130,836

PATENT SPECIFICATION

Application Date, Sept. 25, 1918. No. 15,550/18.
Complete Left, Mar. 22, 1919.
Complete Accepted, Aug. 14, 1919.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Lighters for Lighting Pipes, Cigarettes and Cigars, and for Lighting Purposes Generally.

We, KINGS NORTON METAL COMPANY LIMITED, of No. 16, Great George Street, London, S.W., Manufacturers, and HENRY WINDER BROWNSDON, Doctor of Philosophy and Chemist to the aforesaid Company, of No. 109, Oxford Road, Moseley, Birmingham, in the County of Warwick, do hereby declare the nature of this invention to be as follows:—

The lighters to which the said invention relates are of three kinds, namely one in which a pyrophoric alloy or "flint" is scratched by a piece of hard steel wire having near its free or striking end a small conoidal wad of asbestos or other absorbent of petrol or other inflammable liquid which becomes ignited by the sparks produced by the friction of the steel on the "flint," the striking end of the wire with the small wad of asbestos or the like thereon being stored, when the striker is not in use, in a case containing an absorbent of petrol or the like and thereby the said wad of asbestos becomes charged with the petrol.

The second kind of lighter has a roughened or serrated wheel or disc the periphery of which is rotated against a "flint" or the like the sparks produced being projected on to a wick protruding from a case containing cotton wool or the like saturated with petrol or other inflammable liquid.

The third kind of lighter comprises a tube containing tinder wick which is capable of glowing when ignited by a spark or sparks projected thereon by the rotation of a serrated steel wheel against a flint.

The disadvantages attending the first described kind of lighter is that the flame obtained is of very short duration as the small wad of absorbent has an extremely small capacity for petrol or the like. With the second kind of lighter a light of fairly long duration can be obtained but its use is attended with inconveniences which we do not think it necessary to enumerate.

The said invention consists of the improvements hereinafter described in the said lighters the said improvements having for their principal objects to enable a light of fairly long duration to be obtained, to obtain a form of instrument or device very suitable for carrying in the vest pocket and in which the action of striking a light is greatly facilitated and further to prolong the life of the "flint."

According to the said invention we apply or fix the steel striker to a tubular body or case which may be closed at one end and have a hole in its other end large enough to permit the end of the wick to project therethrough. The said

[*Price 6d.*]

steel striker may be fixed internally or externally to the case with the striking end in contact with or in close proximity to the protruding wick. The said case is filled with an absorbent, asbestos or the like.

The case is fitted with a cap which constitutes a protector for the striking end of the steel wire and protruding end of the wick and also as a carrier for the "flint" which is preferably so attached to the cap or the like that three surfaces of the same are exposed for use, the life of the "flint" being not only thereby greatly increased but the striking of the wire thereon being also facilitated inasmuch as the "flint" is readily located and the striking may be performed with certainty in the dark.

If thought necessary or desirable the cap or protector may be of large size so as to accommodate a re-charging material such for example as a tube of blotting paper, felt or the like the said cap or protector constituting in this case a reservoir or recharger. The blotting paper, felt or the like tube is soaked with petrol or the like and the end of the said tube near the mouth of the cap, when the cap is applied to the case containing the striking wire and absorbent, is made to contact with the protruding end of the absorbent material in the case under the action of a coiled spring in the closed end of the cap, recharger or reservoir.

In one convenient form of the lighter the complete article resembles an ordinary small arm cartridge, the tubular case having attached thereto the striking wire resembling the bullet, and the cap, recharger or reservoir resembling the brass cartridge case. The "flint" is or may be fixed on one side of the cartridge-case-like cap, or it may cross the base of the cap. When the bullet-like case is removed from the cartridge case-like cap or recharger the wire may be struck down the "flint" to produce a light and the pointed or unlighted end of the said bullet-like case can then be inserted in the open end of the cartridge-case-like cap and the article will stand or may be carried like an ordinary candle and will remain alight until the whole of the petrol in the absorbent material in the case has been burned. When the cartridge case-like cap or recharger is applied to the striker end of the bullet-like case the petrol saturated absorbent is pressed back against the pressure of the spring hereinbefore referred to and the absorbent in the case of the instrument or device is quickly recharged.

If thought necessary or desirable the open end of the case carrying the wire striker may be fitted with a tube or nipple made of a material which is a good non-conductor for heat so that the heat of the flame will not be transmitted or conducted to the metal body of the case; and further, the mouth or open end of the cartridge case-like cap or recharger may be fitted with a ferrule or liner made of a material which is a good non-conductor for heat so as to prevent the case becoming too highly heated to be comfortably held in the hand.

Dated this 24th day of September, 1918.

GEORGE SHAW & Co.,
35, Temple Row, Birmingham,
Chartered Patent Agents.

COMPLETE SPECIFICATION.

Improvements in or relating to Lighters for Lighting Pipes, Cigarettes and Cigars, and for Lighting Purposes Generally.

We, KINGS NORTON METAL COMPANY LIMITED, of No. 16, Great George Street, London, S.W., Manufacturers, and HENRY WINDER BROWNSDON, of No. 109, Oxford Road, Moseley, Birmingham, in the County of Warwick,

Doctor of Philosophy and Chemist to the aforesaid Company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The lighters to which the said invention relates are of the kind, in which a pyrophoric alloy or "flint" is scratched by a piece of hard steel wire having near its free or striking end a small conoidal wad of asbestos or other absorbent of petrol or other inflammable liquid which becomes ignited by the sparks produced by the friction of the steel on the "flint," the striking end of the wire with the small wad of asbestos or the like thereon being stored, when the striker is not in use, in a case containing an absorbent of petrol or the like and thereby the said wad of asbestos becomes charged with the petrol.

The said invention consists of the improvements herinafter described in the said lighters, the said improvements having for their principal objects to enable a flame of fairly long duration to be obtained, to obtain a form of instrument or device very suitable for carrying in the vest pocket and in which the action of striking a light is greatly facilitated and further to prolong the life of the "flint."

According to the said invention we apply or fix the steel striker to a tubular body or case which is closed at one end and has a hole in its other end large enough to permit the end of the wick to project therethrough. The said steel striker may be fixed internally or externally to the case with the striking end in contact with or in close proximity to the protruding wick. The said case is nearly filled with an absorbent of petrol such as absorbent cotton wool and the mouth of the said case is filled with asbestos or other non-combustible petrol absorbent a small portion of which protrudes from the hole in the mouth of the case and acts as the wick.

The case is provided with a cap which constitutes a protector for the striking end of the steel wire and protruding end of the wick and also serves as a reservoir or re-charger which accommodates a re-charging material such for example as a tube of blotting paper, absorbent cotton wool, felt or the like which is soaked with petrol or the like. The end of the re-charging material in the cap when applied to the case is made to contact with the protruding end of the absorbent material in the case preferably under the action of a coiled spring in the closed end of the cap, re-charger or reservoir.

The "flint" is preferably so attached to the cap or the like that three surfaces of the same are exposed for use, the life of the flint being thereby not only greatly increased but the striking of the wire thereon being also facilitated inasmuch as the sides of the "flint" are readily located and the striking may be performed with certainty in the dark.

We will further describe the said invention in connection with the accompanying drawing Figures 1 to 12 both inclusive of which illustrate pocket forms of the improved lighter and Figures 13 and 14 illustrate a form suitable for use on the smoke room table or the like.

We will first describe the arrangement Figures 1 to 5 both inclusive which arrangement resembles an ordinary small arm cartridge.

Figures 1 and 2 are elevations at right angles to one another of the lighter and cap closed for carrying in the pocket. Figure 3 is a longitudinal section of the same and Figure 4 is a cross section taken in the plane indicated by the dotted line 4—4 Figure 3.

Figure 5 represents in elevation the bullet or lighter proper detached from the cap, re-charger or reservoir for use.

The same letters of reference indicate the same parts in the several figures of the drawing.

a is the bullet-like case of the lighter proper having attached thereto the steel wire or striker *b*. The case *a* is packed to near its mouth preferably with absorbent cotton wool *c* or the like the nearly closed mouth being filled with asbestos *d* which protrudes slightly therefrom as is best seen in Figure 5.

e is the cap, re-charger or reservoir which may be made of the form of a brass cartridge case. The "flint" *f* is fixed on one side of the cap as is best seen in Figures 1 and 2, but the said "flint" may be arranged to cross the base of the cartridge case-like cap *e*.

When the bullet-like case *a* is removed from the cartridge case-like cap *e* the wire or striker *b* is moved sharply down the "flint" *f* to produce a light or flame and the pointed end of the said bullet-like case *a* can then be inserted in the open end of the cartridge-case-like cap *e* and the article will stand or may be carried like an ordinary candle the flame continuing until the whole of the petrol in the absorbent cotton wool *c* or the like and asbestos *d* has been burned.

When the cap or re-charger *e* is applied to the striker end of the case *a* the petrol saturated cotton wool or other absorbent material *g*, *h* is pressed back preferably against the action of a light coiled spring *i* the contact of the cotton wool *g* ensuring the almost immediate re-charging of the absorbent material *c*, *d* in the case *a*.

The arrangements Figures 6 to 12 both inclusive differ in shape or form only from the arrangement Figures 1 to 5 both inclusive, Figures 6 and 7 illustrating in elevation (partly in section) and plan respectively a cylindrical form of the device, and Figures 8, 9 and 10 representing in edge view, side elevation (partly in section) and plan respectively a flat form of the device very suitable for carrying in the waistcoat pocket. Figures 11 and 12 represent in elevation and plan respectively the lighter proper *a* detached from the cap *e*.

In the arrangement of the said invention illustrated in Figures 13 and 14 the re-charger is shaped to resemble a match box which is fixed to the middle of a smoker's ash tray. The arrangement differs in no essential respect from that hereinbefore described with reference to Figures 1 to 5 both inclusive and corresponding parts are marked with the same letters of reference. With the modified construction of the device illustrated in Figures 13 and 14 the lower part of the re-charger *e* may be made as a reservoir e^2 for liquid petrol or the like which is fed to the absorbent cotton wool preferably by a wick *k*. The petrol is supplied to the cap or re-charger *e*, e^2 through a filling hole, not shown, in the bottom or one of the sides which hole is provided with a screw stopper.

If thought necessary or desirable the open end of the case or lighter proper of any of the arrangements hereinbefore described and illustrated may be fitted with a tube or nipple made of a material which is a good non-conductor for heat so that the heat of the flame will not be transmitted or conducted to the metal body of the case *a*; and further, the mouth or open end of the cap or re-charger *e* may be fitted with a ferrule or liner made of a material which is a good non-conductor for heat so as to prevent the same becoming too highly heated to be comfortably held in the hand.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In lighters of the kind hereinbefore referred to,—the employment in combination of a case or lighter proper carrying the steel wire striker the said case being packed with absorbent cotton wool or the like and having a protruding wick of asbestos or the like and a cap, re-charger or reservoir for the said case or lighter proper the said cap, re-charger or reservoir being filled or nearly filled with an absorbent material which can be soaked with petrol the absorbent material contacting with the wick of the case or lighter proper when the said cap is applied thereto.

2. In a lighter of the kind claimed in Claim 1, the provision in the re-charger of a liquid petrol vessel or container preferably with a wick for feeding the petrol to the absorbent material in the upper compartment of the cap, re-charger or reservoir.

3. The construction and arrangement for combination of parts hereinbefore

described with reference to Figures 1 to 12 both inclusive of the accompanying drawing constituting an improved lighter for lighting pipes, cigarettes and cigars and for lighting purposes generally.

4. The construction and arrangement or combination of parts hereinbefore described with reference to Figures 13 and 14 of the accompanying drawing constituting an improved lighter for lighting cigars, cigarettes and pipes and for lighting purposes generally.

Dated this 21st day of March, 1919.

GEORGE SHAW & Co.,
35, Temple Row, Birmingham,
Chartered Patent Agents.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1919.

Fig. 1.

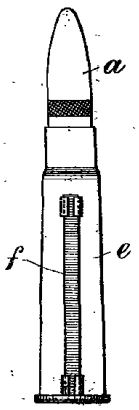

Fig. 2.

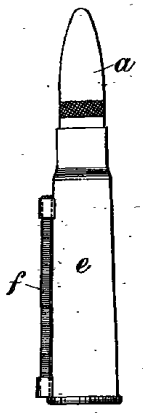

Fig. 3.

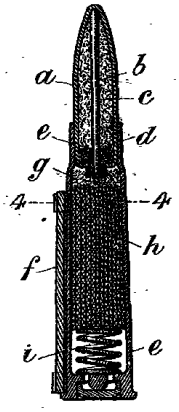

Fig. 5.

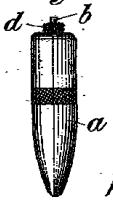

Fig. 6.

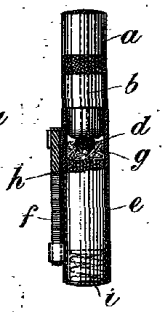

Fig. 8.

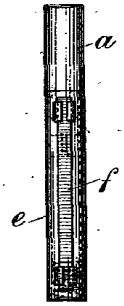

Fig. 9.

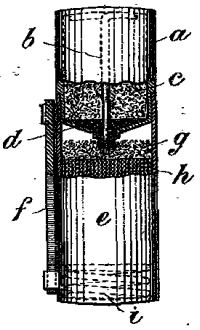

Fig. 11.

Fig. 12.

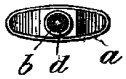

Fig. 4.

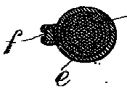

Fig. 7.

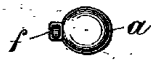

Fig. 10.

Fig. 13.

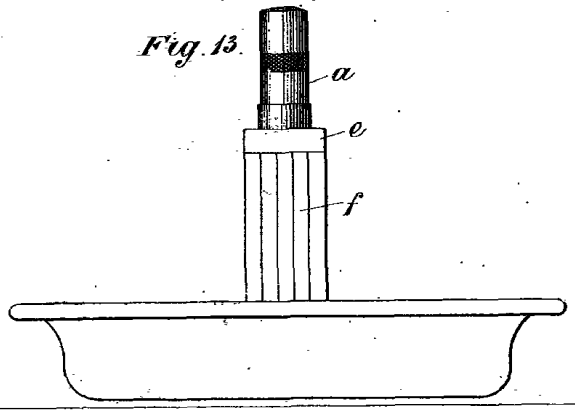

Fig. 14.

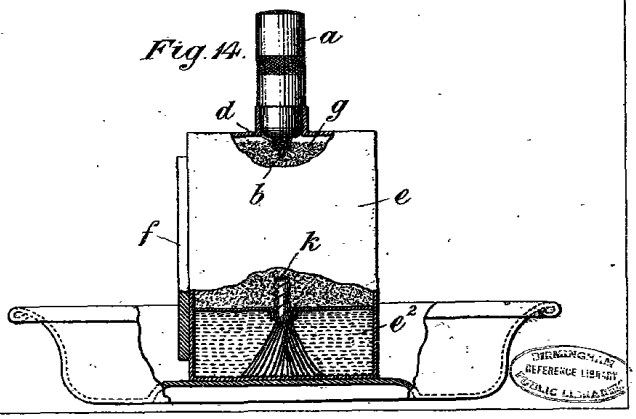

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Fig. 1.

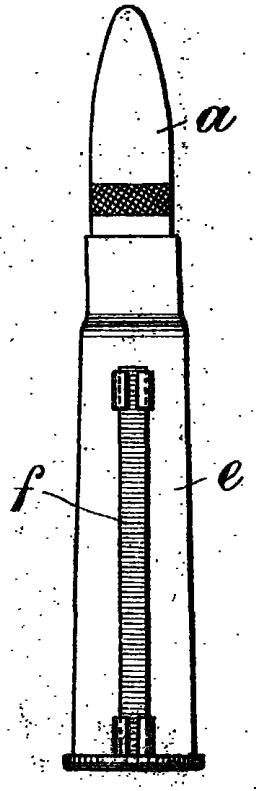


Fig. 2.

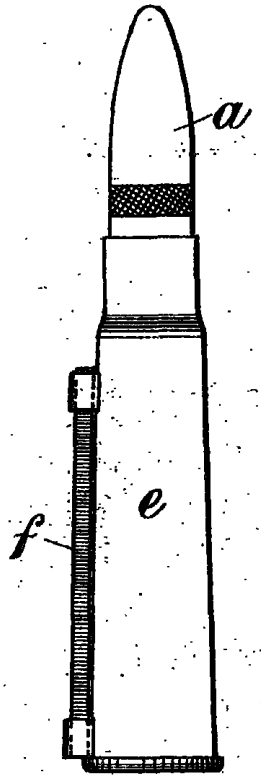
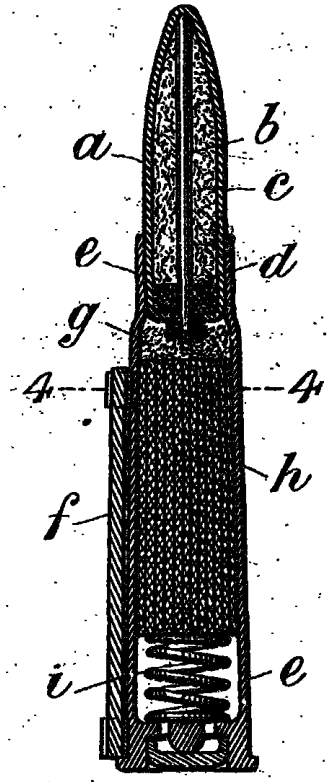


Fig. 3.



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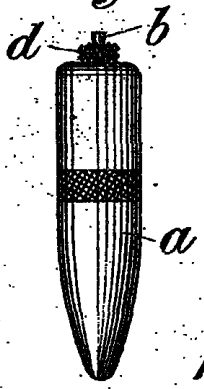


Fig. 4.

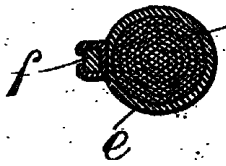
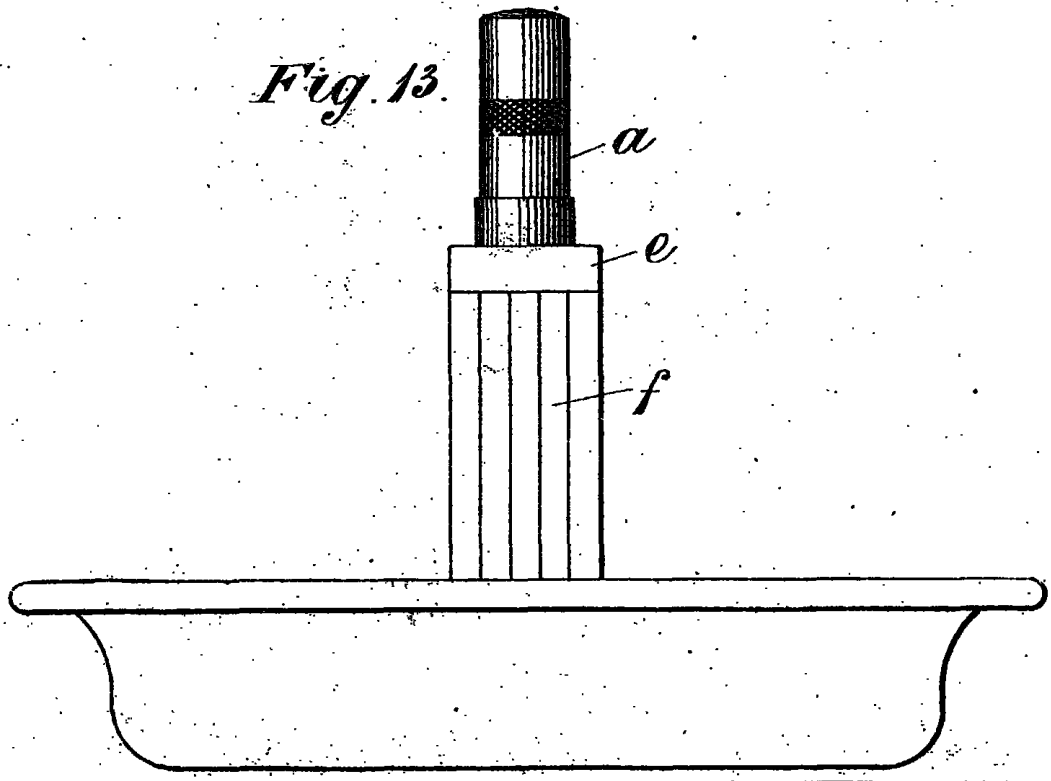


Fig. 13.



ig.6.

g.7.

Fig.8.

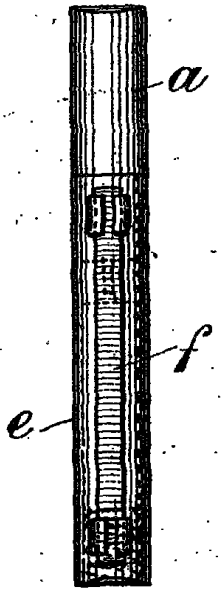


Fig.9.

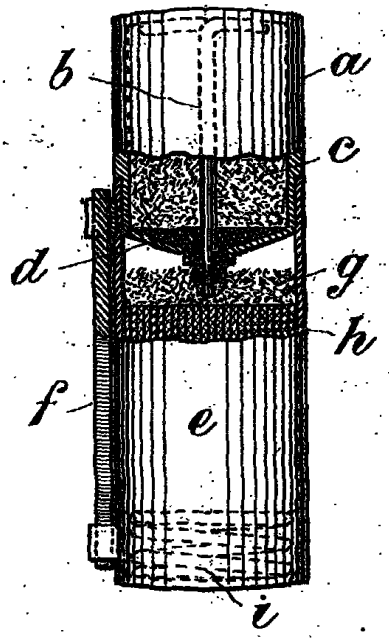


Fig.10.

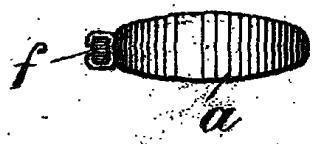


Fig.11

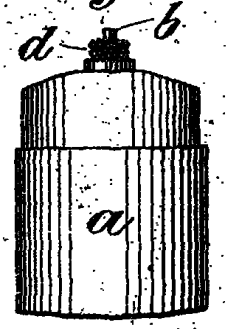


Fig.12.

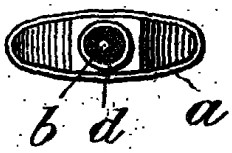
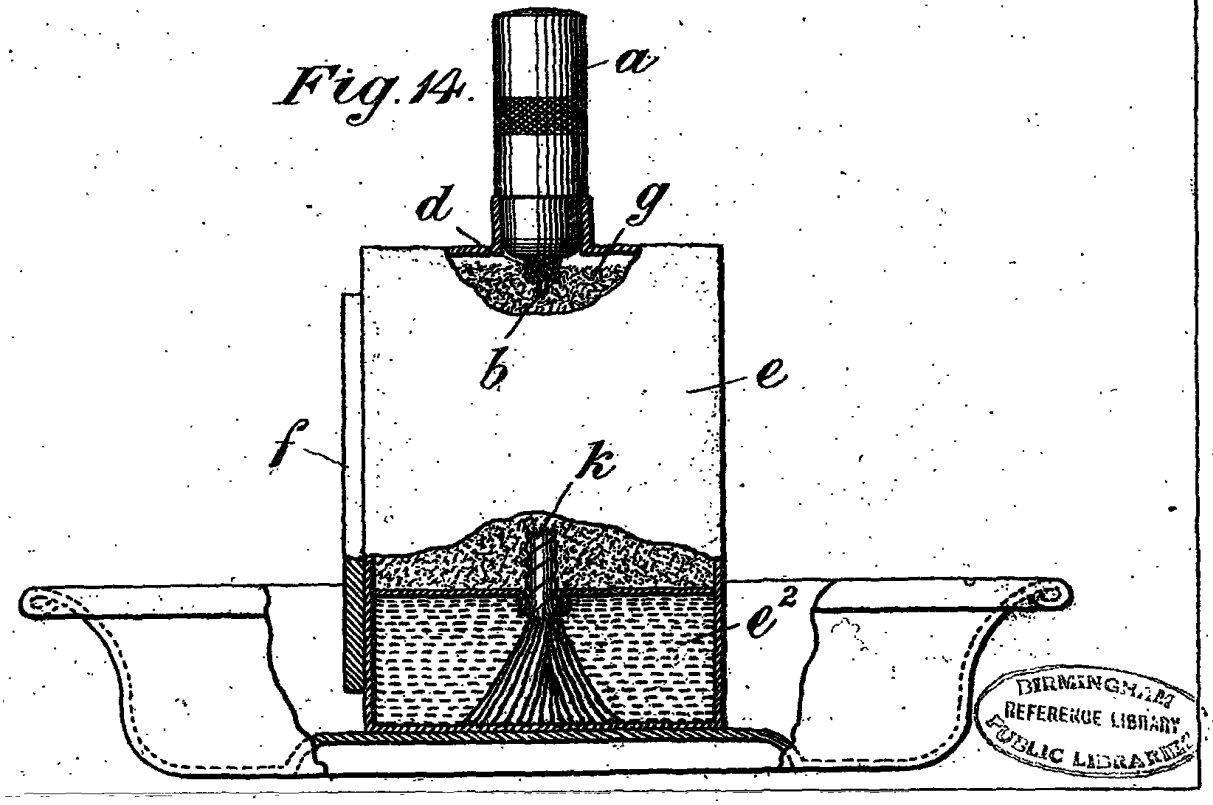


Fig.14.



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