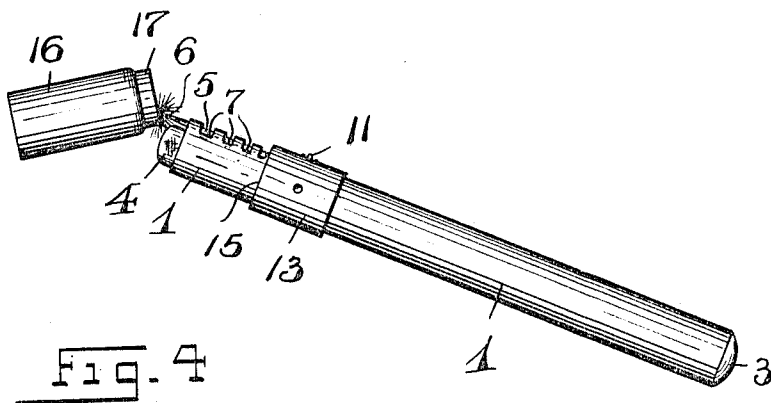
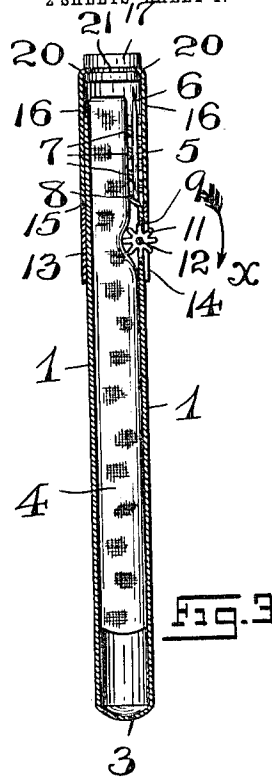
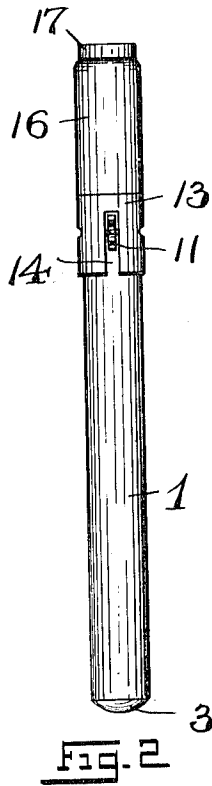
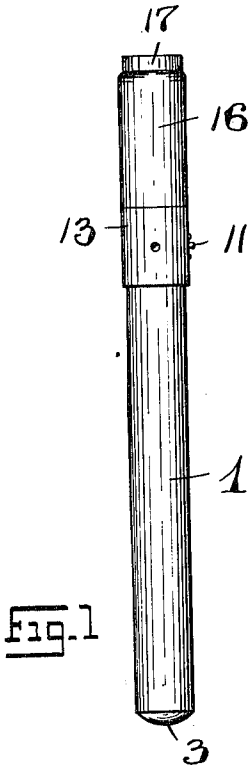


F. A. FELDKAMP.
LIGHTING APPLIANCE.
APPLICATION FILED DEC. 8, 1908.

Patented Jan. 25, 1910.

947,438.

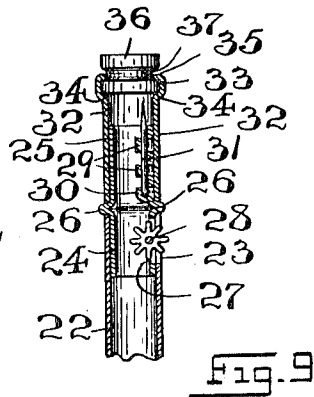
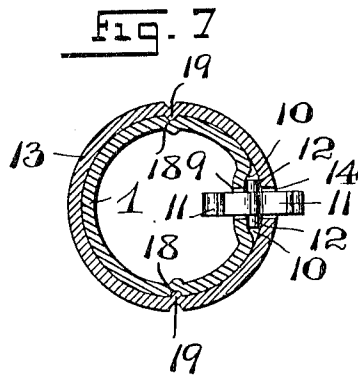
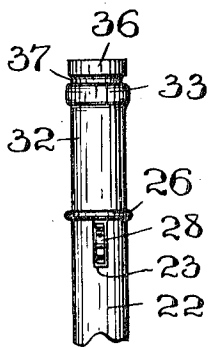
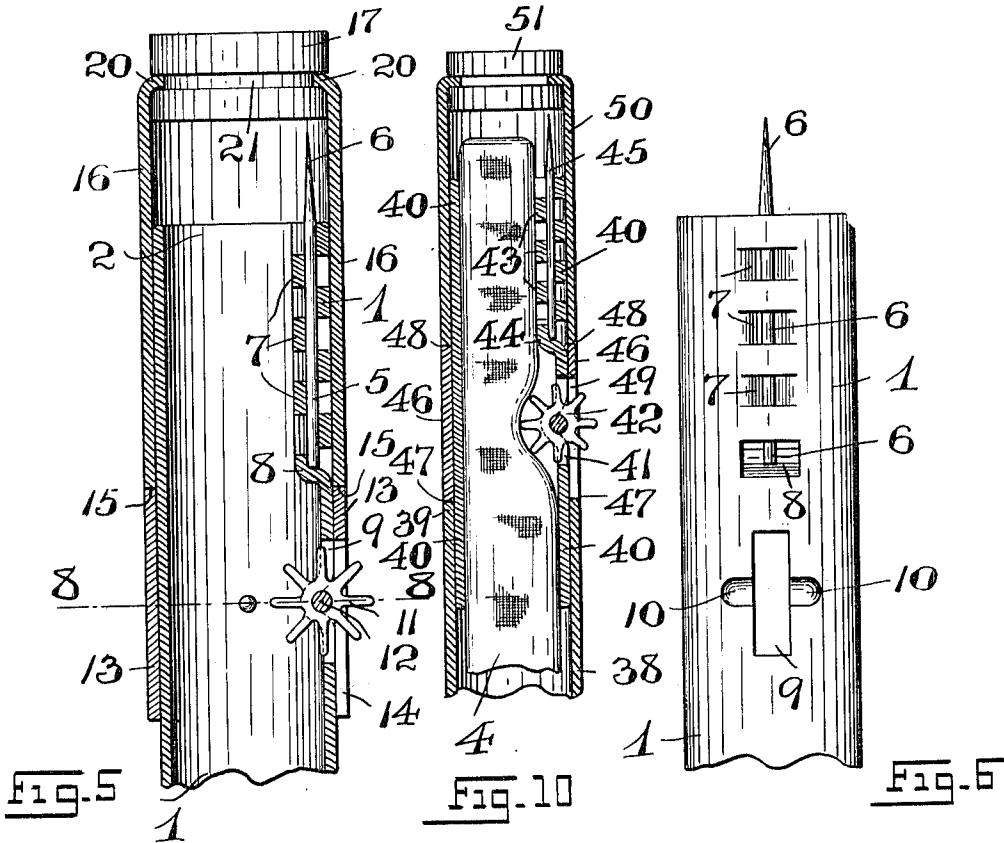
2 SHEETS-SHEET 1.



WITNESSES:
Fredk. H. W. Kraentzel
Anna H. Alter

INVENTOR:
Frederick A. Feldkamp
BY *Fraentzel and Richards*
ATTORNEYS.

947,438.



WITNESSES:

Frederick H. M. Graentzel
Anna H. Alter

INVENTOR:

Frederick A. Feldkamp,
BY *Graentzel and Richards,*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK A. FELDKAMP, OF NEWARK, NEW JERSEY.

LIGHTING APPLIANCE.

947,438.

Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed December 8, 1908. Serial No. 466,445.

To all whom it may concern:

Be it known that I, FREDERICK A. FELDKAMP, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Lighting Appliances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention has reference, generally, to improvements in cigar-lighting appliances; and, the invention relates, more particularly, to a novel form of lighting appliance which can be readily carried in the pocket and which is of a simple, cheap, safe and reliable construction; all as will hereinafter more fully appear.

The present invention therefore has for its principal objects to provide a simple, safe and reliable lighting appliance, which is especially adapted to be carried about in the pocket, and can be readily and quickly manipulated to ignite a suitable wick for the purposes of lighting cigars, cigarettes, gas-jets, and lamps or burners which use as fuel, gasoline or other similar fluid; and, furthermore, to provide a novel device and striking means for producing a spark sufficient to ignite the end-portion of a wick, and which will not be affected by a current of air, but is rather benefited thereby.

A further object of this invention is to provide a simple cigar-lighting device provided with a spark-producing alloy and a sharp scratch-point or edge of another metal which when drawn or scratched over the surface of the alloy will tear off minute particles of the alloy, which owing to the heat produced, will immediately oxidize in the air, and will produce a multitude of strong sparks, in quick succession, which are communicated to the preferably charred end of a wick, so as to bring the same into a state of incandescence, to be used for various lighting purposes; or, for the purposes of lighting a gaseous fluid at a jet, burner, or other point, directly from the sparks produced by the scratching operation.

A further object of this invention is to provide a spark-producing lighting appli-

ance in which the wick and other parts may be fully inclosed in a casing, so as to be protected against moisture; and, to provide an inclosure or casing in which there are no parts connected by means of solder, so that there can be no separation of the parts, due to excessive heat from the ignited wick.

This invention has for its further object to provide a cigar-lighting device comprising a wick-receiving and containing body or element with which is removably and detachably connected an end-member or cap having suitably secured to and mounted upon the outside thereof a spark-producing alloy, all arranged so that the end-member or cap has to be removed from the wick-containing body, and held reversed in one hand while, with the other hand, a portion of the said main body or a scratching member connected therewith is scratched, in the same manner of striking an ordinary match, upon and over any exposed part of the said spark-producing alloy.

A further purpose of this separably or detachably connected relation of these parts is that the scratching portion or member of the main body can be rapidly drawn over different parts of the spark-producing alloy so that the same parts of the alloy and the scratching portion are not brought in constant frictional engagement, to be thereby rapidly worn down to such an extent that but a very imperfect spark will be produced.

Other objects of this invention not at this time more particularly enumerated will be clearly understood from the following detailed description of my present invention.

The invention is clearly illustrated in the accompanying drawings, in which:

Figures 1 and 2 are two side elevations of a lighting appliance embodying the principles of my present invention; and Fig. 3 is a transverse vertical section of the device, the scratching alloy, the scratch-pin, the wick, and the means for producing movements of the wick being shown in elevation. Fig. 4 is a side view of the device illustrating the scratching or spark-producing operation. Fig. 5 is a transverse vertical section of the upper end-portion of the lighting appliance, said section being made on an enlarged scale, showing an end-shell or cap which is provided in its end with a scratching-alloy removably disposed upon the main tubular shell or body of the device, and showing more particularly one manner of securing

the scratch-pin to said main body; Fig. 6 is a front elevation of the upper portion of said main body and said scratch-pin; and Fig. 7 is a horizontal section taken on line 8—8 in said Fig. 5. Fig. 8 is a side elevation and Fig. 9 a vertical section of the upper end-portion of a cigar-lighting appliance of a modified construction, but still embodying the principles of the present invention; and Fig. 10 is a vertical section of the upper portion of another modified form of lighting appliance made according to the present invention, said section being made on an enlarged scale.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring now to the said drawings, the reference-character 1 indicates a suitably-shaped tubular body or shell which is provided with an open end-portion 2 and a closed end 3, for the reception in said main body or shell of a suitable wick 4. At its upper end-portion, the said tubular body or shell 1 is provided with a suitably formed scratching element, preferably in the form of a pin 5, which is suitably secured upon the inner surface of the said main body or shell and has its pointed end 6 extending from the open end 2 of said main body or shell substantially in the manner shown. This pin, which is preferably made from steel, or other hard metal, may be secured in position by means of any suitable fastening or securing means, as will be clearly evident. One means of permanently fixing the scratch-pin in place consists of a multiplicity of retaining-elements or members 7 which are pressed out of the body or shell 1, and forced inwardly into the interior of the same, and also with a lower supporting member 8 which is likewise pressed out of said body or shell 1 in an inward direction, as clearly shown. The shank of the pin 6 is arranged between said retaining elements or members 7 and the interior surface portions of the main body or shell 1, the end of the pin resting upon and being supported upon said supporting member 8. After the shank of the pin has been arranged in this manner between these several parts, the said retaining members or elements 7 are forced, by means of pressure, toward the shank of the pin, whereby the latter is positively and rigidly secured in its operative or scratching position upon the inner surface-portions of the main body or shell 1. At a suitable point below said supporting member 8, the said main body or shell is made with a slot or elongated opening 9, and with adjacent depressions or pockets 10, which are suitably formed by two inwardly pressed portions of the metal body or shell 1. Rotatably arranged in said depressions or pockets are the journals 12 of a star-wheel 11, the actu-

ating finger or projections of which are brought in active engagement with the side of the wick 4. To secure the said star-wheel 11 in its operative position against displacement from the said slot or opening 9, a suitably formed sleeve 13 which is provided with a slot 14 slipped over the fingers or projections of said star-wheel 11, is forced down over the outer surface-portion of the upper end-portion of the main body or shell 1, a suitable distance below the end of the said main body or shell, so as to provide a shoulder 15 and suitable receiving portion for the reception and arrangement thereon of a tubular cap or closing member 16, said cap having suitably secured in its upper end a scratching plug 17 made of a suitable spark-producing metal alloy. One form of such spark-producing alloy may consist of cerium and iron, but it will be clearly understood that any other combination of elements may be used, so as to provide a spark-producing alloy. The said sleeve 13 may be secured upon the said main body or shell 1 in any suitable manner and by means of any suitable fastening means, as will be clearly evident. One means is shown in the accompanying drawings, and it consists in providing the said main body or shell 1 in one or more places with a depression or depressions, as 18, and the said sleeve 13 with one or more projections or teats, as 19, which are driven into holding engagement with said depressions 18 by means of a prick-punch, or other suitable means. The said scratching plug 17 is likewise secured to the said tubular cap or closing member 16, in any suitable manner, the preferred means of fastening, however, being that shown in the accompanying drawings, and this means consisting of an inwardly projecting bead-like member 20 which is securely rolled or otherwise secured in an annular groove or depression 21 of the said scratching plug 17. Having in this manner assembled these various parts, and having inserted the wick 4 in the main body or shell 1, in the manner clearly shown in Figs. 1 to 6 inclusive, it will be seen that I have provided a device which can be safely carried in the vest pocket.

When it is desired to use the device or appliance for the purpose of producing a spark or sparks, the cap or closing member 16 is withdrawn from its closing position over the open end-portion of the main body or shell 1, and by turning the star-wheel 11 in the direction of the arrow α , indicated in Fig. 3 of the drawings, the wick 4 is moved in an upward direction so as to bring its charred end-portion the required distance beyond the open end of said tubular body or shell 1, and in close proximity to the free and pointed end 7 of the scratch-pin 6, as shown in Fig. 4 of the drawings. The separated members of the appliance, 130

that is the cap 16 and the main body or shell 1 are now held, one in each hand, in the angular relation shown in said Fig. 4, and the pin-point 7 of the pin 6 is drawn with sufficient pressure directly across the end-surface of the alloy-plug 17. The result is that a strong spark or a succession of sparks are produced, in the manner indicated in Fig. 4, the fire from the sparks being communicated directly to the end of the wick 4 which becomes ignited, and will burn with sufficient intensity, so that it can be used for lighting the end of a cigar, cigarette, pipe, or the like.

15. When the lighted wick is no longer required, the star-wheel 11 is rotated in the opposite direction from that indicated by the arrow α in Fig. 3, whereby the exposed end-portion of the wick is drawn back into the interior of the tubular body or shell 1, and soon becomes extinguished when the cap or closing-member 16 is replaced over the open end-portion of the said body or shell 1.

In Figs. 8 and 9 of the drawings, I have shown a slightly modified construction of lighting-appliance, the same, however, embodying the principal features of my present invention. In this construction, the reference-character 22 indicates a main tubular body or shell which is provided in its upper open end-portion with a slot 23. A tubular member which is formed with a lower portion 24, and an upper portion 25, divided by an outer annular bead-like projection, as 26, which provides a suitable shoulder, has its lower portion 24 forced into the upper open end-portion of said main tubular body 22 until the marginal projection or shoulder 26 rests directly upon the upper marginal edge of said body 22, the parts being suitably secured together. The said lower portion 24 is also provided with an elongated opening or slot 27, located directly opposite the slot 23, in which are rotatably arranged, in the manner herein-above described, the actuating fingers or projections of a wick-moving star-wheel 28. The upper portion 25 of the tubular member is made with a multiplicity of inwardly pressed retaining members or elements 29 and a lower supporting member 30 which are employed for securing a scratch-pin 31 in its operative position within said tubular member, in the manner previously described. A suitable cap or closing-member 32 is removably arranged over the upper portion 25 of said tubular member, in the manner shown in said Figs. 8 and 9, the said cap or member 32 being made with an enlarged receiving portion 33 formed with an annular seat 34 and an inwardly extending annular retaining flange 35. Seated upon the seat 34 is a scratch-plug 36, made of a suitable spark-producing alloy of metal, the said plug 36 being made with an annular groove or de-

pression 37 into which the retaining flange 35 is rolled for the purposes of positively securing the scratching plug in its fixed position in the upper portion of the said cap or closing member.

In Fig. 10 of the drawings, I have shown another slightly modified construction of a lighting appliance made according to the principles of this invention. In this construction the main tubular body or shell 38 in which the wick is arranged has its upper open end-portion 39 removably arranged upon the lower open end-portion of a tubular member 40, said member 40 being made with an elongated opening or slot 41 in which are movably disposed the fingers or projections of a wick-moving star-wheel 42. The upper end-portion of said tubular member 40 is made with inwardly extending retaining members or elements 43 and with a supporting element 44, all made in the manner hereinabove described, and for the purpose of securing a scratch-pin 45 rigidly in its operative position within said tubular member 40. Encircling the said member 40 at a point between the respective ends of said member, so as to provide a pair of annular shoulders 47 and 48, is an outer sleeve 46, which is suitably secured upon said member 40, and is made with a slot 49 which registers with the slot or opening 41 of the member 40, and into which the fingers or projections of the star-wheel 42 are movably arranged for the manipulation of the wheel to produce either an upward or downward movement of the wick, as will be clearly evident. Removably arranged upon the upper end-portion of the said main member 40, and resting upon the shoulder 48 is a cap or closing element or member 50 which is provided in its upper end with a scratching-member or plug 51, made of a suitable spark-producing alloy, and which is secured to said cap or closing-member in any suitable manner, or by means of the method hereinabove described in connection with the construction shown in Figs. 1 to 5 inclusive. The construction illustrated in said Fig. 10 has this advantage that the main body or shell can be detached from the tubular member 40 in case the star-wheel in its engagement with the wick has picked up a thread of the wick, because by the separation of said main body or shell from said member 40, the lower portion of the wick is withdrawn from said main body or shell, so that the wick can be taken hold of and pulled in a downward direction so as to disengage the picked-up thread from the star-wheel, whereupon the said main shell or body can again be connected with the member 40, so as to bring the several parts once more into their operative relations to one another. Furthermore, this detachable arrangement of the said main body or shell also permits the

easy and quick removal of the wick therefrom in case it should accidentally drop or be forced below the star-wheel, as will be clearly evident.

5 From the foregoing description of my present invention it will be clearly evident that I have produced a simply and neatly constructed lighter in which the hard metal scratching element need be rubbed or
10 scratched over the alloy of metal with an exertion of but little force or power to provide the desired results. It also will be evident, that the end-cap serves as a protector or cover to prevent moisture from coming in
15 contact with the wick; it furthermore protects the wick and the point of the scratch-pin or needle, it prevents the pin-point from coming in contact with the garment so as to damage the same, while being carried in
20 the pocket, and it finally serves as a maintainer or carrier for the alloy-plug. The said plug in turn serves to close the end of the tube-like cap or cover and provides, at this point, the most suitable place for the
25 scratching surface, besides providing a protecting cap for the scratch-pin or needle.

Of course, I am aware that changes may be made in the arrangements and combinations of the various devices and parts, as
30 well as in the details of the construction of the same, without departing from the scope of my present invention as set forth in the foregoing specification and as defined in the claims which are appended thereto.
35 Hence I do not limit this invention to the exact arrangements and combinations of the devices and parts as described in the said specification, nor do I limit my invention to the exact details of the construction of
40 the said parts as illustrated in the accompanying drawings.

I claim:—

1. A lighting appliance comprising a tubular body formed with an elongated opening, said body being also provided adjacent
45 to said opening with journal-receiving depressions, a tubular closing element separably connected with said body, a spark-producing alloy connected with said closing
50 element, a wick within said tubular body, a star-wheel provided with oppositely pro-

jecting journals rotatably arranged in said journal-receiving depressions, said wheel being in engagement with said wick for moving the same, inwardly pressed clamping members and an inwardly pressed supporting member within said tubular body, and a scratch-pin held in its fixed position by said clamping members and said supporting member. 55

2. A lighting appliance comprising a main tubular body, an inner tubular member having a portion extending from the upper open end of said main tubular body, said main tubular body being detachably
60 connected with said tubular member, a tubular closing element separably connected with said inner tubular member, a spark-producing alloy connected with said closing member, inwardly pressed clamping members and an inwardly pressed supporting member formed upon said inner tubular member, and a scratch-pin held in its fixed position by said clamping member and said supporting member. 65 70 75

3. A lighting appliance comprising a main tubular body, an inner tubular member having a portion extending from the upper open end of said main tubular body, said main tubular body being detachably
80 connected with said tubular member, a tubular closing element separably connected with said inner tubular member, a spark-producing alloy connected with said closing member, inwardly pressed clamping members
85 and an inwardly pressed supporting member formed upon said inner tubular member, a scratch-pin held in its fixed position by said clamping member and said supporting member, a wick with said main tubular
90 body and said inner tubular member, and an actuating wheel rotatably connected with said inner tubular member and said main body, and in engagement with said wick for moving the same. 95

In testimony, that I claim the invention set forth above I have hereunto set my hand this 7th day of December, 1908.

FREDERICK A. FELDKAMP.

Witnesses:

FREDK. C. FRAENTZEL.

FRED'K H. M. FRAENTZEL.