No. 682,411. Patented Sept. 10, 1901.

C. L. HOOD.

TIME FIRE LIGHTER.

(Application filed Feb. 25, 1901.)

(No Model.)

Fig. 1.

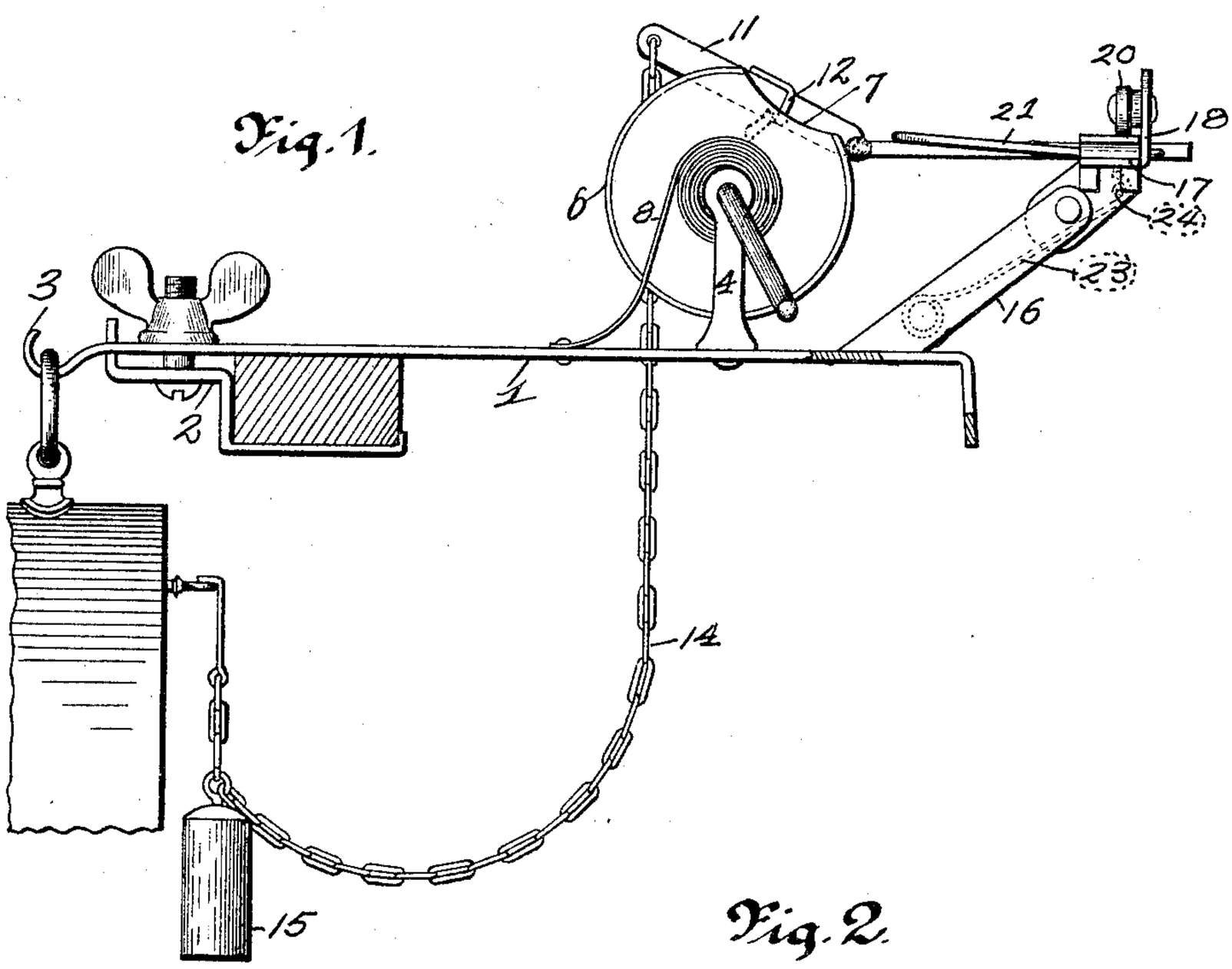


Fig. 2.

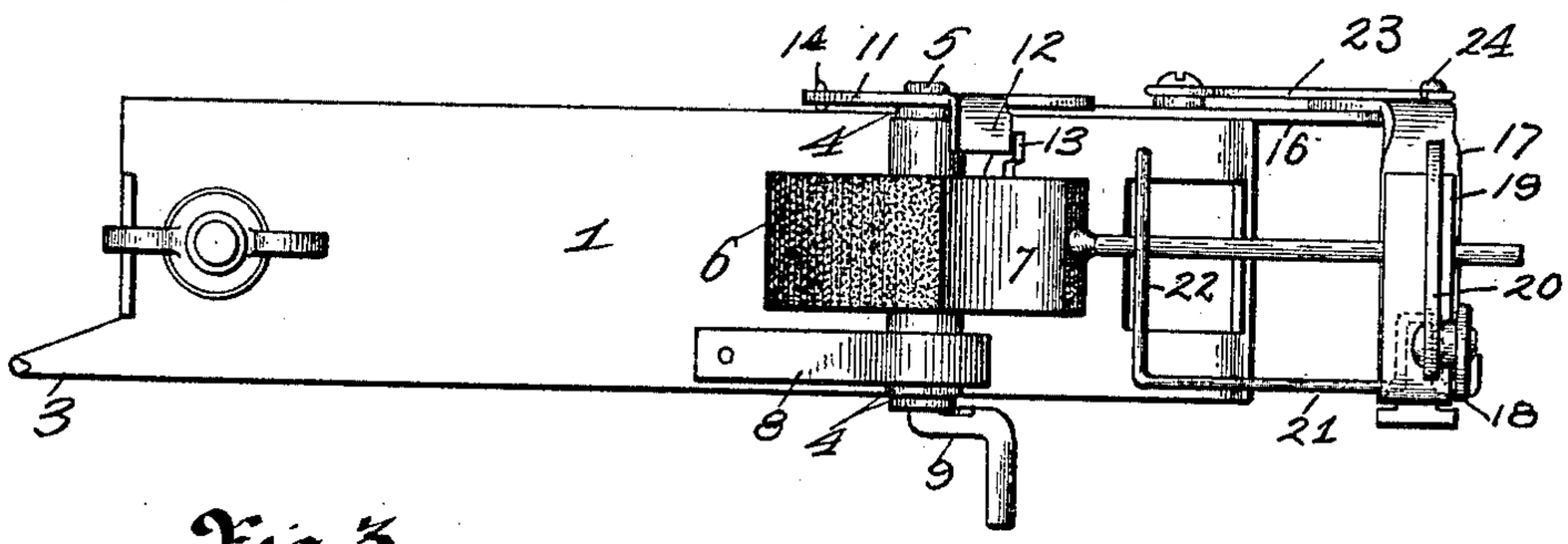
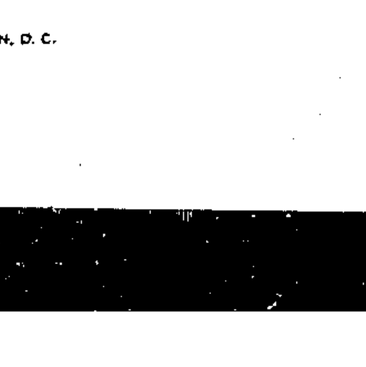


Fig. 3.

Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES L. HOOD, OF ST. LOUIS, MISSOURI.

TIME FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 682,411, dated September 10, 1901.

Application filed February 25, 1901. Serial No. 48,713. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. HOOD, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Automatic Fire-Lighters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to automatic fire-lighters; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of this invention is to provide an improved fire-lighter adapted to be supported adjacent to the combustible material to be ignited and connected to the actuating device, whereby it will be automatically released and set in operation at a predetermined time to strike a match, and thereby ignite the combustible material adjacent thereto.

Figure 1 is a side elevation showing my invention in position to operate. Fig. 2 is a plan view of the same. Figs. 3 and 4 are detail views showing different parts embodied in my invention.

In the construction of the invention I provide a supporting-plate 1, having a clamp 2, whereby it may be attached to the object upon which it is to be supported. A hook 3 is formed on the rear end of the plate 1, the same being adapted to support the operating device by means of which the striking device is released and permitted to operate. This actuating device may consist of a clock or other similar means, which at a predetermined time will release the mechanism which strikes the match. Upon the opposite end of the plate 1 are supported two standards 4, carried by which is a short rod or shaft 5. Between the standards 4 and upon the said shaft 5 is mounted a wheel 6, having a coating of emery or other abrasive material, and the purpose of the said wheel is to strike the match. In one side of the wheel 6 is formed a groove or depression 7, the purpose of which will presently appear. A coil-spring 8 has one end secured to the shaft 5, and the opposite end thereof is attached to the plate 1.

9 indicates a crank rigid with one end of the shaft 5, whereby the said shaft may be rotated to wind the spring 8, and a shoulder is formed on the inner side of the said crank 9, and the said shoulder contacts with the standard 4 adjacent thereto, and thereby limits the movement of the shaft 5 and the wheel 6 to less than one complete revolution, so that when the wheel is released and permitted to turn by the action of the spring 8 the groove 7 will be brought to the head of the match, thereby permitting the match to be thrown forwardly to light the combustible material.

One of the standards 4 is extended above the bearing in which the shaft 5 is mounted, and pivoted to the upper extremity of the said standard is an arm 11, extending inwardly from which is a projection 12, the same being adapted to contact with a pin 13, rigid with the wheel 6. A chain or other similar connecting device 14 has one end attached to the arm 11, and carried on the opposite end of the said chain is a weight 15, the object of which is to operate the arm 11 and release the wheel to permit the same to be rotated by the spring 8, and thereby strike the match.

Attached to the plate 1 in front of the parts just described is a standard 16, carried on the upper end of which is a clamping device by means of which the match is supported. The said clamping device consists of an arm or plate 17, pivoted to the upper end of the standard 16 and provided near its free end with an ear or projection 18. A clamping-plate 19 is pivoted to the said plate 17 adjacent to the projection 18, and a locking-cam 20 is supported by said projection 18, and the purpose thereof is to force the plate 19 down against the plate 17, and thereby support the match in position. In operation the match is placed between the said plates 17 and 19, as shown in Figs. 1 and 2, and the locking-cam 20 is operated, as stated, to hold it in position. A small wire or rod 21 is attached to the upper end of the plate 19 and is provided on its lower end with a horizontal extension 22, the purpose of which is to bear against the upper side of the match and assist in holding the same in position and prevent it from becoming broken when the wheel 6 is released, as above described. A spring 23 is supported by the standard 16, and the upper end of the said spring bears against the pin 24, rigid with the plate 17, and when-

ever the wheel 6 is released and is operated by the spring 8 and the groove or depression 7 is brought before the head of the match the said spring 23 will throw the match-carrying attachment rearwardly and project the match forwardly, as indicated by dotted lines in Fig. 1.

To use the device, it is supported in any suitable manner adjacent to the combustible material to be ignited, and the actuating device is preferably suspended from the hook 3, as shown in Fig. 1. The crank 9 is operated to wind the spring 8, and the projection 12 is then engaged against the pin 13 to prevent the unwinding of the spring 8 and to hold the emery-wheel in position. The connection 14 is then attached to the actuating device in such manner that it will be released at a predetermined time to permit the weight 15 to drop and operate the arm 11 and draw the same away from the projection 13 and permit the spring 8 to unwind, and thereby rotate the wheel 6. The match is inserted in position between the plates 17 and 19, and the locking-cam 20 is operated to press the said plate 19 close upon the match and clamp it securely in position. The head end of the match is underneath the horizontal portion 22 of the rod 21, and said head is placed upon the wheel 6 on the side of the groove or depression 7 opposite from the direction of rotation. At the required time the actuating device releases the connection 14 and permits the weight 15 to drop, as stated, and the wheel 6 is rotated by the spring 8. The rotation of the said wheel is limited by the shoulder 10, which contacts with the standard 4, and when the said wheel is stopped the groove 7 is in such position as to release the head of the match and permit the spring 23 to throw the match-carrying device around in the position shown by dotted lines in Fig. 1. A section of paper or other highly-combustible material is preferably supported in such position that the head of the match will be thrown in communication therewith by the operation just described and convey the flame to the combustible material which is to be ignited.

The device can be supported any distance from the fire-pot of the stove, and, as stated, the fire can be conveyed to the combustible material within the stove by means of a section of paper or other similar article extending from the fire-pot to a position in which it will become ignited by the match.

I claim—

1. An automatic fire-lighter, consisting of a plate, two vertical standards carried by said plate, a shaft supported by said standards, a wheel having an abrasive coating mounted upon said shaft, a spring having one end connected to the shaft and the opposite end attached to the plate, a crank rigid with the shaft for winding the spring, a shoulder integral with said crank and adapted to engage against one of the vertical standards to stop the wheel, a locking-pawl supported by one of the standards and adapted to hold the wheel when wound, means for releasing the locking-pawl at a predetermined time, a spring-actuated clamp, and means for fixing a match in said clamp so that the end thereof will bear upon the abrasive coating of the wheel, substantially as specified.

2. An automatic fire-lighter, consisting of a plate, two vertical standards carried thereby, an emery-wheel having a groove in its periphery, supported between said standards, a spring for operating said wheel, a crank for winding the spring, a shoulder rigid with the crank and adapted to engage with one of the said standards to stop the wheel, a locking-pawl for holding the emery-wheel, means for releasing the locking-pawl at a predetermined time, and a spring-actuated match-support mounted adjacent to the emery-wheel, substantially as specified.

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

CHARLES L. HOOD.

Witnesses:

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