

No. 633,198.

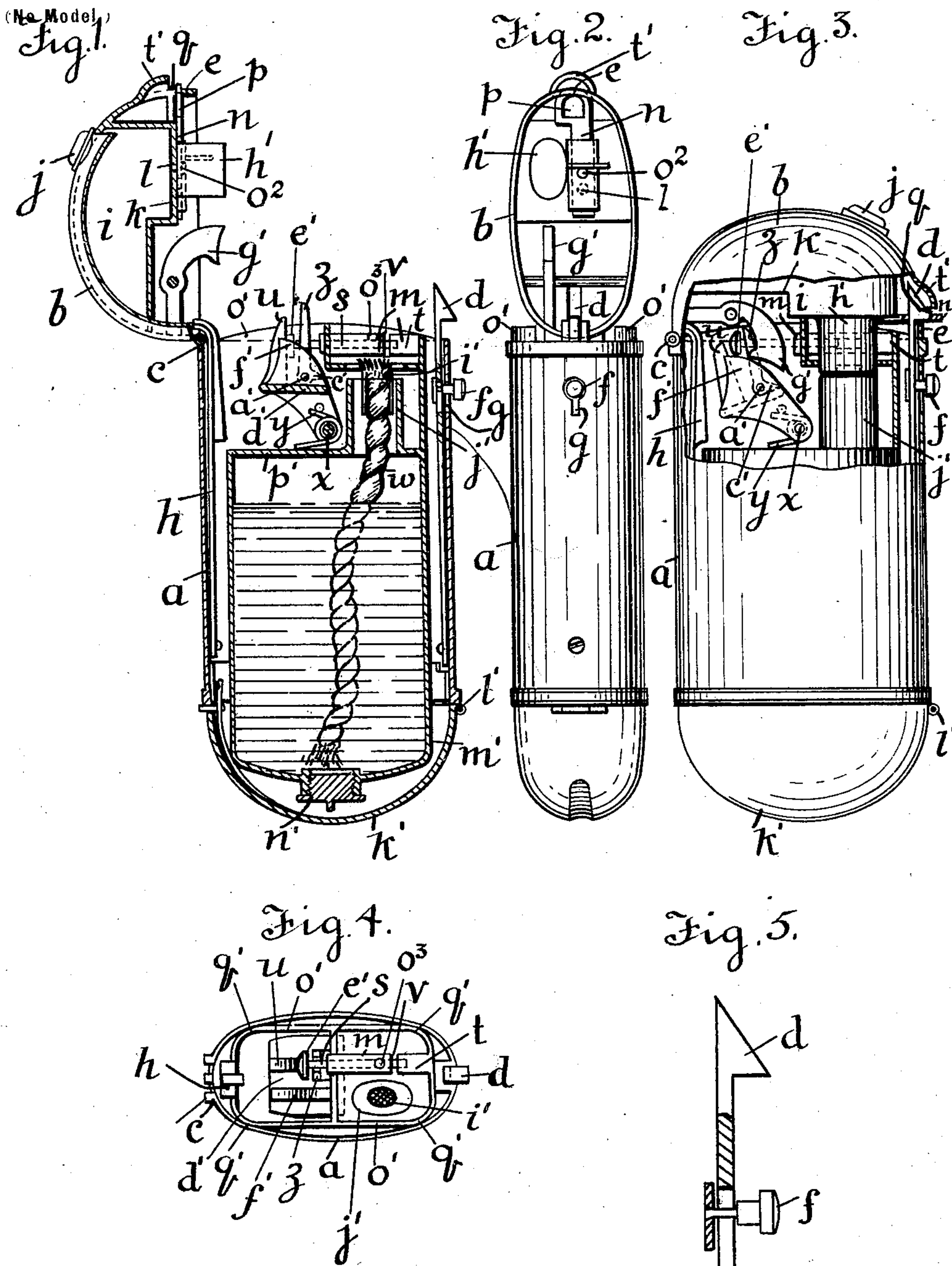
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W. M. HÖKERSTEDT & A. V. WESTERLUND.

AUTOMATIC LIGHTING TORCH.

(Application filed Oct. 2, 1897. Renewed Feb. 8, 1899.)

(No Model)



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AUTOMATIC-LIGHTING TORCH.

SPECIFICATION forming part of Letters Patent No. 633,198, dated September 19, 1899.

Application filed October 2, 1897. Renewed February 8, 1899. Serial No. 705,209. (No model.)

To all whom it may concern:

Be it known that we, WILHELM MAGNUS HÖKERSTEDT and AUGUST VALENTIN WESTERLUND, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented a certain new and useful Improved Automatic-Lighting Torch, of which the following is a specification.

Our invention consists of improvements in the apparatus of a torch or lamp to be ignited by a magazine of explosive pellets and mechanism for exploding a pellet in close proximity to the wick of the torch, all contained in a pocket-flask and in such arrangement that the cover of the flask will on being released by a push-stud and forced open by a spring permit a pellet-firing pin to act and ignite the torch, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of our improved automatic-lighting torch with the cover open. Fig. 2 is an elevation of the torch with the cover open, as seen looking from the right hand of Fig. 1. Fig. 3 is a side view, partly in section, with the cover closed. Fig. 4 is a top view with the cover detached. Fig. 5 is a detail of the spring-hook that locks the cover shut.

The body of the pocket-flask is represented at *a*, said body being closed at the bottom and open at the top and preferably constructed of sheet metal suitably drawn into the desired shape. *b* is a cover of like character. It is hinged to the body *a* at *c* for opening and closing. A spring-hook *d* is provided in the body *a* opposite to the hinge for engaging the loop *e*, provided on the cover to secure the cover when closed. The shank of the spring-hook has a push-stud *f* projecting out through a slot *g* in the body for pressing the hook back to release the cover for opening. This push-stud is movable up and down on the shank to be shifted down into the narrow part of said slot to engage the neck of the push-stud in the slot and prevent accidental release of the hook in the pocket. A spring *h* is provided within the body of the case in suitable relation to the cover to open or aid in opening the cover and hold it open.

A chamber *i* is formed in the cover for the pellet-holding magazine, a plugged opening *j* is provided for inserting the pellets, and in the bottom *k* of the magazine is an opening *l*, through which the pellets are to be supplied one at a time into the barrel *m* to be fired. This opening *l* is controlled by a slide *n*, fixed in a suitable guideway attached to the under side of bottom *k* and having an opening *o*, through which a pellet will drop into barrel *m* when said opening in the slide coincides with the opening *l* through said bottom. The slide is worked both for opening and closing by the spring-hook *d*, the head of which projects through a slot *p* near the end of the slide that reaches to the edge of the cover having the loop *e*, that the spring-hook *d* engages to hold the cover shut. Above the loop *e* a slot *q* is made through the shell of the cover permitting the end of the slide to be thrust forward by the point of the hook and for the said point of the hook to project over the loop *e*. Above this slot the shell of the cover is bulged outward at *t* to afford clearance for the hook when holding the cover shut. It will now be seen that when the cover is closed, the point of the hook being pressed back by the loop *e*, past which the bevel side of the hook is forced, said hook will enter the slot *p* and when it escapes from loop *e* will force the slide forward and bring its opening *o* into alinement with opening *l*, permitting a pellet to fall into barrel *m* preparatory to being fired when the cover is opened, said barrel having an opening *o*³ for the pellets.

The pellet falls between the end of the firing-pin *s* and the closed end *t* of the barrel, said firing-pin being located within the barrel suitably to be forced against the pellets by a hammer *u*, and between the opening and said closed end of the barrel is a notch *v* in such close proximity to the end of the torch-wick *w* to be lighted that the flash of the exploded pellet projected through said notch will ignite the wick. The hammer is pivoted at *x*, and the coiled spring *y*, carried on said pivot, is adjusted to thrust the hammer forward with great force to explode the pellet when released for such action. The hammer-shank carries a forked retractor *z* for the firing-pin, said retractor being pivoted at *a'* for

limiting its range of movement relatively to the movement of the hammer, which is greater than is required for retracting the firing-pin, said retractor having a toe *c'*, with which the upper side of flange *d'* comes in contact after the hammer has moved a certain distance backward and causes the retraction of the firing-pin to the required extent, the forked retractor being thus made to take effect on the head *e'* of the firing-pin. The hammer carries a cam-plate *f'*, on which a striker *g'*, carried in the cover, takes effect when the cover is closed to retract the hammer and the firing-pin preparatory for action when the cover is released by the spring-hook for opening. The spring *y* then thrusts the hammer forward against the firing-pin, and it also thrusts the cam-plate *f'* against the striker *g'* and forces the cover open.

The cover *b* carries a hood *h'*, that closes over the top of the wick-tube *i'* and onto the upper end of a stand-pipe *j'*, surrounding the wick-tube, in such manner as to make a tight joint, preventing escape of the burning fluid while carrying the torch in the pocket.

The lower end of the case has a cover *k'*, hinged at *l'* to open for access to the lower end of the liquid fountain *m*, which has a plugged filling-opening at *n'*.

The barrel *m* and the hammer-carrying pivot *x* are suitably supported by an extension *o'* of the shell above the top *p'* of the fountain, and they are suitably secured in the flask by solder at *q'* or by other means, as preferred.

We claim—

1. The combination in a pocket-flask, of the torch in the body of the flask, firing-barrel and firing-pin located in suitable proximity to the wick for lighting it, spring-actuated hammer for impelling the firing-pin, magazine in the cover for explosive pellets, passage for the pellets from the magazine into the firing-barrel, slide for controlling said passage, means for automatically opening and closing the slide, and means for automatically retracting and releasing the hammer substantially as described.

2. The combination in a pocket-flask, of the torch in the body of the flask, firing-barrel and firing-pin located in suitable proximity to the wick for igniting it, spring-actuated hammer for impelling the firing-pin, magazine in the cover for explosive pellets, passage for the pellets from the magazine into the firing-barrel, slide for controlling said passage, means for automatically opening and closing the

slide through the instrumentality of the cover-holding hook, and means for retracting the hammer through the instrumentality of the flask-cover substantially as described.

3. The combination with the flask-cover, of the bottom plate of the pellet-magazine located in the cover and having the opening for the delivery of the pellets, and the spring-hook for the cover, of the slide for controlling said delivery-opening arranged in the relation to the spring-hook for being actuated by said hook in its movements relatively to the cover substantially as described.

4. The combination with the flask-cover, having the loop for the spring-hook and the slot for the point of the hook above said loop; bottom plate of the pellet-magazine located in the cover and having the opening for the delivery of the pellets, and the spring-hook for the cover, of the slide for controlling said delivery-opening arranged in the relation to the spring-hook and the loop of the cover for said spring-hook, for being actuated by said hook as it engages and releases the loop of the cover substantially as described.

5. The combination with the flask-body, torch located therein, and the flask-cover having the pellet-magazine, of the firing-barrel and firing-pin located in the relation to the torch-wick for igniting it, of the slide controlling the delivery of the pellets into the firing-barrel, means for actuating said slide, a spring-hammer arranged to act on the firing-pin, a retracting-cam for the hammer, and the striker on the cover for retracting and releasing the hammer substantially as described.

6. The combination with the flask-body, torch located therein, flask-cover having the pellet-magazine and spring-hook for securing the cover, of the firing-barrel and firing-pin located in the relation to the torch-wick for igniting it, slide controlling the delivery of the pellets into the firing-barrel and actuated by said spring-hook, spring-hammer arranged to act on the firing-pin, retracting-cam for the hammer and the striker for retracting and releasing the hammer, substantially as described.

Signed at New York, in the county of New York and State of New York, this 27th day of September, A. D. 1897.

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Witnesses:

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