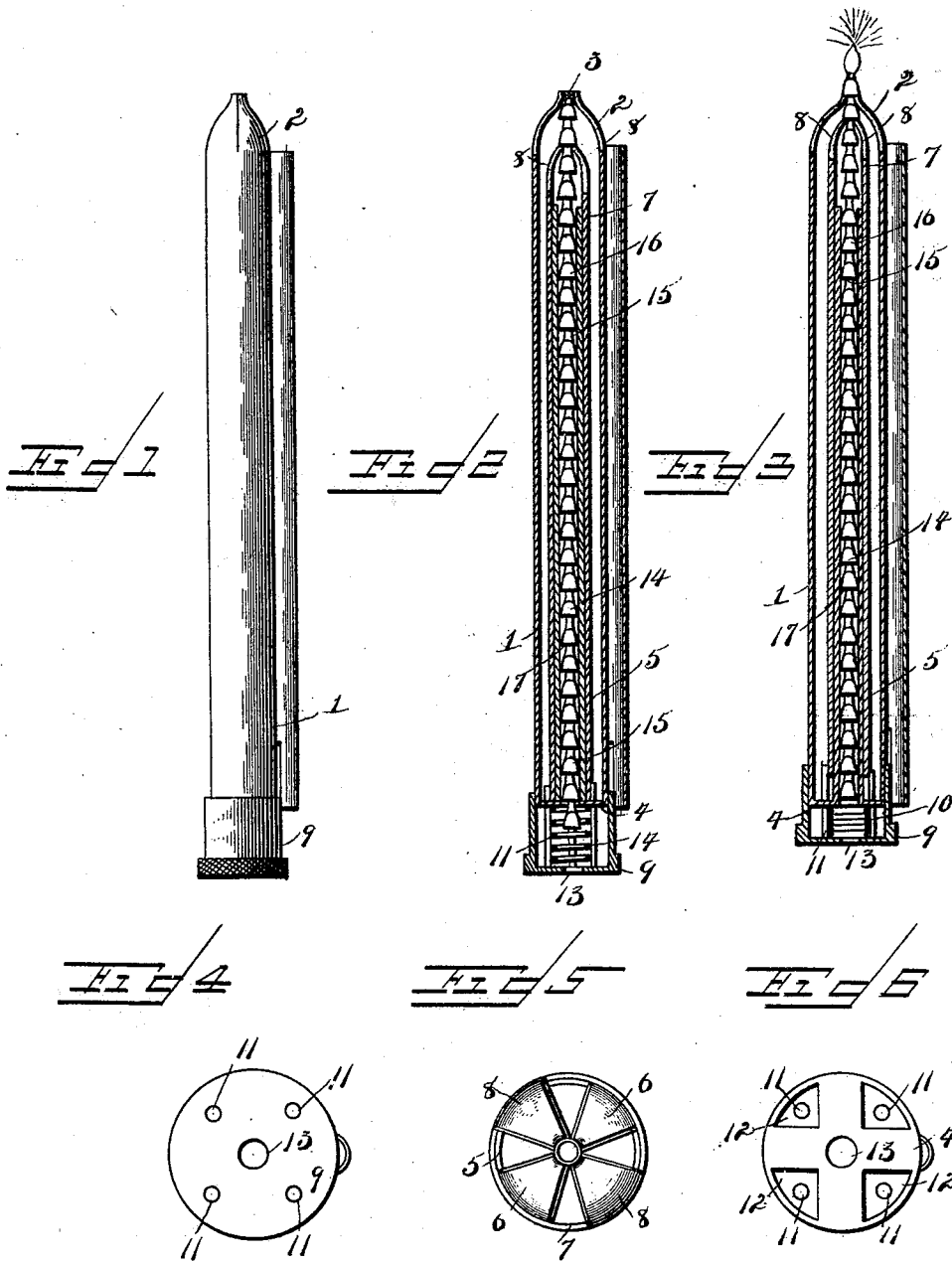


(No Model.)

F. GOFF & T. H. JOINER.  
MAGAZINE LIGHTER.

No. 521,466.

Patented June 19, 1894.



Witnesses

*W. O. Schneider*  
*[Signature]*

By *their* Attorneys.

*C. Snow & Co.*

Inventors

*Frank Goff*  
*Thomas H. Joiner.*

# UNITED STATES PATENT OFFICE.

FRANK GOFF, OF CAMDEN, AND THOMAS H. JOINER, OF BURLINGTON, NEW JERSEY.

## MAGAZINE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 521,466, dated June 19, 1894.

Application filed June 15, 1893: Serial No. 477,739. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK GOFF, of Camden, in the county of Camden, and THOMAS H. JOINER, of Burlington, in the county of Burlington, State of New Jersey, citizens of the United States, have invented a new and useful Magazine-Lighter, of which the following is a specification.

Our invention relates to a pocket lighting instrument, and it contemplates the provision of a simple, inexpensive and efficient device capable of being used quickly and frequently and so constructed as to be readily replenished when the fuel or igniting agency is exhausted.

In carrying out our invention we employ a casing in the shape of a fountain pen or pencil, a taper provided with a series of caps or heads which are adapted to be ignited by friction, and means for feeding and simultaneously igniting the heads as they are successively presented at the tip of the casing, such feeding and igniting mechanisms being controlled and operated by a pressure cap which is fitted upon the opposite end of the casing.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a side view of a lighting implement embodying our invention. Fig. 2 is a longitudinal central section of the same. Fig. 3 is a similar view showing the positions of the parts when the sliding cap has been depressed to expose one of the heads of the taper. Fig. 4 is a detail view in perspective of the jaw-carrying ends of the guiding and feeding tubes. Fig. 5 is an end view of the lighter. Fig. 6 is a similar view with the operating cap removed.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 represents a tubular casing, the tip or outlet end of which is split to form a continuous series of fingers 2, which at their free ends and upon their inner surfaces are roughened or provided with a suitable friction material, as shown at 3, for the purpose of igniting by friction the heads of the taper as they pass between the same. Arranged concentrically

in the said casing, and fixed at its lower end to the lower end of the latter by means of a plate or spider 4, is a guide-tube 5, provided at its upper end, which terminates short of the upper end of the casing, with oppositely-disposed spring-jaws 6, which are preferably formed by splitting and cutting away portions of the tube, as shown clearly in Fig. 4. The feed-tube 7 is slightly larger in diameter than the guide-tube and fits slidably upon the exterior of the latter, the upper end of this feed-tube being provided with oppositely-disposed jaws 8, which are similar in construction to the jaws 6 of the guide-tube and are arranged respectively opposite the intervals between said jaws 6 of the guide-tube. In the drawings we have shown the guide-tube provided with two diametrically-opposite jaws and the feed-tube provided with a corresponding number of similarly-disposed jaws, but it will be understood that in practice we will vary the number as may be found necessary to secure an accurate and satisfactory co-operation of the parts.

Fitting slidably upon the lower end of the casing is a reciprocating cap 9, between the base or disk portion of which and the plate or spider which connects the lower ends of the casing and guide-tube, is arranged an actuating spring 10, adapted to normally hold the cap extended, as shown in Figs. 1 and 2. The slidable feed-tube is connected to this cap by means of the extensions or pins 11, which project downwardly through perforations 12 in said connecting plate or spider and may be headed in perforations in the cap, or secured thereto in any preferred manner, the former being shown in the accompanying drawings. The cap is provided with a central aperture 13, which registers with the guide-tube and is adapted to be used as a means of inserting the tapers into said tube.

14 represents a taper, such as we propose to employ in connection with our lighting implement, the same consisting of a body-portion 15, provided at intervals with enlargements or heads 16, thus forming at the base of each head a shoulder 17, which is adapted to be engaged by the above-described jaws of the feed-tube and guide-tube in operation.

The casing is provided with a lateral tubu-

lar extension parallel with the casing and forming a magazine for the reception of an additional taper to be inserted into the operative portion of the implement after the taper  
5 then in use is exhausted.

This being the construction of our improved lighter, the operation thereof, briefly stated, is as follows: A taper of substantially the construction described being arranged in  
10 the guide-tube, the operating cap is depressed against the tension of the actuating spring, thus extending the feed-tube and carrying the taper forward the distance of the throw of the cap, which obviously corresponds with  
15 the interval between two adjacent heads or enlargements of the taper. Thus, one of the heads or enlargements is forced between the friction fingers in contact with their inner rough-  
20 ened surfaces, thereby producing ignition. After the ignited head or enlargement has passed beyond the extremities of the friction fingers the latter contract to embrace the body portion of the taper, or the connecting  
25 portion between two adjacent heads or enlargements to exclude the flame and prevent the communication thereof to the inclosed portion of the taper. When the pressure upon the operating cap is relieved, the actu-  
30 ating spring returns the cap and feed-tube to their normal positions, thus causing the jaws of the feed-tube to slip idly over the succeeding head or enlargement of the taper, the latter being meanwhile held from backward movement by the action of the jaws of the  
35 guide-tube.

Various changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the principle or sacrificing any of the advantages of this invention. 40

Having described our invention, what we claim is—

1. In a lighting implement, the combination of a casing provided with interiorly rough-  
45 ened or serrated friction or igniting fingers, concentric guide and feed tubes provided at their corresponding ends with co-operating jaws to engage successively the frictionally ignitable heads or enlargements of a continuous taper, the guide tube being fixed and a  
50 spring-actuated operating cap connected to said feed-tube and slidably fitted upon the lower end of the casing, substantially as specified.

2. In a lighting implement, the combination  
55 of a casing provided with friction or igniting fingers, a guide-tube arranged concentrically in the casing and fixed thereto, a slidable jaw-bearing feed-tube mounted exteriorly upon said guide-tube, and a slidable spring-actu-  
60 ated operating cap fitted upon the lower end of the casing, connected to said feed-tube and provided with an aperture registering with the guide-tube to enable tapers to be inserted without removing the cap, substantially as  
65 specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FRANK GOFF.  
THOS. H. JOINER.

Witnesses:

J. H. SIGGERS,  
H. F. RILEY.