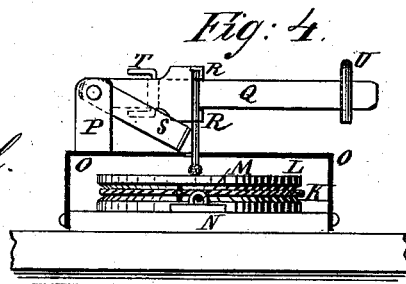
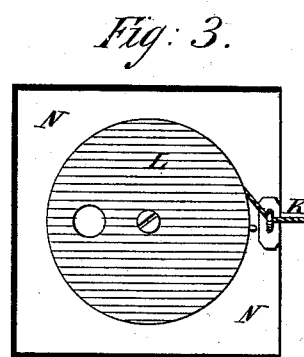
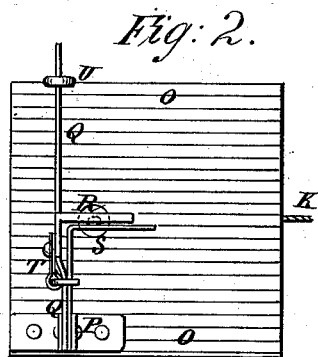
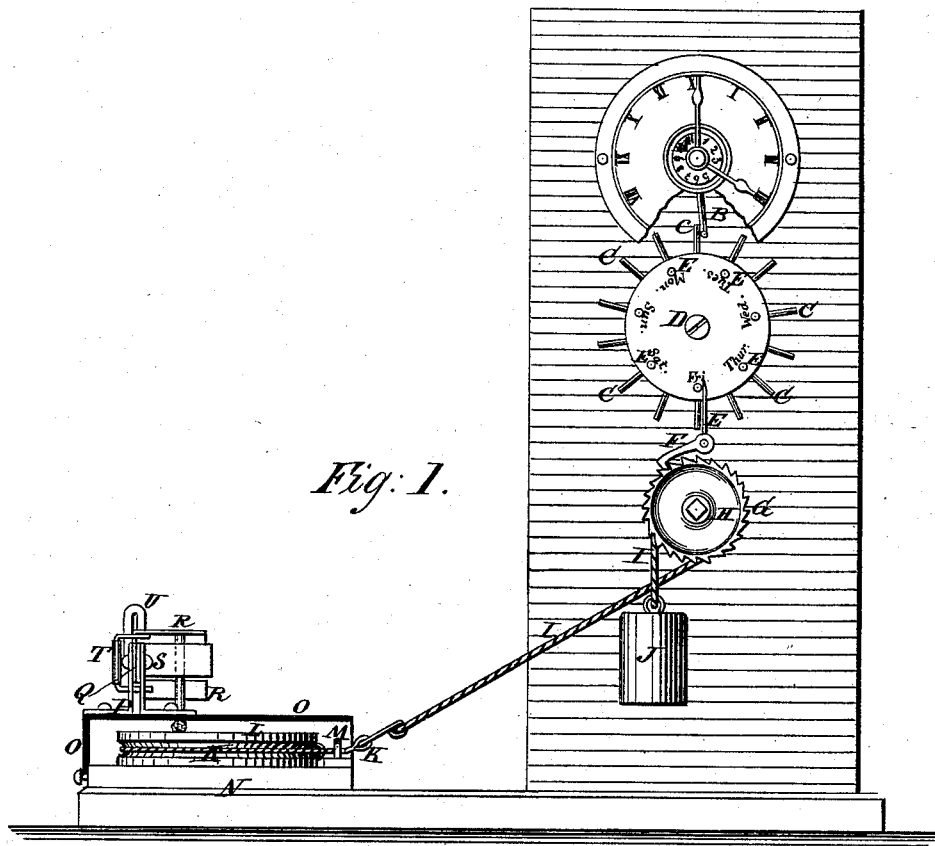


E. H. DOESCHER.
Automatic Fire-Lighter.

No. 218,946.

Patented Aug. 26, 1879.



WITNESSES:

A. Schehl.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE

EIBE H. DOESCHER, OF HOMESTEAD, IOWA.

IMPROVEMENT IN AUTOMATIC FIRE-LIGHTERS.

Specification forming part of Letters Patent No. **218,946**, dated August 26, 1879; application filed March 17, 1879.

To all whom it may concern:

Be it known that I, E. HENRY DOESCHER, of Homestead, in the county of Iowa and State of Iowa, have invented a new and useful Improvement in Automatic Fire-Lighters, of which the following is a specification.

Figure 1 is a front view of my improved device, parts being broken away to show the construction. Fig. 2 is a top view of the part to be placed beneath the fire-grate. Fig. 3 is a detail view of the same, the cover being removed. Fig. 4 is a detail side view of the same, the cover being shown in section.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for lighting a fire automatically at any given time, and which shall be simple in construction, convenient in use, and reliable in operation.

The invention consists in the combination of the wheel and its pin or arm, the lever-pawl, the ratchet-wheel and drum and their cord and weight, the second cord, the friction-wheel and its base and cover, and the match-holding device, with each other and with the hour-hand post of a clock; and in the combination of the wheel and its pin or arm, the wheel with its two sets of pins, the lever-pawl, the ratchet-wheel and drum and their cord and weight, the second cord, the friction-wheel and its base and cover, and the match-holding device, with each other and with the hour-hand post of a clock, as hereinafter fully described.

A represents a wheel, which is adjustably attached to and carried by the post that carries the hour-hand of a clock. The wheel A may have numbers formed upon it corresponding with the numbers upon the dial of the clock.

To the wheel A, or to its hub, is attached a pin or arm, B, which, at each revolution of the wheel A, or once in twelve hours, strikes against a radial pin or tooth, C, formed upon or attached to the rim of a wheel, D. The wheel A may be adjusted so that its pin or arm B may come into working position at any desired time.

The wheel D is pivoted to the clock-case below the dial, and has fourteen pins or teeth, C, attached to its rim.

The wheel D may be attached over one of

the winding-posts of the clock by a tubular pivot, said pivot being of sufficient size inside to allow the clock-key sufficient play for winding up. This arrangement is to be used in cases where the wheel D would interfere with the swing of the pendulum.

To the wheel D, opposite every other one of the teeth or pins C, is attached a pin, E. The pins E are thus seven in number, or one for each day in the week.

To the clock-case, below the wheel D, is pivoted a lever-pawl, F, the upper end of which projects into such a position as to be struck by the pins E successively.

When the device is to be used in buildings where no fire is required on Sunday, the pin E for that day is detached. When the device is to be used in school-buildings, where no fire is required on Saturday and Sunday, the pins E for those days are detached. When the device is to be used in private or other buildings where fire is required every day, all the pins E are used; or the wheel D may be omitted and the lever-pawl F so arranged as to be operated upon directly by the pin or arm B of the wheel A. Upon the lower end of the lever-pawl F is formed a hook to engage with the teeth of a ratchet-wheel, G, which is attached to or formed upon the end of a drum or shaft, H. The ratchet-wheel G and drum H are pivoted to the clock-case, and to the said drum is attached, and upon it is wound, a cord, I. To one end of the cord I is attached a weight, J, and in its other end is formed, or to it is attached, an eye to receive a hook attached to the end of a second cord, K.

The weight J may be made of sheet metal, and of such a size as to hold about twice the amount of sand, shot, or other heavy substance that would be required to work the machine under a stove in the same room with the clock, so that the weight may be increased should the stove be remote, or in another apartment of the building.

The end of the pivot of the ratchet-wheel G and drum H is squared off, or the said ratchet-wheel and drum have a square projection upon their outer end to receive the key by which they are turned to wind up the cord I and raise the weight J.

The cord K passes once around the grooved

wheel L, and its end is attached to the said wheel L. The cord K also passes through a guide-staple, M, attached to the base N, to which the grooved wheel L is pivoted, so that the wheel L can make but a single revolution. The base N is made a little larger than the wheel L, and may be square, polygonal, or circular, as may be desired or convenient.

The upper side of the wheel L is covered with sand-paper, or has a coating of fine sand or emery applied to it to adapt it to serve as a friction-surface for igniting matches. The wheel L has a hole formed through it in such a position as to be beneath the matches when the said wheel comes to a stop, to give the said matches a better chance to burn.

O is a cover, which is made of such a size as to inclose the wheel L, and which is hinged at one edge to the base N, so that it can be turned back to expose the wheel L when it is to be adjusted for use. The cover O has a hole formed through it, through which the matches project to come in contact with the friction-surface of the wheel L, and which should be made sufficiently large to allow the said matches to burn freely when ignited.

To the top of the cover O, near one edge, is attached a standard, P, to which is pivoted the end of a bar, Q, from the middle part of which a forked arm, R, projects at right angles.

To the bar Q, or to the standard P, is pivoted or hinged a bar, S, which is bent at right angles, so that its outer part may be parallel and close to the forked arm R, and opposite the space between the prongs or branches of the said forked arm R, so as to clamp the match or matches against the said forked arm R.

The bent bar S is locked in place when holding the match or matches by a clamp, T, attached to the bar Q. In case the bar Q and its attachments be not heavy enough to hold the matches down with sufficient force to cause them to be ignited by the friction of the wheel L, a small weight, U, may be applied to the free end of the said bar Q.

The match holding and igniting device is designed to be placed beneath the grate upon which the material for a fire has been placed, and may be provided with feet, if necessary,

to bring it close up to the said grate, so that the fuel may be certainly set on fire by the burning matches.

The match holding and igniting device being exposed to considerable heat, should be made of such materials as cannot be injured by heat.

The connecting-cords I K may be made of any required length, and the clock attachment may be placed in any desired or convenient part of the building.

In arranging the device for use, the wheel L should be arranged with the heads of the matches resting upon its friction-surface just in front of the hole formed through it.

The upper prong of the forked arm R should have a flange formed upon its upper edge for the ends of the matches to rest against to prevent them from being pushed upward by the friction of the wheel L.

Upon the cover O, and on or near the matches, may be placed scraps of paper, shavings, &c., to give enough flame to insure the lighting of the material above the fire-grate.

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

1. The combination of the wheel A and its pin or arm B, the lever-pawl F, the ratchet-wheel and drum G H and their cord and weight I J, the second cord, K, the friction-wheel L and its base and cover N O, and the match-holding device Q R S T, with each other and with the hour-hand post of a clock, substantially as herein shown and described.

2. The combination of the wheel A and its pin or arm B, the wheel D, with its two sets of pins C E, the lever-pawl F, the ratchet-wheel and drum G H and their cord and weight I J, the second cord, K, the friction-wheel L and its base and cover N O, and the match-holding device Q R S T, with each other and with the hour-hand post of a clock, substantially as herein shown and described.

EIBE HENRY DOESCHER.

Witnesses:

G. A. MILVERSTECK,
P. T. KEENE.