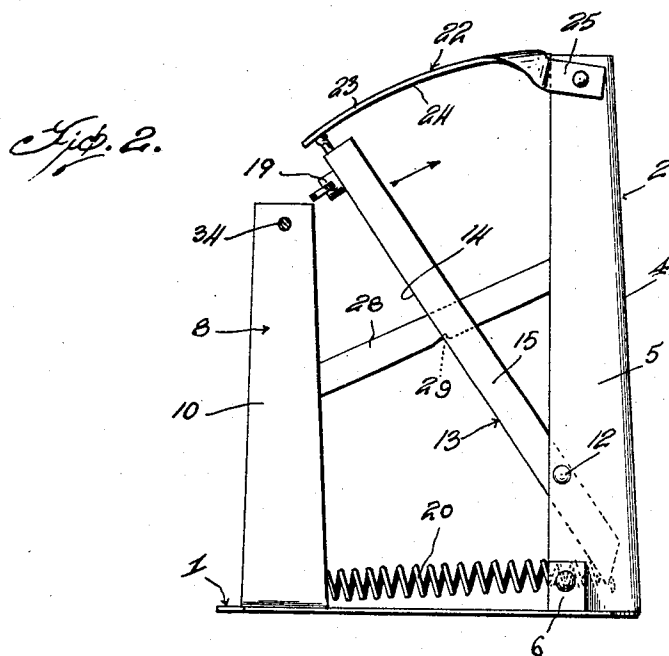
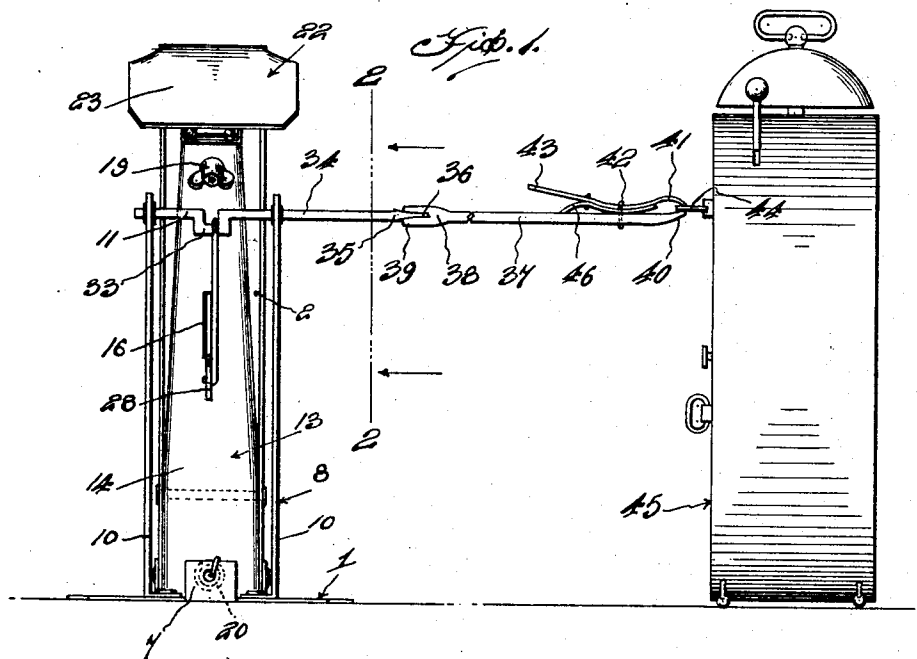


1,189,043.

C. M. BELOW.
FIRE LIGHTER.
APPLICATION FILED FEB. 5, 1916.

Patented June 27, 1916.
2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

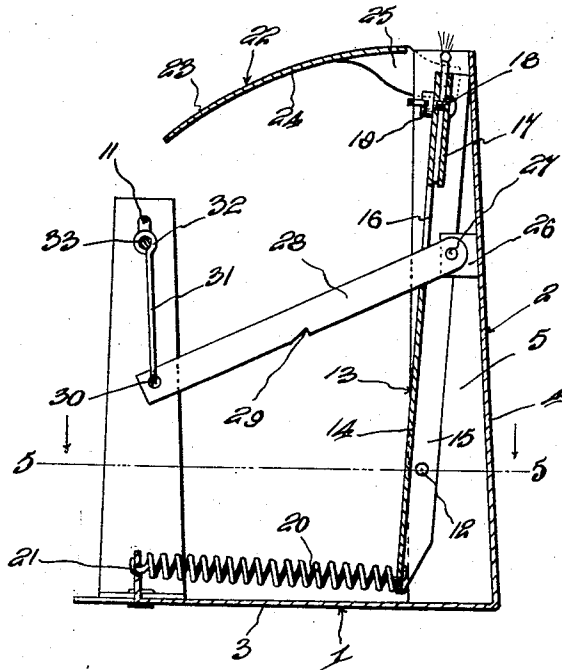


Fig. 4.

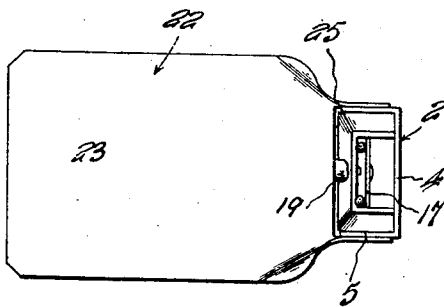
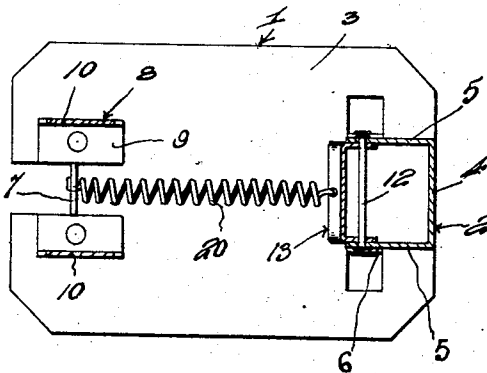


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES M. BELOW, OF CASPAR, CALIFORNIA.

FIRE-LIGHTER.

1,189,043.

Specification of Letters Patent. Patented June 27, 1916.

Application filed February 5, 1916. Serial No. 76,422.

To all whom it may concern:

Be it known that I, CHARLES M. BELOW, a citizen of the United States, residing at Caspar, in the county of Mendocino and State of California, have invented certain new and useful Improvements in Fire-Lighters; 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.

This invention relates to new and useful improvements in fire-lights and the principal object of the invention is to provide a device which is adapted to light a fire at a predetermined time.

The invention is particularly adapted for outlying and rural districts wherein the use of the ordinary wood and coal stove is prevalent and is arranged so that the clock controlling the same may be set for a certain hour, thus operating the lighter and igniting the paper or other material used in starting the fire.

A further object of the invention is to provide a device which may be readily operated by an ordinary alarm clock without necessitating any change in the construction thereof.

Another object of the invention is to provide a device having a swinging arm for carrying the matches by which the fire is started which when released is arranged so that its free end swings over an abrading surface against which the match head bears, thus causing the friction between the abrading surface and match head to strike the match.

A further and more specific object of the invention is to provide a device which may be readily constructed of sheet metal or any other suitable material and in such form as to be readily applied to stoves of varying makes and constructions.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which:

Figure 1 is a rear view in elevation of a fire-lighter constructed in accordance with this invention showing the same attached to an alarm clock of the usual construction. Fig. 2 is a sectional view on the line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view through the device showing the same in its

operated position. Fig. 4 is a top plan view of the device illustrated in Fig. 3 showing the base and rear supporting standards removed, and Fig. 5 is a horizontal sectional view on line 5—5 of Fig. 3.

Referring to the drawings the numeral 1 designates as an entirety the base of the device having secured thereto a standard 2. The standard 2 is preferably at one end of the base as shown in the drawings and pivotally supports the carrier arm which supports the matches. In the form of the invention shown in the drawings the base consists of a rectangular plate 3 formed with a longitudinal tongue which is bent upwardly to form the wall 4 of the standard 2 and this tongue is provided at opposite sides with the angularly extending flanges 5 which form reinforcements for the standard 4 as shown.

As illustrated in the drawings, the bottom edges of the flanges 5 extend backwardly and over the upper face of the plate 3 and are riveted or otherwise secured to the ears 6 which are struck and bent upwardly from the plate 3 as clearly illustrated in Figs. 2 and 5. These ears are positioned laterally of the standard as clearly shown and form attaching means for the rear edges of the lower ends of the standards. A suitable ear 7 is struck and bent upwardly from the plate 3 at the edge opposite the edge on which the standard 2 is formed and is positioned between the pedestals designated generally by the numeral 8, the use of which will appear as the description proceeds. The pedestals 8 above referred to comprise the base members 9 having formed integral therewith the upstanding standards 10 provided near their upper ends with the apertures 11 which form bearings for the trip shaft which will be more fully hereinafter described. As shown in the drawings the standards 10 are formed at opposite sides of the base plate 9 and the plates are positioned laterally of the ear 7.

Extending through the flanges 5 near their rear edges and at a point slightly above their lower terminals is a pivot pin 12 forming the pivotal support for the carrier arm designated generally by the numeral 13 which comprises the body 14 having formed at opposite edges the angularly extending flanges 15 which flanges are formed with alining apertures for the reception of the pin 12. Formed in the body

or web portion 14 of the carrier arm 13 near its upper end is a slot 16 through which the trip arm of the device extends. A suitable clamping plate 17 coöperates with the web portion 14 which extends between the upper end of the slot 15 and the upper terminal of the carrier arm and this plate 17 together with the aforesaid section of the web portion is provided with an aperture which alines with a similar aperture in the web portion for the reception of the clamping bolt 18 carrying at its outer end the thumb nut 19. The plate 17 forms a clamp for holding the matches which are to be struck and as illustrated in Fig. 3 it will be seen that the matches are placed so that their heads project slightly above the upper terminal of the carrier arm. A suitable opening is formed in the lower terminal of the web portion 14 and is adapted to receive the hooked end of the retractile coil spring 20 the opposite terminal of which is provided with a hook for extending through an aperture 21 formed in the ear 7. It will thus be seen that the spring 20 normally tends to move the carrier arm toward the standard to cause the matches carried by the upper end thereof to engage the striking plate which will be more fully hereinafter described.

The striking plate above referred to is designated generally by the numeral 22 and comprises the curved body 23 provided on its under face 24 with a suitable abrading face and formed at the forward end of said plate 23 is a pair of parallel outwardly extending ears 25 which are turned at right angles to said plate and are adapted to straddle the upper end of the standard 2. These ears are formed with suitable apertures which aline with apertures formed in the standard and are adapted to receive suitable rivets by means of which the plate 22 is pivotally connected to the upper end of the standard.

From the foregoing it will be seen that the matches are positioned in the carrier arm 13 in such a way that their heads will engage the abrading surface 24 of the striking plate 22 and when the spring 20 moves said arm it will be seen that the matches will be struck.

Riveted or otherwise secured to the web portion 4 of the standard 2 at a point substantially two-thirds of its length from the plate 3 and positioned between the flanges 5 thereof are suitable ears 26 which are formed with alining apertures for the reception of the pivot pin 27. This pivot pin extends through an opening in the trip arm 28 and thus pivotally supports the forward end of said trip arm. The lower edge of the trip arm is provided with a notch 29 to provide a shoulder for engagement with the bottom wall of the slot 16 so as to hold the carrier

arm 13 backwardly and against the tension of the spring 20 previous to the operation of the device. The extreme outer end of the trip arm 28 is formed with an opening 30 to which a suitable link 31 is connected, which link is formed at its upper end with a loop 32 for surrounding the crank 33 of the trip shaft 34. This trip shaft 34 is journaled in the openings 11 at the upper ends of the pedestals 8 and it will thus be seen that when the trip shaft is turned the crank will be moved upwardly thereby releasing the carrier arm. The shaft 34 is extended on one side and provided at its outer end with the flat portion 35 which is bifurcated to form the arms 36, the use of which will appear as the description proceeds. In order to connect the shaft 34 with the clock used in connection with the device a suitable link 37 is provided having formed at one end the flattened portion 38 which is bifurcated to form the arms 39. The flattened portion 35 and the arms 36 are arranged to coöperate with the flattened portions 38, and the arms 39 so that upon rotation of the link 37 the rotary movement will be transmitted to the shaft 34. A suitable jaw member 40 is formed on the end of the link 37 opposite the flattened portion 38 and coöperates with the movable jaw member 41 which is attached at 42 to the link 38 and provided with the thumb piece 43 by means of which it may be rocked backwardly in order to allow the same to be attached or released to the winding key 44 of the clock designated generally 45. A suitable leaf spring 46 is secured to the movable jaw 41 and to the lever 43 and is adapted to urge the movable jaw toward the jaw 40 so as to insure the gripping of the clock key by the jaw members.

It will be apparent from the foregoing that in use the matches are placed in the upper end of the carrier arm and said arm is then swung backwardly against the tension of the spring and latched in place by engagement of the shoulders formed by the notch 29 and the latch arm 28 and the device is then hooked up to the clock so that as soon as the alarm goes off the trip arm will be released thereby permitting the carrier arm to cause the match heads to engage the abrading surface 24 of the plate 22 thus striking the matches and lighting the fire.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the appended claim.

What is claimed is:—

In a device of the class described, a base plate, a standard at one end of said base plate, a carrier arm pivoted to the standard

near its lower end, a spring attached to the lower end of the carrier arm and to the base plate for moving the upper end of said carrier arm forwardly, match supporting means 5 on the upper end of the carrier arm, a tripping lever pivoted to the standard intermediate its ends, said carrier arm being provided with a slot, said tripping lever extending through the slot, an abrading plate pivoted to the upper end of the standard and 10 arranged to be swung into position to engage the heads of the matches on the carrier arm, pedestals on the end of the plate opposite the standard, a trip shaft rotatably

mounted in the upper end of the pedestals 15 and a link connecting the tripping shaft with the trip arm, whereby upon rotation of the shaft, the arm will be operated to release the carrier arm and permit the same to move under the influence of the spring 20 to cause the heads of the matches to be struck on the abrading plate.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. BELOW.

Witnesses:

E. W. ANDERSON,
A. H. HANSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."