

(No Model.)

J. L. CUTLER.
AUTOMATIC FIRE LIGHTER.

No. 500,995.

Patented July 4, 1893.

Fig. 1.

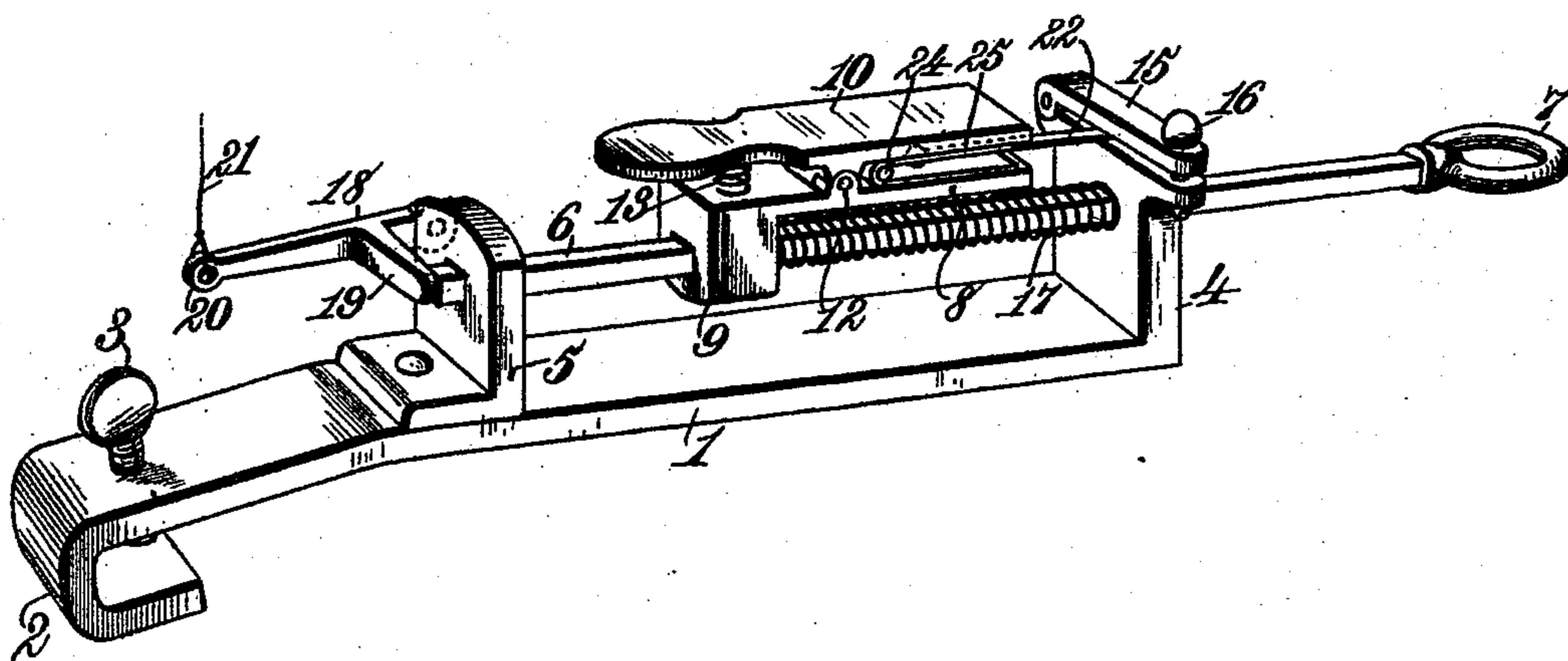


Fig. 2.

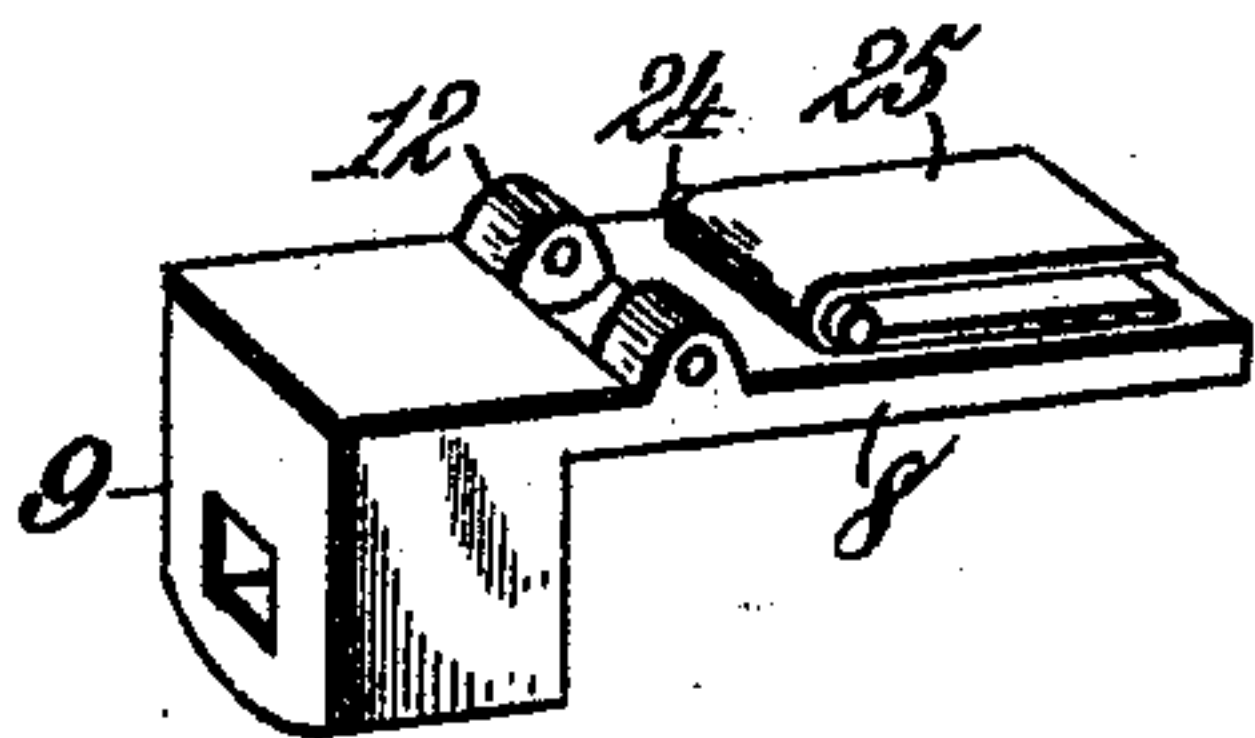
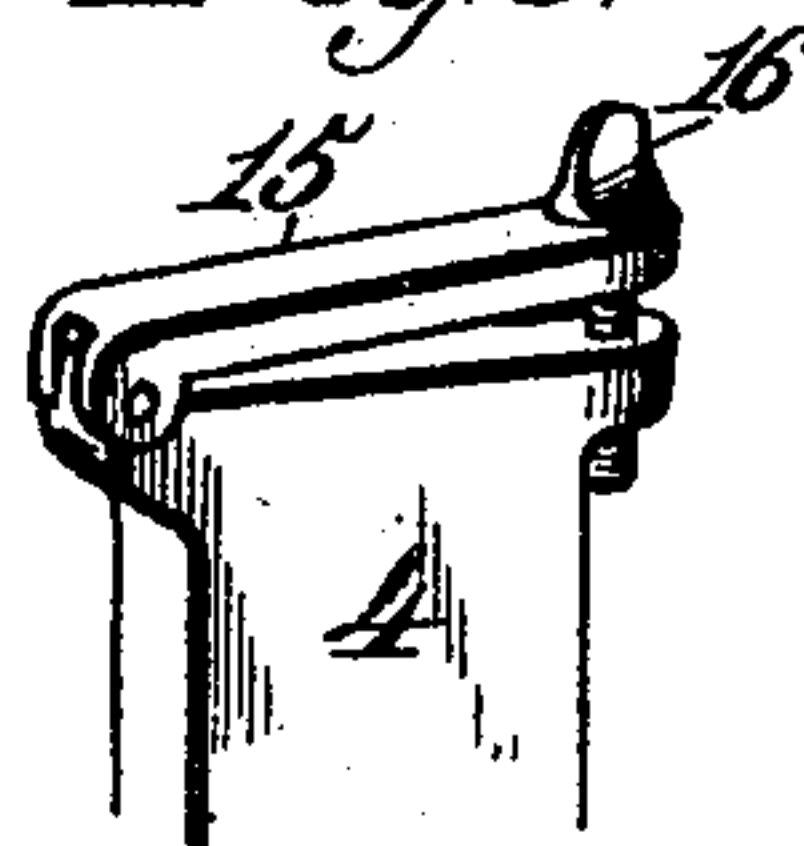


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES L. CUTLER, OF PIKETON, OHIO.

AUTOMATIC FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 500,995, dated July 4, 1893.

Application filed October 18, 1892. Serial No. 449,272. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. CUTLER, a citizen of the United States, residing at Piketon, in the county of Pike and State of Ohio, have
5 invented new and useful Improvements in Automatic Fire-Lighters, of which the following is a specification.

My invention relates to automatic fire-kindling devices and the purpose thereof is to
10 provide a novel and simple mechanism consisting of very few parts, whereby a fire may be lighted in a stove, or furnace, at any moment desired, by a servant, or other person occupying a room at some distance from the
15 point of ignition, or by a person in bed who desires to start the fire in a stove in a distant part of the room without leaving the bed.

My invention consists, to this end, in the several novel features of construction and
20 new combinations of parts hereinafter fully set forth and explained and then more particularly pointed out and defined in the claims which conclude this specification.

To enable others skilled in the art to which
25 my said invention pertains to understand and to make, construct and use the same, I will now describe said invention in detail, reference being had for such purpose to the accompanying drawings, in which—

30 Figure 1 is a perspective view of the entire device. Fig. 2 is a detail view of the lower friction-plate, removed from the device. Fig. 3 is a detail view of the clamp holding the match by which the ignition is effected.

35 In the said drawings the reference-numeral 1 indicates the base, or main supporting portion of the fire-kindler, which is ordinarily constructed of iron, or some other suitable metal. In form, it is simply an elongated,
40 thickened plate, eight or ten inches in length, or thereabout, according to the size and form of the stove in which the fire is to be kindled. Upon one end of this base-piece 1 is formed, or mounted, a hook 2, by which the
45 kindler may be rigidly attached to the apron of a stove, to which it is clamped by means of a set-screw 3, which is tapped through the base-piece directly over the hook.

At the opposite end of the base-piece 1 is
50 formed, or mounted, a post 4, and at a short distance from the other, or hooked end, is placed a substantially similar post 5, which,

for the sake of economy, is preferably made from a separate piece and bolted, screwed, or riveted to the upper side. These two posts 4 55 and 5 give support to a rod, or bar 6, which lies in apertures in said posts, both being of any angular form by which axial revolution of the bar may be prevented, while longitudinal movement is permitted. The ends of the
60 bar 6 project beyond the outer faces of both posts, one of said ends being provided with a ring, or similar device, 7, by which the bar may be conveniently moved in a longitudinal line.

65 Upon the bar, or rod 6, is mounted an ignition carriage, or slide, consisting of a lower plate 8, having a lug 9 through which the bar 6 passes and to which it is rigidly attached. The plate 8 is simply a flat strip of metal, parallel, or substantially so, with the axis of the
70 bar 6. Upon the lower friction-plate 8 is mounted an upper plate 10, having a hinged, or pivotal connection 12 to the lower plate 8. At one end of said upper plate a spring 13 is
75 interposed between the upper and lower plates, whereby the opposite end of the upper plate is pressed downward, toward the lower plate 8.

80 Upon the post 4 is hinged, or pivotally mounted a clamping arm 15, in the free end of which is mounted a set-screw 16, so connected with the top of the post 4 that, by turning it, the clamping arm 15 may be forced
85 downward. Upon the rod, or bar 6, is coiled a spiral spring 17, one end thereof resting against the post 4 and the other end abutting against the lug 9, by which the lower friction plate is rigidly attached to said bar. Upon
90 the post 5 is pivoted a trigger, or latch, 18, having an arm 19 so arranged as to lie in front of the exterior face of the said post. By raising or lowering this trigger, the arm 19 may be brought into position to engage the projecting end of the bar 6, provided the latter be
95 drawn back against the tension of the spring 17. The end of the trigger 18 is provided with an eye 20, to which a cord 21 may be attached, to enable the operator to kindle the fire without rising, in the morning, or to accomplish
100 said result when the stove, or furnace, is in a distant room.

In use, any ordinary friction-match 22 is used, its end being clamped between the top

of the post 4 and the clamping arm 15. The friction-carriage is so arranged upon the bar 6 that, when the latter is retracted sufficiently to place the spring 17 under tension, the head 5 of said match upon which the friction paste adheres passes between the upper and lower friction plates 10 and 8. Upon one of said plates is mounted a small wire 24, around which is drawn a strip of sand-paper, or other 10 suitable friction material, 25, the two ends thereof being extended toward the post 4, and the ignition-end of the match lies between the parallel, or opposite faces of said material. When the parts are thus placed, the 15 spiral spring 17 is under tension, its force being such as to normally push the friction-carriage toward the post 5. The parts are held in this relative position by means of the arm 19 upon the trigger 18, and they will remain 20 so placed until the trigger is actuated and the arm 19 withdrawn from its engagement with the projecting end of the bar.

The fire is laid with kindlings and wood, or other fuel, in the usual manner, and the 25 kindling device is clamped to the apron of the stove by means of the hook 2 and set-screw 3. A strip of paper, or other suitable material, is extended from the grate far enough to reach the flame of the match clamped upon the post 30 4. The friction-head of this match is inserted between the upper and lower friction-plates 10 and 8 by simply pressing upon the end of the upper plate over spring 13, thereby raising the other end and allowing the 35 head of the match to enter, as the bar 6 is retracted to place the spring 17 under tension. The device being thus set, it is only necessary to operate the trigger 18 to release the bar 6 and permit the spring 17 to impart lon- 40 gitudinal movement thereto, thereby drawing the two opposite friction surfaces, between which the match lies, rapidly over and in contact with its head upon which the friction paste is attached. As the upper and lower 45 friction-plates 10 and 8 pass off the end of the match the latter is ignited, and as there is nothing to obstruct its flame, or prevent free access of the normal quantity of oxygen, it burns readily, setting fire to the paper, or 50 other material, and thence kindling the fire in the grate, or fire-chamber of the stove, or furnace.

What I claim is—

1. In an automatic fire kindler, the combi- 55 nation of a base-piece having two stationary posts, a match-clamp mounted on one of said posts for clamping a match in a stationary

position, a trigger pivoted to the other post, a longitudinally movable bar extending through the said posts and adapted at one end to en- 60 gage the trigger, a spring for throwing the bar lengthwise, and match-igniting plates connected to and moving longitudinally with the spring-pressed bar for igniting the match 65 while the latter is held stationary by the match-clamp, substantially as described.

2. In an automatic fire-kindler, the combination with the base-piece having a hook and set-screw at one end, to adapt it to be clamped to the stove-apron, of a non-rotatable, spring- 70 pressed, longitudinally movable bar, having support in posts upon said base-piece, a carriage consisting of a lower friction-plate, provided with a lug, rigidly attached to said bar, and an upper plate hinged or pivoted upon 75 the lower, a spring interposed between the said plates upon one side of the point of pivotal attachment, a clamping arm on one of the posts to hold a match having its friction- 80 head lying between the said upper and lower plates upon the other side of the point of pivotal attachment, and a trigger pivoted upon the other post and having engagement with the projecting end of the said bar, when the same is retracted, substantially as de- 85 scribed.

3. In an automatic fire-kindling device, the combination with a base-piece having two posts, of a bar supported in said posts and having capacity for longitudinal movement, 90 a spring pressing said bar in one direction, a lower friction-plate rigidly mounted on said bar, an upper friction-plate pivoted to the said lower plate near its end, a spring interposed between said plates upon one side of 95 the pivotal axis, a clamp-arm upon one of the posts upon the other side of said axis, a trigger pivoted upon the other post and having an arm extending in front of the broad outer face of said post, to enable it to engage the 100 projecting end of the said bar, a wire mounted transversely upon one of said plates and a friction material drawn over said bar and lying on both sides of the head of the match which is held by the clamping-arm on the post, 105 substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JAMES L. CUTLER. [L. S.]

Witnesses:

G. S. HAGANS,
J. D. HAGANS.