G. SELDEN & J. M. KEEP.

CIGAR LIGHTER.

No. 189,879. Patented April 24, 1877.

Fig. 1.

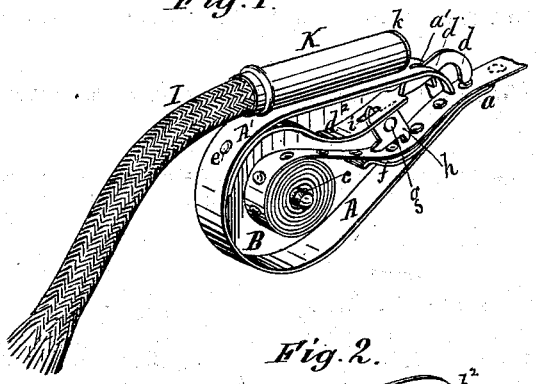


Fig. 2.

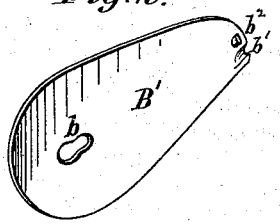
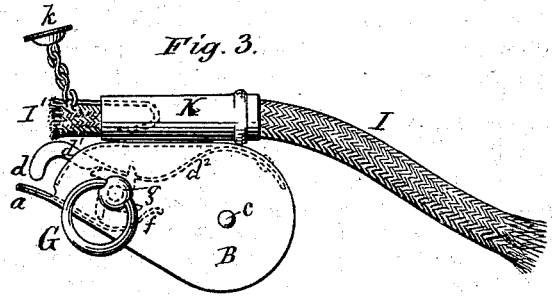


Fig. 3.



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IMPROVEMENT IN CIGAR-LIGHTERS.

Specification forming part of Letters Patent No. **189,879**, dated April 24, 1877; application filed February 7, 1877.

To all whom it may concern:

Be it known that we, GEORGE SELDEN, of the city and county of Erie, State of Pennsylvania, and JAMES M. KEEP, of Jersey City, county of Hudson, State of New Jersey, have invented certain new and useful Improvements in Cigar-Lighters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a perspective view of our improved cigar-lighter with the removable side plate detached. Fig. 2 is a similar view of the removable side plate; and Fig. 3 is a side elevation of the lighter, showing the reverse side to Fig. 1.

Similar letters of reference denote corresponding parts wherever used.

Our improvements relate to the means for feeding the tape having the percussion-pellets, and for actuating the hammer for exploding said pellets; and consists in a novel arrangement of the star-wheel, whereby it is made not only to feed the percussion-tape forward, but also to raise and release the hammer which explodes the percussion-pellets.

It further consists in a novel arrangement of the spring-hammer relatively to the anvil or nose-piece on which the percussion-pellets are exploded, and to the star-wheel actuating the hammer, whereby the force of the blow of the hammer is made to fall mainly on the star, thereby protecting the light anvil or nose-piece from injury; and, lastly, the invention consists in certain details of construction and arrangement hereinafter fully explained.

In the accompanying drawings, A B represent a portion of the shell or case, drawn up, by preference, from a single piece of metal, B forming one of the side plates, and A a rim or flange thereon, having the irregularly-curved elongated form shown; and B′ is a removable side plate, conforming in shape to and resting upon the flange or rim A, said parts together forming a case, within which are inclosed the percussion-tape and the devices for feeding the same and actuating the hammer.

One end of the flange A is extended at *a* slightly beyond the end of the case formed by the parts A B B′, and forms the anvil or nose-piece upon which the pellets are exploded.

At or near the center of the arc described by the large end of the case is placed a transverse stud or pin, *c*, rigidly secured at one end to the fixed side plate B, and provided at its opposite end with a groove or a button, either or both. The removable side plate B is slotted at a point, *b*, coinciding with the point of attachment of the pin *c* to plate B, said slot being enlarged at one end to permit the passage of the end of the pin *c* through the plate, after which, by moving said plate endwise, the converging walls of the slot pass into the groove or snugly under the button on the end of said pin, after which the plate B′ is turned into the same transverse plane with plate B, and inwardly-projecting spurs b^1 b^2 at its forward end engage with the edges of plate A, and hold the plate B securely in place. The pin *c* receives the coil or roll of percussion-tape, as shown in Fig. 1, the removable plate adapting the coil to be renewed as required.

The curved forward end of the upper or shorter arm A′ of plate A, where it approaches the lower or longer arm, is slotted at *a′*, the handle d^1 of the hammer *d* passing through this slot, and being connected at its inner end to, or made in one piece with, a flat bent spring, d^2, which, at its inner end, is riveted or otherwise securely fastened at *e* to the plate A, as shown, the arrangement of the parts being such as to bring the hammer *d* directly over the anvil or nose-piece *a*, as shown. To the lower wall opposite the hammer-spring is secured a second spring, *f*, curved upward at its inner end, and forming an elastic or yielding apron, over which the tape is fed forward toward the anvil or nose-piece *a*, and about midway between the springs d^2 and *f*, near the forward or smaller end of the case, is a transverse shaft, *g*, mounted and turning in a suitable bearing in the fixed side plate B. The shaft *g* has a star-wheel, *h*, secured to its inner end, located between the springs d^2 and *f*, said star-wheel serving, by its rotation, to feed the tape forward, and to actuate the hammer for exploding the percussion-pellets, as follows: The spring-apron *f*, curved to conform to an arc of a circle described by the points of the star-

wheel, serves to hold the portion of tape resting thereon snugly up against said points, which come into contact with the tape directly behind the raised percussion-pellets, the latter serving as teeth to the tape, and causing the tape, as the star-wheel is rotated, to be drawn forward and pushed outward upon the apron or nose-plate *a*. The spring d^2, which supports the hammer *d*, has a slot, *i*, formed in it, extending from a point at or nearly opposite the shaft *g* toward the rear end of said spring, permitting the points of the star-wheel, after they have acted upon and overcome the tension of the spring and raised the hammer, to escape from the spring through said slot, thereby allowing the spring to be suddenly retracted, and causing the hammer to descend upon and explode the percussion-pellets resting on the nose-piece *a*. By reference to Fig. 3 it will be seen that the hammer, after the spring d^2 is released from the star-wheel point, is not in actual contact with the nose-plate, but the spring d^2 descends upon one of the faces or sections of the wheel between the points, and the latter consequently receives the force of the blow, while permitting the hammer to descend sufficiently far to explode the percussion-pellets. By this arrangement the nose-piece, essential to the explosion of the pellets, but which is simply an extension of one of the thin and light casing-plates, is protected from injury. The spring *f* yields to permit the passage of the points of the star-wheel, but at the same time holds the tape up thereto in such manner as to insure the action of the points on the percussion-pellets for feeding the tape forward. The distance apart of the pellets will be regulated, of course, with reference to the distance apart of the points of the wheel, or vice versa, for insuring the proper relation of the one to and their action upon the other. The shaft *g*, which extends through the casing-plate B, has an enlarged head or end, (see Fig. 3,) perforated to receive a ring, G, which, when not in use, folds down by the side of said plate B, as shown. The punk or wick I, to be ignited by the explosion of the pellets, is passed through a short tube, K, attached to the short arm A′ of the bent plate A, and when it is to be ignited is drawn up or out of the tube until its upper end I′ is about opposite the nose-plate *a*, as shown in Fig. 3.

Now, by grasping the device or lighter in the left hand, and giving a forward partial rotation to the star-wheel with the right hand by means of the ring or thumb piece G, the first action of said wheel will be to raise the hammer slightly, freeing the percussion-tape therefrom, and permitting the tape to be fed forward by the rotation of the point of the star-wheel engaging therewith until one of the percussion-pellets is brought into position on the nose-piece *a* directly under the hammer. At the same time another point of the wheel *h* acts upon the hammer-spring for raising the hammer until, by the rotation of the wheel, said point escapes through the slot *i*, permitting the hammer to descend suddenly upon and to explode the pellet, as explained, and the fire from the pellet is projected forward from the nose-piece and ignites the punk or wick I, in a manner that will be readily understood.

For extinguishing the wick, a cap-plate, *k*, to the upper end of tube K, is employed, connected by a small chain and hook with the tape I, the hook being inserted in the tape, as shown in Fig. 3, in such manner that as the lighted end of the tape is drawn into the tube, cap *k* is drawn down upon the end of the tube over said lighted end of the tape, thereby closing the tube, excluding the air, and extinguishing the fire.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The star-wheel *h*, in combination with the yielding apron *f*, over which the igniting or percussion tape is fed, substantially as and for the purpose described.

2. The arrangement of the star-wheel *h* relatively to the nose-piece *a* and hammer-spring d^2, whereby the force of the blow of the hammer is received by the wheel, as described.

3. The combination, with the lighter case or frame, of the star-wheel *h*, hammer *d*, and yielding feed-apron *f*, arranged and operating substantially as described.

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