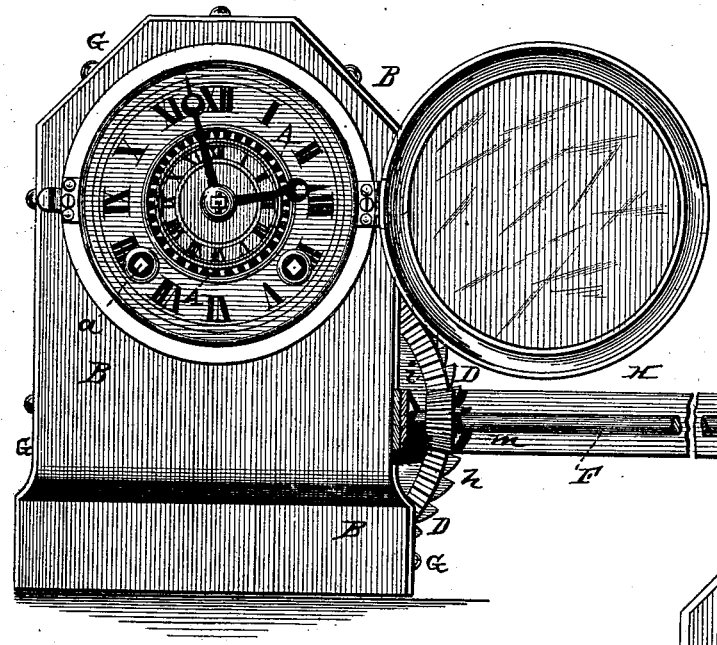

Fig. 1.

Fig. 2.

Fig. 3.

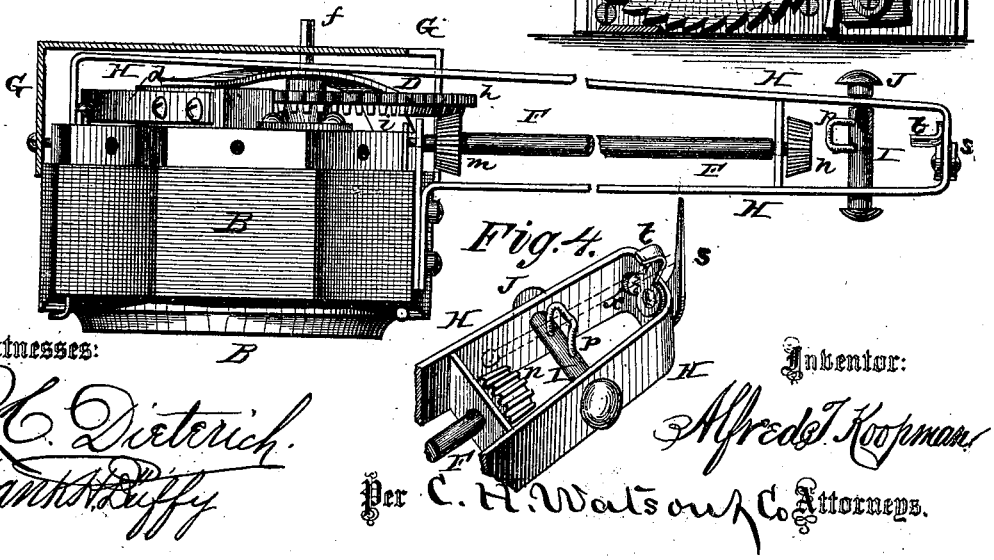

Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

ALFRED T. KOOPMAN, OF TERRE HAUTE, INDIANA.

IMPROVEMENT IN LIGHTING ATTACHMENTS FOR ALARM-CLOCKS.

Specification forming part of Letters Patent No. **211,748**, dated January 28, 1879; application filed November 27, 1878.

To all whom it may concern:

Be it known that I, ALFRED T. KOOPMAN, of Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Alarm-Clocks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which they appertain to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to alarm-clocks; and it consists in the construction and arrangement of a device attached or connected to an alarm-clock for the purpose of igniting one or more matches automatically at the same time as the alarm is sounded, for the purpose of kindling a fire in a stove, grate, or other contrivance at any time of day or night, as will be hereinafter more fully set forth.

In the annexed drawings, to which reference is made, Figure 1 is a front elevation, partly in section. Fig. 2 is a rear elevation, partly in section, with the casing removed. Fig. 3 is a plan view, partly in section; and Fig. 4 is a detail view of my invention.

A represents an ordinary alarm-clock mechanism inclosed in a case, B. *a* is the arbor on which the alarm-spring on the inside of the clock works, said arbor being extended out through the back of the clock-case, and upon its rear end is secured a pinion, *b*. This pinion works in a toothed lever, C, pivoted at its lower end, as shown. In winding up the alarm-spring of the clock the pinion *b* is turned from left to right, thereby moving the toothed lever C to the left, and allowing a spring, *d*, to act on a sliding pawl, *e*, to force the same into the ratchet-teeth of the power-wheel D. The spring *d*, when the lever turns to the right, acts with sufficient force on the sliding pawl to keep the lever in gear with the pinion *b*. When the lever stands in the opposite direction, or to the left, a spring, *d'*, produces the same result.

The power-wheel D is mounted upon a shaft, *f*, and works with a coil-spring, E. This wheel is formed on its periphery with ratchet-teeth *h*, and upon its side with a circular row of cogs, *i*.

The above devices are all inclosed within a suitable casing, G, attached to the clock-case B, and a horizontal arm or frame, H, is also attached thereto, which arm or frame extends to one side of the clock any desired distance.

In the frame H, in suitable bearings, is placed a shaft, F, which is at its inner end provided with a bevel-pinion, *m*, that gears with the circular row of cogs *i* on the side of the power-wheel D. On the outer end of the shaft F is secured a friction-wheel, *n*. Immediately beyond this wheel, in the frame H, is a cross-shaft, I, provided with a set nut or screw, J, on one end, and this shaft has also an eye or staple, *p*, projecting from it, as shown.

In the extreme end of the frame H is a hole, *x*, and also a latch, *t*, and point *s*, said latch and point being pivoted, so as to be set as hereinafter described.

To operate the machine the mainspring of the clock is first to be wound up. The alarm-dial of the clock is then set by turning from left to right, so that the hour it is desired to have the fire kindled will be under the hour-hand. The alarm-spring is then wound up, which throws the lever C to the left, and allows the sliding pawl *e* to engage with the ratchet-teeth *h* of the power-wheel. The wheel D is then turned from right to left until the spring E is wound tight. A match is then passed through the hole or eye *x*, head first, and then through the loop or staple *p*, letting the head of the match rest on one side of the friction-wheel *n*. The staple *p* is turned down so as to press the head of the match firmly on the wheel, and the nut or screw J then tightened. The latch *t* is then turned down on the match, that part of the latch which comes in contact with the match being toothed, so as to hold the same firmly in place. Another match is then impaled on the point *s*, and the head of this match brought around so as to be directly over, and a short distance from, the head of the first match.

The machine is then ready for use, and is to be placed in front of the stove, grate, or other contrivance, so as to bring the projecting end of the match on the point *s* in contact with the kindling material.

At whatever time the clock is set the alarm will be sounded, and the pinion *b* will move the lever C to the right, thereby withdrawing

the sliding pawl *e* from the power-wheel. This wheel is at once set in motion by its spring E, thereby giving a rapid rotary motion to the shaft F and wheel *n*. The matches are thereby exploded, and the kindling will be lighted.

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

1. The power-wheel D, sliding pawl *e*, with spring *d*, and the pivoted toothed lever C, in combination with the pinion *b* and the alarm mechanism of an alarm-clock, substantially as and for the purposes herein set forth.

2. The combination of the power-wheel D and its spring E, the shaft F, with bevel-gear *m* and friction-wheel *n*, and a mechanism connected to the alarm mechanism of an alarm-clock, for causing said wheel and shaft to rotate at any predetermined time, substantially as and for the purposes herein set forth.

3. The shaft I, with loop *p* and set-screw J, for the purposes set forth.

4. The combination of the frame H, with eye *x*, the pivoted toothed latch *t*, and pivoted point *s*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALFRED T. KOOPMAN.

Witnesses:
J. HAZE WILKES,
JAMES EICHELBERGER.