

No. 764,628.

PATENTED JULY 12, 1904.

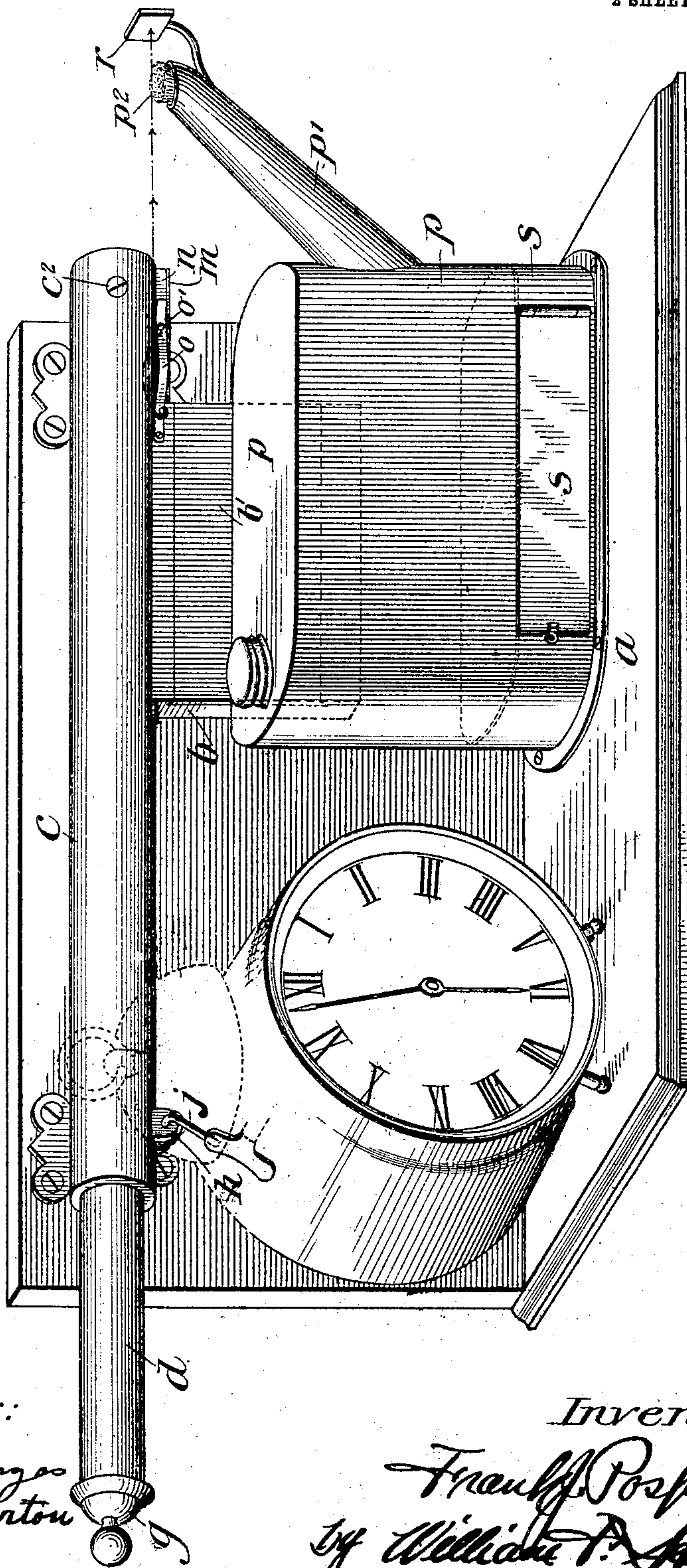
F. J. POSPISIL.  
AUTOMATIC FIRE LIGHTER.

APPLICATION FILED JUNE 18, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Witnesses:*

Eugene P. Sargus  
Edward Sartou

*Inventor:*

Frankf. Postpaid  
by William P. Hall.  
his Atty.

No. 764,628.

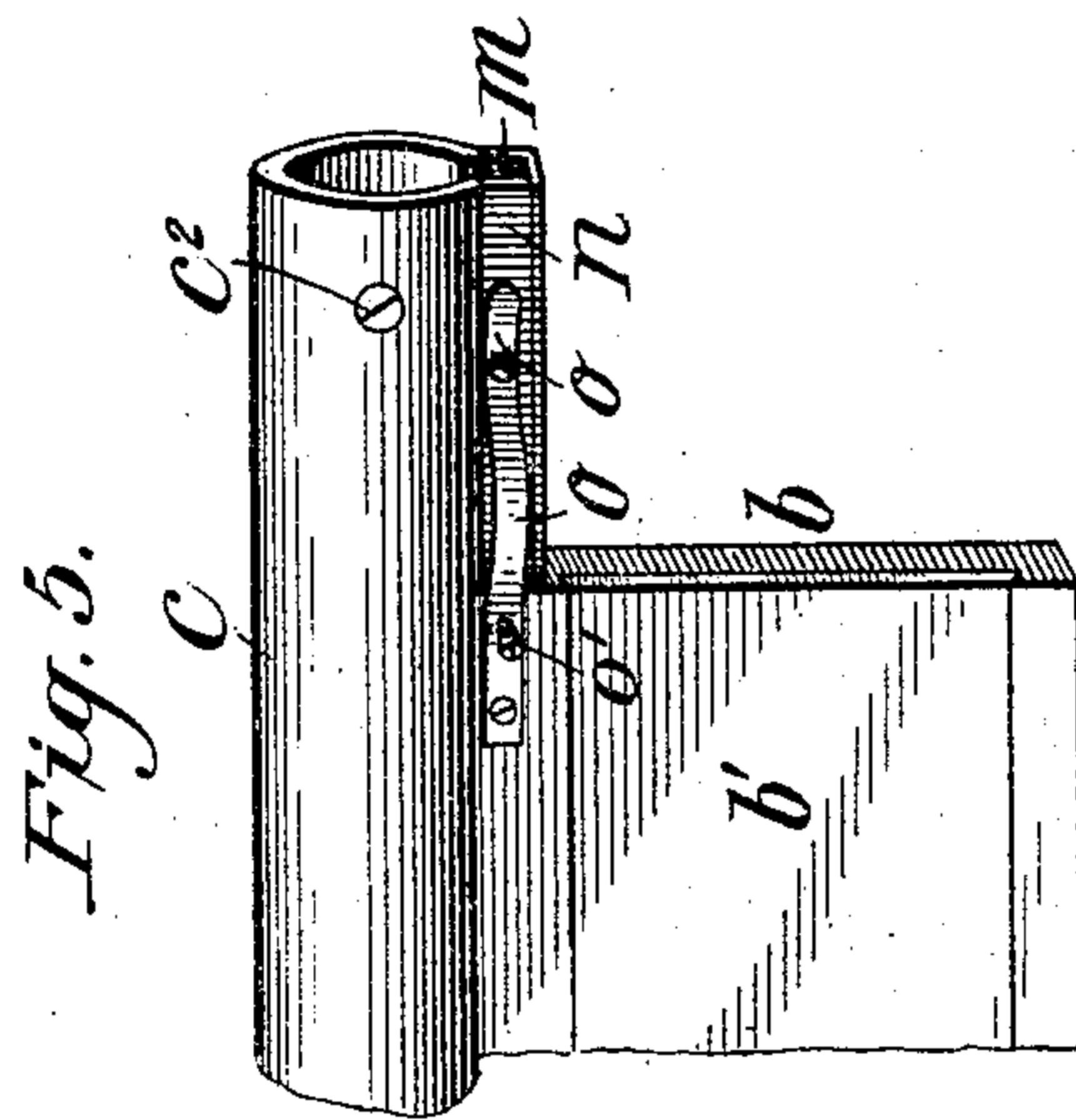
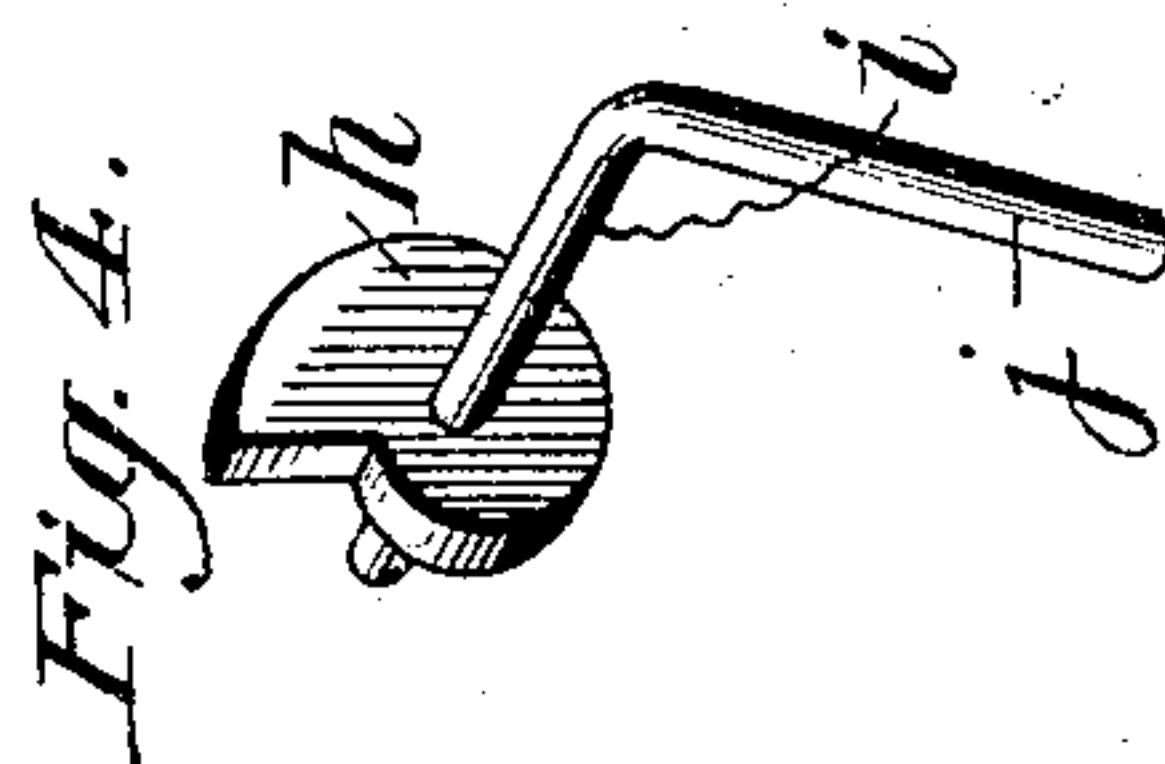
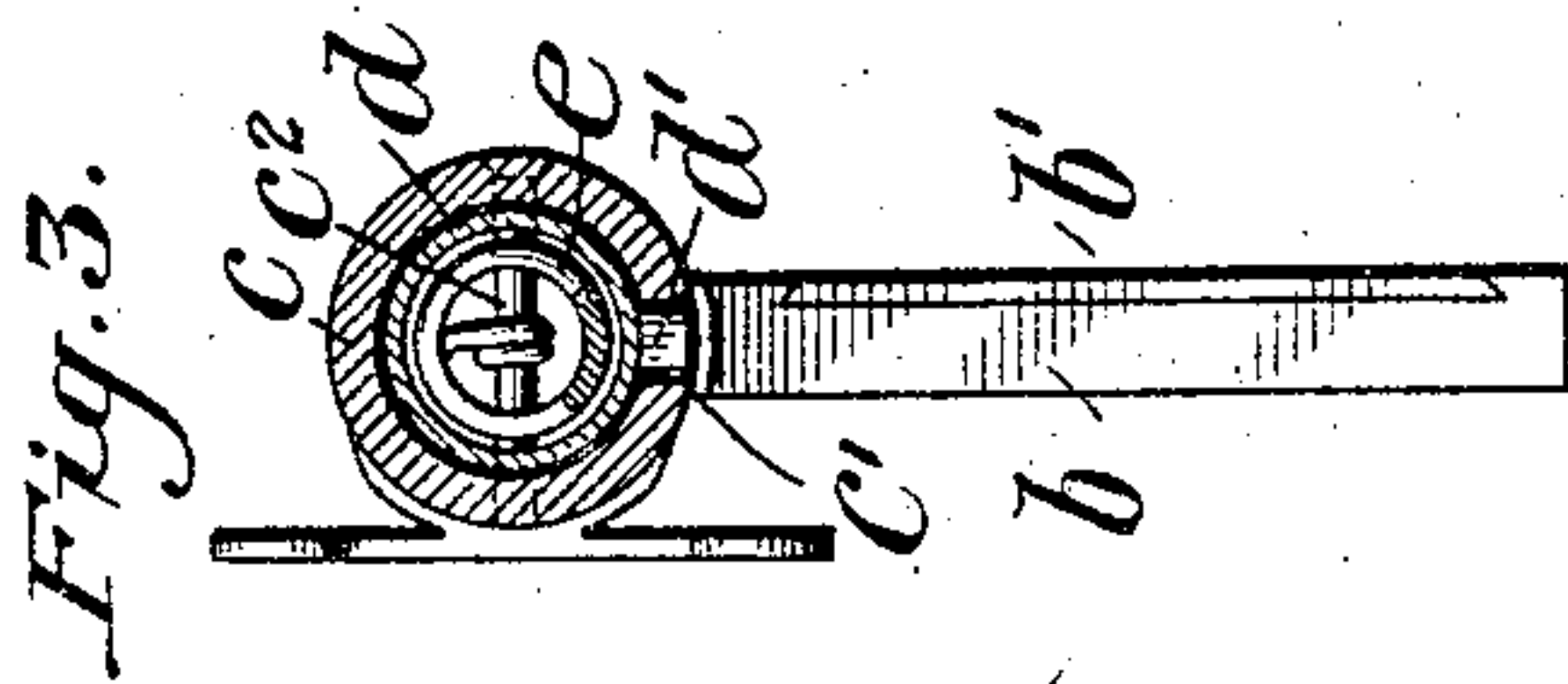
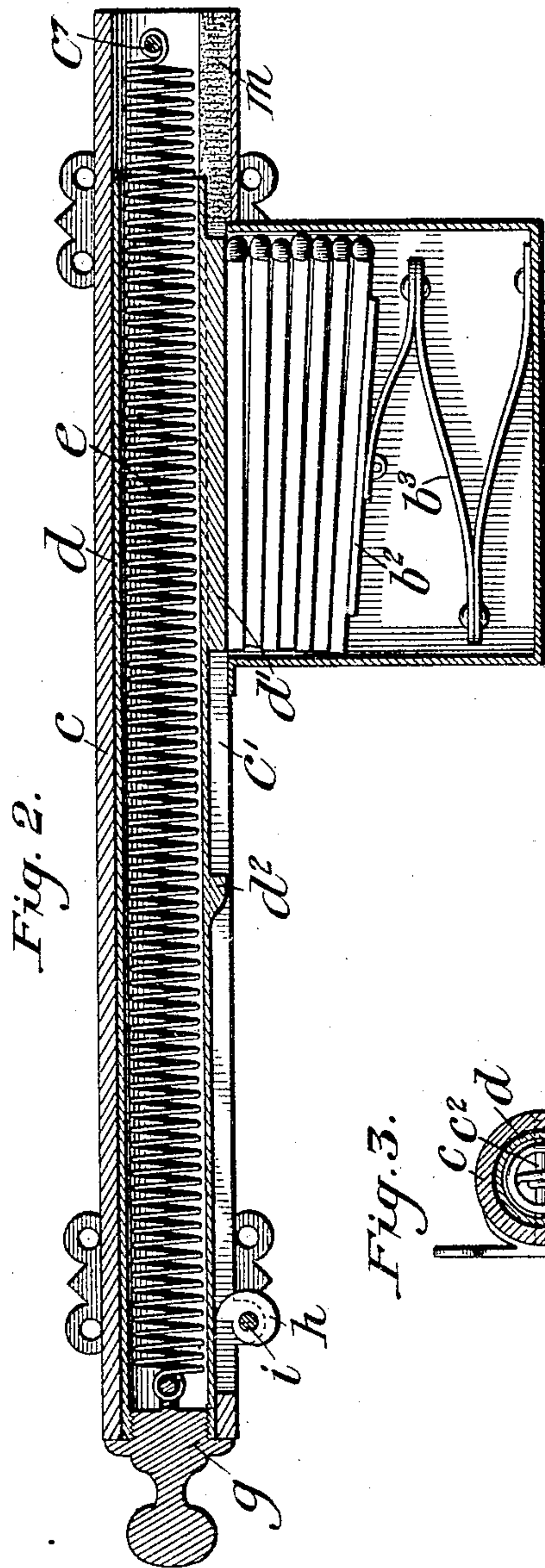
PATENTED JULY 12, 1904.

F. J. POSPISIL.  
AUTOMATIC FIRE LIGHTER.

APPLICATION FILED JUNE 18, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

Eugene P. Barger  
Edward Sartori

Inventor:

Frank J. Pospisil  
by William F. Hall  
his Atty.



# UNITED STATES PATENT OFFICE.

FRANK J. POSPISIL, OF LINCOLNVILLE, KANSAS.

## AUTOMATIC FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 764,628, dated July 12, 1904.

Application filed June 18, 1903. Serial No. 162,010. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK J. POSPISIL, a citizen of the United States, and a resident of Lincolnville, in the county of Marion and State of Kansas, have invented certain new and useful Improvements in Automatic Fire-Lighters, of which the following is a specification.

My invention relates to time-operated mechanism for automatically lighting a fire, and particularly to that type of apparatus in which the ignition of a match is effected and the same thrust in proximity to the material to be lighted, which is preferably located within or in proximity to the fire-pot of the stove, the ignition of the match being accomplished by rubbing the head thereof against a suitable friction-surface in the forward thrust thereof.

One of the primary objects of the present invention is to provide a magazine for holding the matches with which the ejecting part of the mechanism coacts to project the matches held in the magazine therefrom one at a time.

Another object is to provide a supply of liquid fuel in proximity to the fire-pot of a stove and in the path of movement of the match and to associate therewith means for arresting the movement of the match with the ignited portion thereof in close proximity to the desired point of ignition of the liquid fuel.

Other objects of the invention will appear and the many advantages of the same be appreciated when the embodiment thereof, to be hereinafter described, is fully disclosed.

To this end the invention includes the combination and arrangement of component parts, to be hereinafter described, and particularly pointed out in the claims.

While the invention is susceptible of various modifications, the accompanying drawings illustrate and I shall hereinafter describe in connection therewith what is now conceived to be the preferable embodiment thereof.

In the drawings, Figure 1 is a perspective view of the complete mechanism. Fig. 2 is a longitudinal sectional view through the ejecting mechanism and magazine associated therewith. Fig. 3 is a cross-sectional view of the ejecting mechanism, showing the magazine in end elevation. Fig. 4 is a detail view. Fig.

5 is a detail perspective view of the magazine and parts contiguous thereto.

In the accompanying drawings a bracket of suitable construction (designated by the letter *a*) carries all of the operating parts of the improved mechanism and is designed to be secured adjacent to the front of a stove.

The igniting apparatus includes, essentially, a match-magazine, a friction-surface located in advance thereof, and ejecting means controlled by a time-operated device which are designed to force the matches one at a time from the magazine and to carry the same to the medium to be ignited, passing the head of the match in its travel into contact with the friction-surface.

The match-magazine is designated in the accompanying drawings by the letter *b*, and preferably comprises a rectangular box or casing of approximately the length and width of a match, said magazine depending from a barrel *c*, constituting a guide for the match-ejector. The magazine *b* opens out at its upper end through the wall of the barrel *c* in alinement with a slot *c'*, running longitudinally of the latter, is closed at its bottom, and is provided with a displaceable side *b'*, by means of which access may be had to the interior of the magazine for filling the same or for other purposes. Within the magazine a spring-pressed follower-plate *b<sup>2</sup>* is located, upon which a row of matches rest in superimposed position, said plate being pressed toward the upper open end of the magazine by a spring *b<sup>3</sup>*, interposed beneath the under face of the plate *b<sup>2</sup>* and said closed bottom of the magazine. The barrel *c* is preferably of cylindrical shape, is open at its rear end, and provides a guide for a sleeve *d*, which fits the same snugly and closes the upper end of the magazine to prevent the matches being forced from the same into the bore of the barrel, but permitting the matches to be registered one at a time with the slot *c'* in the latter. The sleeve *d* houses a spiral spring *e*, which tends to draw and hold the former within the barrel *c*, one end of this spring being attached to a fixed part of the latter near the forward end of the same, as a pin *e<sup>2</sup>*, extending transversely



of the barrel, while the other end of the spring is secured to a cap *g*, which is screwed into the rear end of the sleeve *d* and is provided with a knob or other finger-piece to facilitate said sleeve being withdrawn from the barrel *c* against the tension of the spring *e*. Projecting peripherally from the sleeve *d* and working in the slot *c'* in the barrel *c* is an elongated rib *d'*, constituting a pusher, which when the sleeve *d* is in its forward position fills the portion of the slot *c'* in the barrel *c* in communication with the interior of the magazine and the forward end of which is designed to directly engage the butt-end of the matches fed into said slot *c'* when the sleeve *d* is retracted to eject the match so positioned upon the forward movement of said sleeve under the influence of the spring *e*. To the rear of the rib *d'* a lug *d''* projects from the sleeve *d* into the slot *c'* and coacts with a suitable catch working in said slot, which serves to retain the sleeve *d* in retracted position against the tension of the spring *e*, as will be hereinafter described. In the present exemplification of my invention this catch comprises a shouldered disk *h*, fixed to a spindle *i*, journaled in ears depending from the barrel *c* and provided with a radially-extending arm *j*, projecting into proximity to the movable part of a time-operated device, as the key of the alarm-arbor of a striking-clock, which is preferably supported upon the bracket *a*. To set the device for ejecting a match, the sleeve *d* is retracted against the tension of its spring *e* until the lug *d''* is caught behind the shoulder of the disk *h*, at which time the pusher is withdrawn to the rear of the portion of the slot *c'* above the magazine *b*, so that a single match will be forced from the latter into said slot directly in advance of said pusher. When the member of the time-operated device coacting with arm *j* is actuated, it will trip the catch *h* and therethrough release the sleeve *d*, which will be immediately drawn forward by its spring *e*, and in its forward movement the pusher *d'*, engaging the match in register therewith, will project the same into proximity to the material to be ignited thereby.

Directly in the path of movement of the match and to one side of the magazine *b* friction-surfaces are arranged, against which the head of the match is rubbed in its travel to effect the lighting of the same. These surfaces are preferably formed by a rigid and a yielding wall, the rigid wall *m* being preferably formed integral with the barrel *c* and the yielding wall *n* being carried by the front end of a spring-blade *o*, which is adjustably connected intermediate of its length with the barrel *c* by a bolt *o'*. By adjusting this bolt the tension of the spring *o* may be varied and therethrough pressure of the wall *n* regulated.

Supported upon the bracket *a* is a reser-

voir *p* for containing a liquid fuel, such as kerosene, and from this reservoir a wick-tube *p'* leads to a point in advance of the friction-surfaces *n m* and in alinement with or directly below the path of movement of the match. In this tube *p'* a suitable feeding medium, as a wick *p''*, is arranged, which is projected from the end of the tube into the path of movement of the match.

Supported from the wick-tube *p'* is a stop *r*, which is arranged in the path of movement of the match a slight distance in advance of the exposed end of the wick.

The match which is pushed from the magazine by the ejector, as described, and lighted by the rubbing of its head between the friction-walls *n m* is arrested by the stop *r*, so that the flame from the match will be held in juxtaposition to the end of the wick *p''*, and the ignition of the same will thus be assured. As the end of the wick *p''* is arranged in close proximity to the inflammable material in the fire-pot of the stove, the ignition of said material will thus be obtained. As the match burns away the same will crumble, and the stop *r* will then be without effect in preventing the complete discharge of the match by the ejecting mechanism. The reservoir *p* may, if desired, be formed with a receptacle *s* for containing a supply of matches, which receptacle may be rigidly attached to the bracket *a* and may be provided with a hinged door *s'* to give access to the interior thereof.

As before premised, to set the apparatus it is only necessary to withdraw the sleeve *d* from the barrel *c* against the tension of the spring *e* until the projection *d''* thereon is caught behind the shouldered disk *h*, the latter being held stationary by the engagement of the arm *j* with the actuating member of the clock. Upon the movement of this member at the predetermined hour the catch *h* is tripped, releasing the sleeve *d*, which ejects and ignites the uppermost match in the magazine, as before premised.

The construction and operation of my invention will be readily understood upon reference to the foregoing description and accompanying drawings, and it will be appreciated that the parts and combinations recited may be varied within a wide range without departing from the spirit and scope thereof.

What I claim as new, and desire to be secured by Letters Patent, is—

1. In a fire-lighter, a barrel having a slot extending longitudinally thereof, a magazine located to one side of said barrel and in open communication at its upper end with said slot, a sleeve fitted to the bore of said barrel, a rib arranged peripherally thereof for closing the portion of the slot in said barrel in open communication with the magazine, and constituting a pusher for ejecting the matches, a fric-



tion-surface arranged to one side of the magazine in the path of movement of the matches, a spring for moving the sleeve forwardly, and means for retaining the sleeve in its retracted position, substantially as described.

2. In a fire-lighter, a barrel having a slot extending longitudinally thereof, a magazine located to one side of said barrel and in open communication at its upper end with said slot, a sleeve fitted to the bore of said barrel, a rib arranged peripherally thereof for closing the portion of the slot in said barrel in open communication with the magazine, and constituting a pusher for ejecting the matches, a friction-surface arranged to one side of the magazine in the path of movement of the matches, a spring housed in said sleeve for tending to draw the same forwardly in the barrel, a lug projecting peripherally from the sleeve working in said slot in the barrel, a shouldered disk coacting with said slot to retain the sleeve in its retracted position against the tension of said spring, and mechanism associated with said disk for controlling the same, substantially as described.

3. In a fire-lighter and in combination, a barrel having a slot extending longitudinally thereof, a magazine located to one side of the barrel and in communication with said slot, means for feeding matches from the magazine into the slot, a sleeve fitted to the bore of the barrel, a spring housed within the sleeve connected at one end within the barrel and at its opposite end to the sleeve, a pusher carried by the sleeve operating in the slot, a frictional surface in the line of movement of the ejected match, and releasable means for retaining the sleeve in retracted position against the tension of the spring, substantially as described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Lincolnville, in the county of Marion and State of Kansas, this 30th day of May, 1903.

FRANK J. POSPISIL.

Witnesses:

S. SILL,

N. A. POPE.