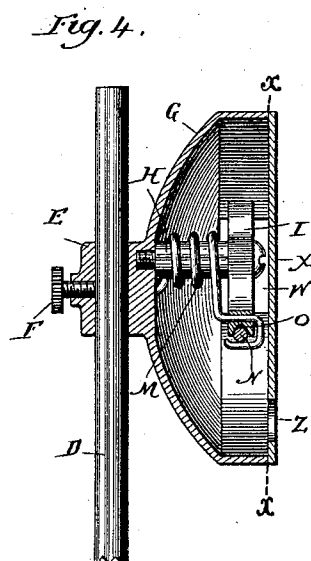
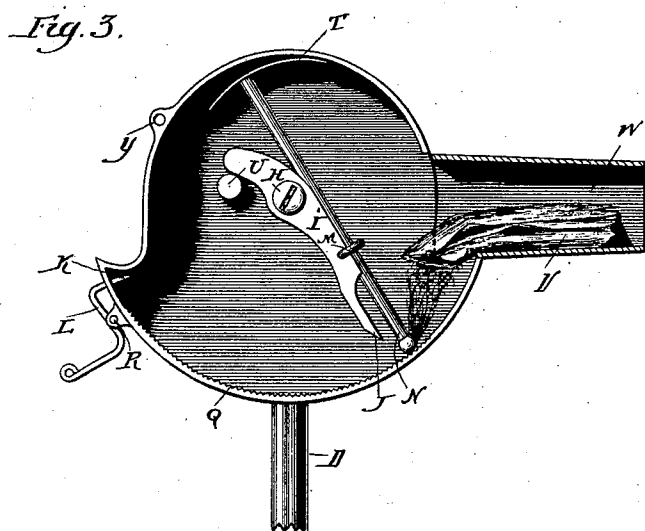
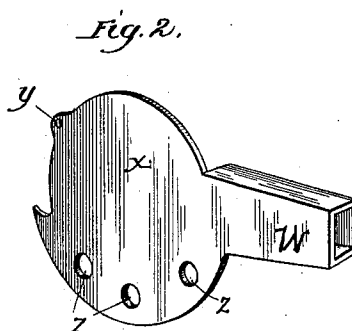
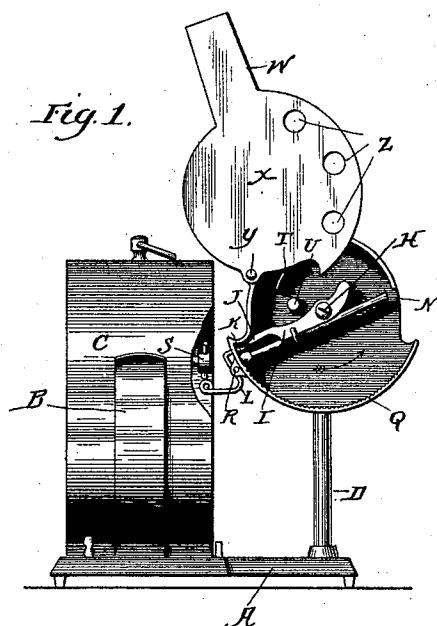


(No Model.)

M. W. LYDON.
AUTOMATIC FIRE LIGHTER.

No. 581,357.

Patented Apr. 27, 1897.



Witnesses:

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UNITED STATES PATENT OFFICE.

MARTIN W. LYDON, OF LAWRENCE, MASSACHUSETTS.

AUTOMATIC FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 581,357, dated April 27, 1897.

Application filed June 30, 1896. Serial No. 597,655. (No model.)

To all whom it may concern:

Be it known that I, MARTIN W. LYDON, a citizen of the United States, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Automatic Fire-Lighters, of which the following is a specification.

My invention relates to a new and useful improvement in automatic fire-lighters, and has for its object to provide a device of this description by means of which a fire may be automatically lighted at a predetermined time without the attention of an attendant, thereby saving much time and fuel over the method now in use.

With these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of my improvement, the cover thereof being swung open so as to show the interior of the casing and also showing the relative position of an alarm-clock to my device for actuating the same; Fig. 2, a detail perspective of the cover or cap for the casing, with which is formed a flue. Fig. 3 is a vertical longitudinal sectional view on the line *xx* of Fig. 4, the flue being shown in section and in operative position, and showing the match after it has been drawn over the roughened surface and in position to light the fuse; Fig. 4, a cross-section of the casing, showing the method of supporting it upon the upright.

In carrying out my invention I provide a base A, from which projects upward the spring-arms B, so arranged as to receive the alarm-clock C and hold the same in position against accidental displacement. Also, projecting upward from the base is a standard or upright D, upon which the bracket E is adapted to slide and may be held in any desired adjustment by a set-screw F. Formed

with or secured to this bracket is a casing G, which serves to house the operating parts of my improvement and has a post H set therein, upon which is pivoted the actuating-lever I, and said lever terminates in a nose J, which is adapted to be engaged by the nose K of the trigger L, and this lever is given a tendency to revolve in the direction of the arrow by the spring M, which is coiled about the post, one end being secured to the back wall of the casing and the opposite end passed through a hole in the lever and bent across its outer edge, so as to serve as a clamp for holding a match N in position in the V-shaped groove O, formed in said edge. The inner walls of the casing are formed upon two circles, the larger of which serves as an igniting-surface, over which the head of the match is drawn, as indicated by Q.

The trigger L is pivoted at R to a suitable lug formed upon the casing and extends outward within the path of travel of the key S, so that when the alarm-clock is put in operation in the usual manner the revolving of the key S will force the trigger L from its normal position, thereby releasing the lever I and permitting it to revolve in the direction of the arrow, by which means the match will be ignited, as before described.

In order that the ignition of the match may be insured, a buffer-spring T is secured upon the inner wall of the casing and so arranged that as the match swings with the lever the blank end thereof will pass into contact with this spring and ride thereon, so that the resiliency of said spring will tend to force the head of said match against the roughened surface Q, thereby increasing the friction therebetween.

The swinging of the lever I is limited by the stop-pin U, so that when the head of the match is brought into the proper position after having been ignited it will there remain until the lever has again been set, and the flame from the match is utilized by igniting the paper or other fuse V, which may be inserted within the flue W, said flue being formed with or secured to the cap X, and this cap I prefer to pivot at Y to the casing, so that it may be swung into place after the match has been properly placed upon the le-

ver and again swung open, so as to remove the old match and substitute a new one therefor as well as to reset the lever for a further operation of the device.

5 A series of holes Z are formed in the lower portion of the cap, so that the proper amount of air may be fed to the match and fuse when ignited to support the combustion thereof and also to form a draft through the flue 10 which will cause the flame from the match and fuse to pass outward, whereby it will gain access to the fire to be lighted.

From this description it will be seen that it is only necessary to place a match in proper 15 relative position upon the lever I, set said lever by bringing its nose into engagement with the nose of the trigger L, and set the alarm-clock at the predetermined time it is desired to start the fire, and so arrange the 20 fuse V that it will pass to the material to be lighted to insure the starting of the desired fire at the time indicated by the alarm-clock.

My improvement is intended chiefly for family use, where it effects a saving of about 25 thirty-three per cent. of the coal which is now used in most homes where the fire is run over night in order that the house may be of a proper temperature when the family arises, as the necessity for running the fire all night 30 to accomplish this result is obviated, since said fire may be started about half an hour before it is desired to use the same with the advantage of producing a better fire throughout the day than would otherwise be the case 35 were the grate not cleaned over night.

In a number of homes it is the practice to permit the fire to go out at night for the sake of economy, and in winter much physical suffering will be saved, beside a saving of time 40 in the morning, which is often sorely needed for rest.

My invention may also be used in connection with the fire-alarm system to light the fires under the boilers of fire-engines, thereby 45 saving the time while the firemen are dressing and arriving upon the scene, which is quite important, as the smallest fraction of time under some circumstances means the saving or loss of vast properties, as well as 50 lives, since it is often the case that a fire-engine answering the call arrives at the conflagration without having a sufficient head of steam to operate effectively, thus permitting

the fire to gain such headway as to pass beyond control. 55

My improvement may also be used in connection with stationary boilers where they are not run over night, but where it is necessary to have steam at a given time in the morning. It may also be used for blasting purposes 60 where the condition requires some time for the operators to get to a safe distance, and would be more reliable than a fuse as to time.

The method of applying a lighter to a stove or the like is to first prepare the stove with 65 kindling and coal the night before, arrange the damper for the draft, then place the lighter upon the covers of the ash-pit on the front of the stove, so that the flue of the lighter will extend through the grate in such 70 manner that when the paper fuse is lighted in the flue it can communicate with the paper in the stove-grate, and, finally, wind the clock and set it in place upon the base, so that the key S will be in position to strike the trigger 75 and operate the same to release the lever, whereby the match will be ignited to start the fuse.

Having thus fully described this invention, what I claim as new and useful is— 80

The herein-described combination with an alarm-clock; a base for the support of said clock; spring-arms for holding said clock in position upon said base; an upright supported by the base; a casing carried by said upright; 85 a lever having a V-shaped edge pivoted within said casing; a spring for actuating said lever, said spring adapted to hold a match upon the V-shaped edge of said lever; a roughened surface over which the head of the match is 90 drawn; a buffer-spring for insuring the contact of said head with said surface; a trigger for setting the lever against the action of the spring; a cap for closing the casing, said cap having draft-holes formed therein; and a flue 95 carried by the cap so arranged as to receive a fuse and permit its ignition by the match, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of subscribing witnesses. 100

MARTIN W. LYDON.

Witnesses:

S. S. WILLIAMSON,
JOHN P. S. MAHONEY,
JOHN P. BLACK.