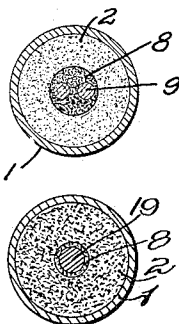
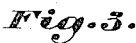
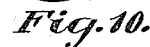


APPLICATION FILED MAR. 28, 1910.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.



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1,059,959.

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2 SHEETS—SHEET 2.

Fig. 7.

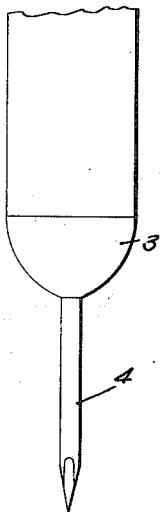
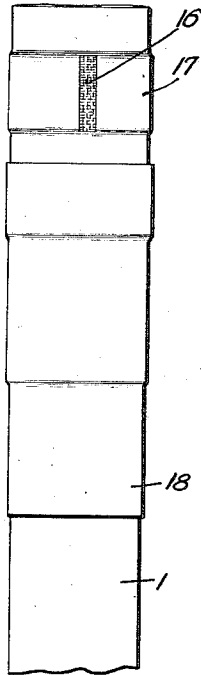


Fig. 4.

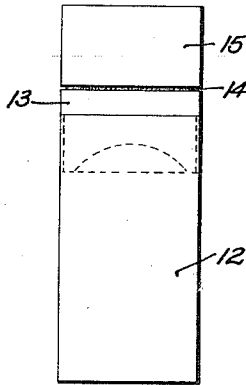


Fig. 5.

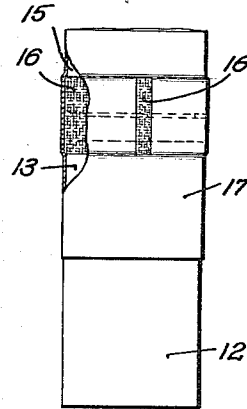


Fig. 6.

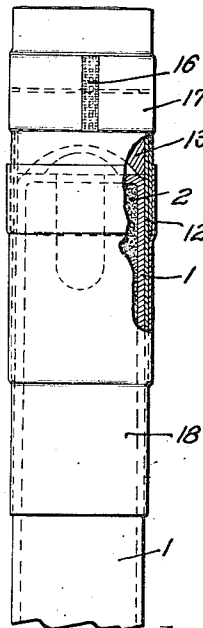
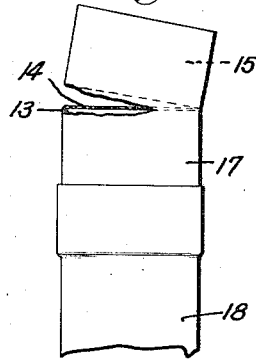


Fig. 8.



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UNITED STATES PATENT OFFICE.

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TORCH.

1,059,959.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed March 28, 1910. Serial No. 551,837.

To all whom it may concern:

Be it known that I, JOHN WILEY EDMANDS, a citizen of the United States, and a resident of Newton Center, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Torches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to torches such as are used upon railroads and ships for signaling at night and aims to provide an improved means for igniting the same.

Of the drawings illustrating one form of my invention selected for disclosure and description herein, Figure 1 is an elevation of the torch with the cover omitted, an intermediate portion of the torch being broken out for convenience, and the upper end thereof being shown in vertical section, disclosing clearly the priming means; Fig. 2 is a top or plan view of the same; Fig. 3 a horizontal section on the line 3—3 of Fig. 1; Fig. 4 an elevation of the cover partly assembled; Fig. 5 a similar view of the cover assembled, a part of the wrapper being broken out; Fig. 6 a similar view showing the cover secured in position upon the body of the torch, a portion of the cover and torch being broken out for clearness; Fig. 7 an elevation of the torch complete with its cover, a portion of the body of the torch being broken out for convenience; Fig. 8 a modified form of cover construction, showing the method of exposing the igniting means for use; Fig. 9 a partial, vertical sectional view of a modified form of priming construction for the torch; Fig. 10, a top or plan view of the same; and Fig. 11 a horizontal section on the line 11—11 of Fig. 9.

Referring first to Fig. 1, the torch proper comprises a hollow, preferably cylindrical body 1, of any suitable material, as paper, containing an inflammable material 2, of any suitable composition well known in the art adapted to produce a light of the color or colors desired. The body 1 is provided at its lower end with a suitable plug 3, herein of wood, provided in turn with a spike 4 by means of which the torch may be positioned upright when desired. The wall of the body 1 is crimped inwardly at the upper end thereof, Fig. 1, forming a closure 5 for said end, leaving therein only a small

opening 6 to receive the priming means. After the body has been filled with the inflammable material from the lower end thereof and the plug 3 inserted therein, a small hole 7, of suitable size, is drilled in the upper end of the filling, through said opening 6 and in said hole is poured a small quantity of any usual highly inflammable priming mixture 8. A short piece of flexible material, preferably Manila cord, 9, of convenient size and, herein, of a length a little more than twice the depth of the hole 7, is then inserted therein by any convenient means in such manner that the two ends 10 of the cord 9 extend somewhat above the crimped end 5 of the body and form a core or anchoring cord 9 for the priming 8. An additional small quantity of the priming material is then poured over and to conceal the ends 10 of the cord 9, filling thereby the hole 7, if not previously filled, and this priming hardens and forms, herein see Fig. 1, a substantially cone-shaped priming head 11, anchored to the cord 9. A thin film of the mixture 8 surrounds the cord or core 9 in the hole 7 and adheres thereto the whole forming a very satisfactory priming means for and in contact with the signal material 2.

The described construction of priming means is preferable to the use of a quantity of the priming 8 inserted in the hole 7 unaccompanied by the anchoring cord 9, inasmuch as the priming head, if used in the latter manner, is likely, when ignited, to generate sufficient gas to blow itself off and out of the hole 7 before igniting the torch.

It is common, in torches of this type at the present time, to use a wooden peg in place of the cord 9 described, and for the same purpose. Such construction, however, is objectionable because, among other reasons, the priming 8 does not adhere as tenaciously to the peg as it does to the cord and if, when the priming is ignited, it is struck too hard, or with even a moderate, laterally directed blow, the priming head 11 is apt to chip off, as does the head of a safety match oftentimes, without igniting the material 2, thus rendering the torch useless. Moreover, the use of a bent core member possesses another advantage over the use of the peg or similar member in that it provides a thin film of priming of greater area, extending as it does about both ends of the core, than can be obtained by a similar film about the

four sides of a peg member, thus minimizing the danger of formation of gas at the time of ignition with its resulting danger of blowing out of the fuse or priming.

5 The cover, see Figs. 4, 5 and 6, comprises herein a shorter, preferably cylindrical member 12, adapted to fit closely over the end of the torch tube 1, and provided at its upper end with a, herein wooden, plug or
10 end member 13, coated with a complementary priming or igniting material 14, adapted when brought into contact with the priming 8, to cause the latter to ignite, similar to the manner in which certain safety matches may
15 be ignited, by striking them against a complementary igniting material on the outside of the box. Said complementary priming may be composed of any of the ingredients well known in the art as suitable for that
20 purpose. It is common, at the present time, to use as a cap or cover for said priming 14 a paste-board disk, piece of tape or other similar member, positioned over the priming 14, or even to rely entirely upon a paper
25 wrapper for the cover, the same being folded down upon said priming, but I have found that such means are insufficient to properly protect the priming. In order to fully protect said priming or igniting means,
30 not only from premature ignition during the assembling thereof but, also, after assembling, from the same and other dangers, I have shown the cover provided with a substantially long, cylindrical cap member 15,
35 herein of wood. This cap 15 is long enough, also, to serve conveniently as a handle member, if desired, in a modified form of construction, to be referred to.

It is desirable that the two parts 13 and
40 15 be so secured that they may be easily and quickly separated, to expose the igniting means 14. As a convenient means for detachably securing said members 13 and 15, I have shown them, Figs. 5, 6, as provided
45 with a strip of tape or other suitable material 16, secured by any convenient means, as cement, over the adjoining edges of the members 13 and 15, thereby covering and protecting the priming 14. After the said
50 members have been secured as described, I may further secure and protect said members and the complementary priming 14 by a wrapper 17 of paper or other proper material, which may be rolled about or otherwise
55 applied thereto and, if desired, folded down upon, and even cemented to, the top of the cap 15, permitting the loose end of said tape 16 to protrude at some convenient point, as where the two edges of the wrap-
60 per meet or overlap, Figs. 5 and 6. After the cover is assembled as described, and positioned upon the upper end of the torch, Figs. 5 and 6, it is preferably secured thereon by a second wrapper or band 18, of suitable
65 material rolled about the lower portion

of said cover and overlapping the end of the torch, and secured to both cover and torch as by cementing, Figs. 6 and 7. The joint between the two members 13 and 15, between which members is the priming 14, and the joint between the cover and torch, having been secured by the wrapper referred to, may be water-proofed by applying thereto a thin coating of paraffin or other suitable material.

When one wishes to light the torch he seizes the loose end of the tape 16 and draws it around the cover, thus breaking the joint between the end 13 and cap 15 and the cap 15 will be, at the same time, and by the same act, detached from the end 13, and the igniting means 14 will be exposed for use. He then breaks the joint between the cover and torch, see dotted lines Fig. 6, by twisting one slightly, relative to the other, and the cover may be easily removed. The torch is then lighted by bringing the igniting means 14 into frictional contact with the priming head 11.

By the above described means the end member 13 and cap 15 may be secured in such manner that they may be easily and quickly detached under any conditions.

If preferred the securing tape 16 may be carried only partially around the end and cap members 13 and 15, removing therewith, when removed, only a part of the wrapper about the joint.

It is important that the handle-cap be removable from the cover laterally instead of by an endwise pull, as, if the priming be damp, as is frequently the case, an endwise pull upon the handle-cap is very apt to remove the priming, thus rendering the fusee useless.

In Fig. 8, a modified form of igniting member is shown where the end 13 and cap 15 are secured by the cementing of the wrapper 17 thereabout the tape 16 being omitted. In this case the member 15 is detached by simply breaking the joint as by oppositely bending the members 13 and 15 when the wrapper 17 will separate at the joint, as shown. This construction obviates the danger of the tape 16 becoming accidentally loosened, as by contact with other objects, thereby breaking the joint and exposing the priming, with consequent danger of fire and of rendering the complementary igniting means inoperative through any
120 cause.

On account of the danger from fire and explosion, when the ingredients comprising the priming 8 and the priming 14 respectively are handled in the same building, it is common at the present time, in well regulated factories, to have the priming 14 applied to the cover in a separate building from that in which the torches are assembled. The covers are then carried into the
130

torch building with the priming 14 thereon uncovered, and the covers are secured to the torch body, and the priming 14 protected, by the application thereto at one and the same time of a wrapper of paper or other suitable material similar to the wrapper 17, see Fig. 5, said wrapper being carried down over the joint between the cover and torch, if desired, as a seal therefor. The operation of assembling the torches and covers as outlined is, however, one of considerable danger, as the operative sometimes accidentally strikes the unprotected priming 14 against the priming head 11, thereby causing a fire or explosion or both. The assembling of my improved torch and cover is, however, free from the danger aforesaid. By the application to the cover of the substantial cap 15, and securing of the same by the wrapper 17 to said cover, the priming 14 is fully protected by said wrapper and cap when the cover is carried into the torch building for the final assembling. Thus all danger from accidental, premature contact of said priming 14 and head 11 is removed.

In Fig. 9 I have shown a modified form of core for the priming means comprising a preferably wooden peg 19, provided with an anchoring nipple 20 at the upper end thereof to which the priming head 11 adheres more or less tenaciously and thus obviates to some extent the danger of the head 11 chipping off, as has been described, without igniting the priming 8.

The improved torch described possesses several advantages which have been briefly referred to, already viz: the improved form of priming wherein the thin film of priming of greater area provides a more certain means of igniting the torch, and lessens the danger of its blowing itself from the torch before such ignition; the more secure anchoring means for the priming head furnished by the flexible core ends; and the ad-

ditional protection during manufacture and subsequent handling and shipping provided for the igniting means on the cover by the substantial cylindrical cap therefor. This form of cap also provides a practicable means of exposing the igniting means without the use of the tape with its unsecured end.

I have shown herein a convenient embodiment of my invention but doubtless modifications thereof may be constructed without departing from the spirit of the invention.

Claims.

1. A torch or fusee comprising a body having inflammable material and end priming, a cover overlying said priming and secured to the body end and having complementary igniting means, an elongated, disk-like, handle-cap, the peripheral portion of the inner end of which rests substantially flatwise against the igniting end of the cover, and readily severable sealing means circumferentially wrapped about the cover and handle-cap and fixedly holding the latter against separation from the cover by longitudinal pull, said handle-cap being readily separable from the cover by a lateral blow or leverage severing said sealing means.

2. A torch comprising a body provided with inflammable material, a primer therefor inserted in one end of said torch, and comprising a flexible U-shaped priming-anchoring core embedded in said inflammable material substantially its entire length and carrying a film of highly inflammable material, and a cover provided with igniting means.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

J. WILEY EDMANDS.

Witnesses:

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EVERETT S. EMERY.