

UNITED STATES PATENT OFFICE.

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FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 558,513, dated April 21, 1896.

Application filed March 14, 1895. Serial No. 541,808. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. McDOWELL, a citizen of the United States, residing at Ellensburg, in the county of Kittitas and State of Washington, have invented a new and useful Fire-Lighter, of which the following is a specification.

This invention relates to an improvement in devices for automatically kindling fires.

10 The object of this invention is to provide a simple and inexpensive attachment to an alarm-clock or a device adapted to be operated by an alarm-clock for igniting fuel previously placed in a stove-grate or other receptacle when at a distance therefrom.

15 The invention consists in the combination, with an alarm-clock, of a fire-lighting device connected therewith in such manner as to adapt it to be operated automatically by the alarm mechanism, in the manner of combining and arranging the several parts of the fire-lighting device, and in certain features and details of construction and arrangement of parts hereinafter fully described, illustrated in the drawings, and pointed out in the claim.

20 In the accompanying drawings, Figure 1 is a side elevation of my improved fire-lighting device made separate from and connected with an alarm-clock by means of an operating-cord. Fig. 2 is an enlarged sectional view of the fire-lighting device. Fig. 3 shows the manner in which the fire-lighter is adapted to be attached to and supported upon an alarm-clock.

25 Similar numerals of reference indicate corresponding parts in the figures of the drawings.

30 Referring to the drawings, 1 indicates a suitable base-plate, preferably made rectangular in form and provided with perforations 2, whereby said base-plate is adapted to be secured to a board or block of wood by means of screws. A pair of supporting-webs 3 3, 40 formed integrally with said base-plate or otherwise secured thereto, project at right angles therefrom, being adapted to receive and support a longitudinally-arranged tube or hollow sleeve 4, which is partially closed at one end and adapted to receive a spiral spring 5. The tube 4 is further provided with a longitudinal slot 6, in which a pin 7, pro-

jecting laterally from a sliding rod or bar 8, is adapted to travel. The rod or bar 8 extends entirely through the tube 4, and the spring 5, 55 arranged within the tube, is disposed around said rod or bar and between the partially-closed end of said tube and the laterally-projecting pin 7, referred to. The tension of the spring 5 is thus always exerted to thrust the bar 8 endwise. 60

The rear end of the rod or bar 8 extends out through a perforation 9 in the rear end of the tube 4 and is provided with a notch 10, which when the rod is forced backward 65 against the pressure of the spring 5 is adapted to be engaged by a pivoted catch or lever 12, as shown. The lever 12 is pivoted at its elbow upon a pin 13, interposed between an arm or bracket 14 and the tube 4. The lower 70 short arm 15 of the lever 12 is beveled off at its extremity to engage the notch 10 in the bar 8, and the upper or longer arm of said lever is provided with a hooked end 16 for the reception of a ring 17 on the end of a string 75 18, extending to and wrapped around the arbor of the alarm-wind 19. A spring 20 bears upwardly beneath the short arm 15 of the lever 12 for preserving the engagement between said arm and the bar 8. 80

The bar 8 is provided at its opposite end with an upwardly-extending arm 21, which at its upper end is hooked over or bent, as indicated at 22, and perforated at 23 in line with a similar perforation 23^a in the bar 8. 85 These perforations are adapted to receive the igniting-match, and a flat spring 24, secured to the inner face of the arm 21, is adapted to bear against the match and hold the same tightly in place. The forward end of the tube 90 4 has soldered to it an angle arm or bracket 25, made of thin sheet metal and provided with inwardly-extending lips 26, beneath which a strip of sand or emery paper is adapted to be inserted and held. The match is 95 depressed until its head rests in contact with this piece of sand or emery paper, and when the bar 8 is released it shoots forward, scraping the head of the match across the paper and igniting the same in a manner that will 100 be readily understood. The bracket 25 is given a slight upward inclination and is preferably made of spring metal to insure the igniting of the match. When the alarm-clock

is sprung, the revolving arbor of the alarm-wind winds upon the cord 18, thereby rocking the lever 12 and releasing the bar 8. The lighting device is inserted beneath the grate
5 of a stove or furnace, and the operating-cord extends from thence to the alarm-clock, which may be located at any convenient point.

In Fig. 3 I have shown how the fire-lighting device may be attached directly to a clock,
10 in which case the base 1, webs 3, lever 12, and spring 20 may be dispensed with. The tube 4 is attached directly to the rear wall of the clock in any convenient manner, and the rear end of the bar 8 is notched, as shown at
15 27, for engaging a corresponding lip or spur on the arbor of the alarm-wind, as indicated. When the arbor of the alarm-wind starts to revolve, the bar 8 is released and the match ignited thereby in the manner above ex-
20 plained.

By the construction shown and described it will be apparent that the fire-lighting device is adapted to be automatically operated by an alarm-clock and to ignite the fuel pre-
25 viously placed in a stove-grate or other receptacle.

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

Having thus described my invention, I claim—

In a fire-lighting device, a tubular support, and a base upon which the same is mounted, 35 in combination with a plunger-rod mounted to reciprocate in said tubular support, an actuating-spring for said plunger, a pin on the plunger working in a longitudinal slot in said tubular support for limiting the move- 40 ments of the plunger-rod, a spring-actuated elbow-lever for engaging and releasing said plunger-rod, a U-shaped match-carrying arm formed integrally with the advance end of the plunger-rod and having upper and lower par- 45 allel portions formed with through-perforations arranged in alinement and adapted to receive and permit of the adjustment of an igniting-match, a bow-shaped spring arranged within the crotch of said arm and having its 50 central portion projected into a line drawn through said perforations, said spring being fastened at one end to the match-carrying arm, and free at its opposite end so that it may yield when the match is inserted, and a 55 stationary scratching device mounted fixedly on the advance end of the tubular support, substantially as and for the purpose described.

In testimony that I claim the foregoing as 60 my own I have hereto affixed my signature in the presence of two witnesses.

JAMES T. McDOWELL.

Witnesses:

C. R. HOVEY,

FRED. J. SOMERINDYKE.