

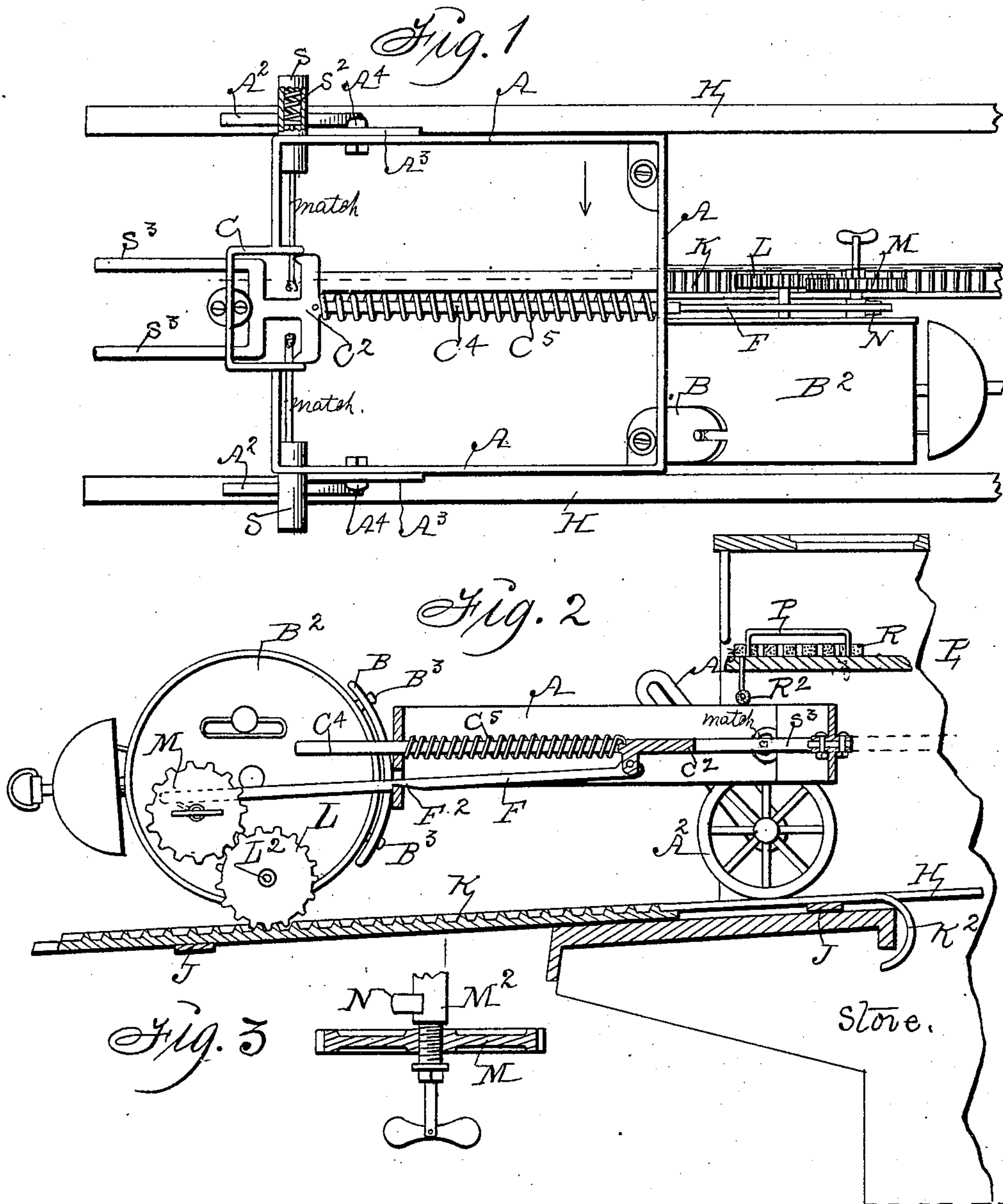
No. 680,299.

Patented Aug. 13, 1901.

O. VOLKERTS.  
TIME FIRE LIGHTER.

(Application filed Nov. 17, 1900.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

OLUF VOLKERTS, OF SAC CITY, IOWA.

## TIME FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 680,299, dated August 13, 1901.

Application filed November 17, 1900. Serial No. 36,822. (No model.)

*To all whom it may concern:*

Be it known that I, OLUF VOLKERTS, a citizen of the United States, residing at Sac City, in the county of Sac and State of Iowa, have  
5 invented a new and useful Automatic Fire-Lighter, of which the following is a specification.

My object is to avoid the discomforts and annoyances incident to getting out of bed in  
10 a cold house in the morning to light a fire in a stove.

My invention consists in the construction, arrangement, and combination of parts, as hereinafter set forth, pointed out in my  
15 claims, and illustrated in the accompanying drawings, in which--

Figure 1 is a top or plan view showing the positions of the different operative elements relative to each other. Fig. 2 is a vertical  
20 longitudinal sectional view of the same parts shown in Fig. 1 applied to a stove as required for practical use. Fig. 3 is a detail view of an adjustable gear-wheel on a screw-threaded journal on the end of a shaft extending  
25 from an alarm-clock to serve as a means of governing the movement of the clock relative to a stove and a rack connected with the stove.

The letter A designates an oblong frame  
30 composed of two meshing overlying parts fixed together by means of screws, as shown in Fig. 1 or in any suitable way, mounted upon wheels A<sup>2</sup>, journaled to slotted bearers at A<sup>3</sup>, that are adjustably connected with the  
35 rear portions of the parallel sides of the frame by means of clamping-screws A<sup>4</sup>. A curved plate B is fixed to the rear end and corner portion of the frame A and provided with slots for detachably connecting an alarm-  
40 clock B<sup>2</sup> therewith by means of the fixed studs B<sup>3</sup> on the clock, that are adapted to enter said slots.

The front end cross-piece of the frame A is in the form of a three-sided central bearing  
45 C, adapted to support a sliding match-lighter and to retain matches in proper position relative to said frame and a torch in a stove.

C<sup>2</sup> is a spring-actuated frame slidably connected with the frame A for rubbing matches  
50 when connected with the frame A, so that a torch under a stove-grate will be lighted when the matches are rubbed.

C<sup>4</sup> is a shaft extended forward from the frame C<sup>2</sup> through a bearing in the front cross-piece, and C<sup>5</sup> is a coil-spring on the shaft, that  
55 normally retains the match-rubbing frame C<sup>2</sup> projected through the bearing C, as shown in Fig. 1.

F is a latch hinged to the shaft C<sup>4</sup> and extended forward through an aperture in the  
60 front cross-bar of the frame A and provided with a notch and shoulder F<sup>2</sup>, that will engage and retain the frame C<sup>2</sup> and shaft C<sup>4</sup> in position, as shown in Fig. 2, when the spring C<sup>5</sup> is compressed and power stored therein for  
65 forcing the frame C<sup>2</sup> into position, as shown in Fig. 1 and as required to rub the matches and light the torch.

A frame composed of two meshing bars H and cross-bars J has a rack K, fixed to the  
70 centers of the cross-bars, and a hook K<sup>2</sup> on the end of the rack, adapted to be connected with the hearth of a stove, as shown in Fig. 2, in such a manner that the wheels A<sup>2</sup>, that support the frame A, will travel on the parallel  
75 bars H.

A gear-wheel L is placed loosely on a journal L<sup>2</sup>, that projects from the alarm-clock B<sup>2</sup>  
80 in such a manner that said wheel will support the clock and travel on the rack K.

M is a gear-wheel adjustably mounted on the alarm-winding shaft M<sup>2</sup>, extended from the clock B<sup>2</sup>, to engage and actuate the wheel L on the track-bars H. The portion of the  
85 shaft to which the wheel H is fitted is screw-threaded, as shown in Fig. 3, and the bore in the hub of the wheel is also screw-threaded, so that the wheel can be rotated on the shaft and moved outward thereon.

N is a cam on the shaft M<sup>2</sup>, that will when  
90 the shaft is rotated engage the free end of the latch F and lift it out of the notch F<sup>2</sup> as required to release the force of the spring C<sup>5</sup> to press the frame A<sup>2</sup> forward, and therewith rub the matches to light the torch under the  
95 grate in the stove, as indicated by dotted lines in Fig. 2.

P represents a frame adapted to retain perforated asbestos R on top of a grate in a stove,  
100 as shown in Fig. 2, in such a manner that when the asbestos is saturated with oil and the oil ignited by means of the torch R<sup>2</sup>, fixed to the frame P, it will light kindling and fuel placed in the stove and over the asbestos and



torch. The frame P is adapted in shape to be pushed in and out over the grate and to prevent fuel from coming in close contact with the absorbent asbestos R.

5 In the practical use of my invention when all the parts are properly adjusted and the alarm-clock set for operation at a fixed time the wheel M is rotated and moved outwardly  
10 on the screw-threaded journal, so that it must be moved in a reverse way to be tightened sufficiently to transmit power and motion to the wheel L on the rack K as required to cause the wheel L to travel on the rack and move the frame A and the clock B<sup>2</sup> away  
15 from the stove far enough to withdraw the frame A<sup>2</sup> from under the grate of the stove. It is obvious the torch will be lighted while the wheel M is being tightened on the shaft M<sup>2</sup>.

Spring-actuated match-holders are formed  
20 on or fixed to the front corners of the frame A, as shown in Fig. 1, in such a manner that coil-springs s<sup>2</sup> in said holders will normally press matches against the outside faces of the parallel extensions s<sup>3</sup> of the frame C<sup>2</sup>, that  
25 project through openings in the frame C, in such a manner that when the spring-actuated frame C<sup>2</sup> is forced forward the matches will be rubbed and the springs s<sup>2</sup> in the match-holders will move the matches into proper  
30 position to light the torch R<sup>2</sup>, and thereby the oil in the asbestos R, connected with the frame P. It is therefore obvious that when the match-rubbers s<sup>3</sup> have passed into position, as shown in Fig. 1, the matches will be  
35 pressed inward by the automatic actions of the spring-actuated holders s as required to assume the position shown in the same figure.

From the foregoing description of the purpose, construction, function, and arrangement  
40 and combination of all the parts the practical operation and utility of my invention will be understood by persons familiar with automatic mechanism; and

What I claim as new, and desire to secure  
45 by Letters Patent, is—

1. In an automatic fire-lighter, a frame having one end portion adapted to support match-holders, spring-actuated match-holders attached to said frame and a sliding frame  
50 adapted to rub the fuse on the ends of the matches and to allow the matches to be pressed inward for lighting a torch, arranged and combined to operate in the manner set forth for the purposes stated.

5 2. In an automatic fire-lighter, a frame having one end portion adapted to support

match-holders, spring-actuated match-holders attached to said frame, a sliding frame adapted to rub the fuse on the ends of the matches and to allow the matches to be  
60 pressed inward for lighting a torch, and a torch connected with a grate in a stove, arranged and combined to operate in the manner set forth for the purposes stated.

3. In an automatic fire-lighter, a frame having a bearing at one end to hold matches,  
65 traction-wheels connected with the frame, an alarm-clock connected with the frame, a spring-actuated match-rubber slidably connected with the frame, and means to transmit power and motion from the clock to the match-rubber, arranged and combined to operate in the manner set forth, for the purposes stated.  
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4. In an apparatus for lighting fire in a  
75 stove or furnace, a frame consisting of parallel side bars connected by cross-pieces and a rack fixed to the cross-pieces to extend parallel with the side bars, a frame mounted upon wheels to hold matches and match-rubbing mechanism, an alarm-clock and an  
80 alarm-winding shaft connected with said frame, a gear-wheel connected with the alarm-winding shaft of the clock and a meshing gear-wheel journaled to the clock-case, arranged and combined to operate in the manner set forth, for the purposes stated.  
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5. An apparatus for lighting fires, comprising a frame mounted on traction-wheels, spring-actuated match-holders at one end of  
90 the frame, a spring-actuated match-rubber mounted on the frame, an alarm-clock attached to the other end of the frame, a latch pivotally connected with the match-rubber and provided with a notch and shoulder to  
95 engage the end of the frame, a track to support the traction-wheels, a rack connected with the track to engage a gear-wheel, a gear-wheel journaled to the frame of the clock, a meshing gear-wheel adjustably mounted on  
100 the end of the alarm-winding shaft of the clock, a cam on said shaft to lift said latch, and a device for retaining asbestos under the grate in a stove or furnace, a piece of asbestos in  
105 said device and a torch suspended from said device, arranged and combined to operate in the manner set forth, for the purposes stated.

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