(No Model.)

H. LUTZ.

FIRE LIGHTER.

No. 457,915. Patented Aug. 18, 1891.

Fig. 1

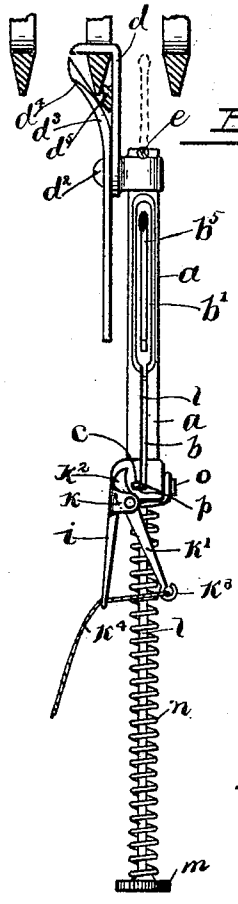


Fig. 2

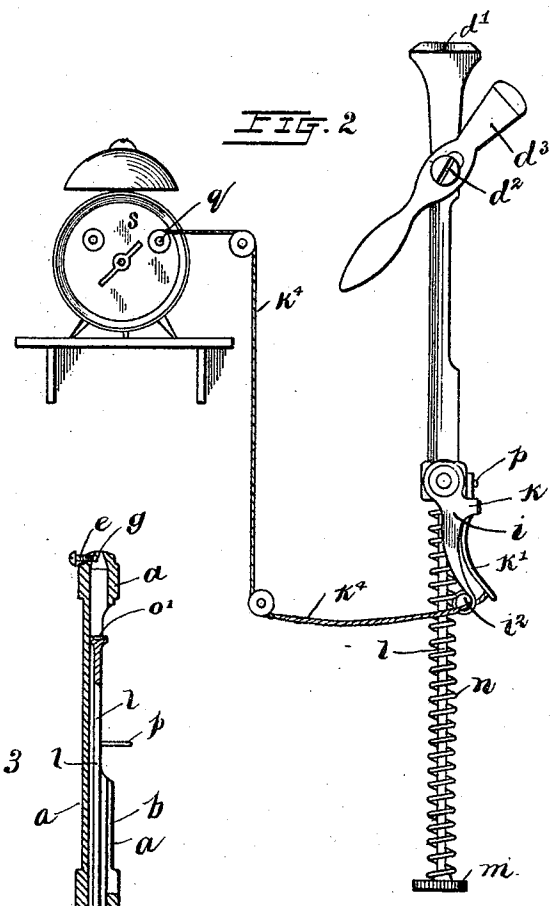
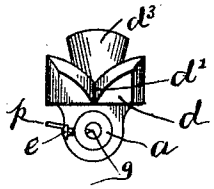


Fig. 3

Fig. 4



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HENRY LUTZ, OF LOGAN, OHIO.

FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 457,915, dated August 18, 1891.

Application filed February 25, 1891. Serial No. 382,825. (No model.)

To all whom it may concern:

Be it known that I, HENRY LUTZ, a citizen of the United States, residing at Logan, in the county of Hocking and State of Ohio, have invented a certain new and useful Improvement in Fire-Lighters, of which the following is a specification.

My invention relates to fire-lighting devices; and the objects of my invention are to provide simple and inexpensive means for igniting fuel previously placed in a stove, grate, or other receptacle when at a distance therefrom; to so construct said device as to admit of its being operated automatically by an alarm-clock mechanism, and to produce the same in a neat and reliable form. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved fire-lighting device, showing the same connected with and supported from one of the bars of a grate or fire-basket, and showing the operating mechanism in position for use. Fig. 2 is a side elevation of said device, showing the operating mechanism connected with the winding-post of an alarm-clock. Fig. 3 is a longitudinal sectional view, and Fig. 4 is an end view.

Similar letters refer to similar parts throughout the several views.

a represents the body of my device, which is of a general tubular or cylindrical form, said body being provided on its upper side throughout the greater portion of its length with a slotted opening, as shown at *b*. This slotted opening has, as shown at *b'*, its forward portion widened by the removal of a portion of the upper face of the body *a*. The rear portion of the slot *b* terminates in a short offset or notch *c* at right angles with said slot, said offset being formed in the enlarged rear end of the body *a* and forming thereby a shoulder, as shown.

Formed with and projecting forwardly from one side of the slightly-enlarged forward end or head of the body *a* is a rigid clutch-arm *d*, which has its outer end portion bent at right angles with its body and has preferably formed in the end of said outwardly-bent portion a notch *d'*. To the outer side of the rear end portion of the clutch-arm *d* is pivoted at about the center of its length, as shown at d^2, a forwardly-extending clutch-arm d^3, which is slightly shorter than the arm *d* and which has its outer end portion bent outwardly, as shown at d^4. The upper edge of this outwardly-bent portion of the arm d^3 is preferably made to flare outward slightly, as indicated in the drawings. In the forward end of the tubular body *a* is inserted vertically within a screw-hole formed therein an adjustable contact-screw *e*, the inner end of which is adapted to project slightly within the mouth of the body *a*. This inwardly-projecting end of the screw *e* is suitably sharpened or pointed, as shown at *g* in Fig. 4.

Formed with the body *a* and projecting rearwardly from one side of the enlarged rear end portion thereof is a guide-arm *i*, the outer end of which is pierced or provided with a suitable eye, as shown at i^2. To the under side of an inwardly-extending bridge or arm *k*, which is formed with and projects from the upper side of the arm *i* at a point above the rear end of the body *a*, is pivoted the forward end portion of a trigger-arm *k'*. The short forwardly-projecting head k^2 of the arm *k'* is adapted to swing laterally inward over the set-screw *c* of the slot *b*, as shown in Fig. 1 of the drawings, while the rear portion of said trigger-arm terminates at a point approximately opposite the eye of the arm *i* in a suitable hook or eye k^3.

l represents a plunger-rod of a length somewhat greater than the length of the body *a* and of such circumference as to fit and slide within the hollow of the body *a*, within the rear end of which said plunger is inserted, as shown. The rear and outwardly extending end of the plunger is provided with a suitable enlarged head, as shown at *m*, to which is secured one end of a coiled spring *n*, which, as shown, surrounds said outwardly-extending portion of the rod *l* and has its forward end secured to a suitable projection *o* on one side of the body *a*. The inner or forward end of the plunger is provided with a slightly-enlarged head, the end surface of which is concaved, as shown at *o'*. The plunger is also provided at a distance in rear of its enlarged head with an upwardly-projecting pin *k*, which extends outwardly through the slot *b*. The

tension of the spring n is such as to normally hold the head of the plunger near the forward end of the body a.

To the hooked outer end of the trigger k' I secure one end of a suitable cord k^4, which extends laterally therefrom through the eye or loop i^2 of the arm i, from which point said cord may be made to extend to a bed-room or other desired point. As shown in Fig. 2, the cord k^4 may, if desired, have its outer end suitably secured to and wound upon the spring-post q of an ordinary alarm-clock s, located at such distance from the fire-lighting device as desired.

The manner of operating and utilizing my device is as follows: Fuel having been placed within the fire-basket of a stove, grate, or other similar receptacle, the device herein shown and described is connected with one of the grate-bars and caused to project outwardly therefrom by turning the pivoted clutch-arm d^3 until approximately at right angles with the rigid arm d, pressing the outer face of the arm d against one side of one of the grate-bars, causing the outturned end of said arm to engage with the inner side of said grate-bar, and turning upward the outer end of the pivoted arm d^3 until its flaring portion is in such frictional contact with the opposite side of the grate-bar as to cause the desired rigid engagement of said clutch-arms with said bar. As shown in Fig. 1 of the drawings, I preferably cause the clutch-arms to embrace, in addition to the grate-bar, a piece of wood or other similar inflammable material d^5, the latter being utilized for reasons hereinafter given. The plunger l is set for operation by pulling the same to the rear until the pin p is at the rear end of the slot b, when by rotating said plunger toward one side the upwardly-projecting portion of said pin is made to enter, as shown in Fig. 1 of the drawings, the slot-offset c, its engagement with the shoulder formed by said offset serving to hold the plunger against forward movement. Through the enlarged portion of the slot b is then inserted within the body a a match, as indicated at b^5, the head of the match being toward the forward end of the tube a. In thus setting the plunger for operation the tension of the spring n is so increased as to give such impetus to the plunger in a forward direction when the pin is disengaged from the offset c as to drive the match or greater portion thereof out through the forward end of the tubular body a, the head of the match during this outward movement being ignited by contact with the inner sharpened end of the screw e. As will readily be seen, this releasing of the plunger is caused by forcing inward the head k^2 of the trigger k', said head operating by contact therewith to push the projecting end of the pin p out of engagement with the offset c. As shown in the drawings, this pulling of the trigger may be accomplished by pulling the cord k^4, such movement of the cord being produced either by hand or through the winding of the same upon the spring-post of the alarm-bell ringing mechanism of the clock s, which will result through the rotation of said spring-post when said alarm-ringing mechanism is in operation.

From the construction shown and described it will be seen that a lighted match may be driven between the grate-bars in position for igniting the fuel of a grate or stove and that this operation may be produced from a point at some distance from the stove. It will also be seen that by connecting the operating-cord, as herein described, with an alarm-clock mechanism the fuel may be automatically ignited through the action of said alarm mechanism, which has been set in the usual manner for operation at the desired time.

It will be seen that by causing the clutch-arms of the device to embrace both a grate-bar and its plug d^5 the tendency of the lighting device will be to drop from the grate-bar when said plug has been consumed by fire communicated from the stove.

It will be observed that the device herein shown is exceedingly simple in construction and operation and that it presents a convenient and reliable means for starting fires.

It is obvious that the invention herein shown would be operative in case the match is supported in the forward end of the plunger and that the tubular body a might be made to surround and form a housing for the spring n without affecting the principle of my invention.

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

In a fire-lighting device, the combination, with the tubular body a, its slot b, and slotted offset c, and a contact-screw e, projecting within the head of said body a, of the plunger l, actuated by a spring, as described, a trigger k', pivoted, as described, adjacent to and above the offset c, an operating-cord connected with said trigger, and means for connecting said tubular body with the grate-bars of a stove or other fire-receptacle, substantially as specified.

HENRY LUTZ.

In presence of—
I. C. WRIGHT,
JAS. L. MARTIN.