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2,483,437

LIGHTING TORCH

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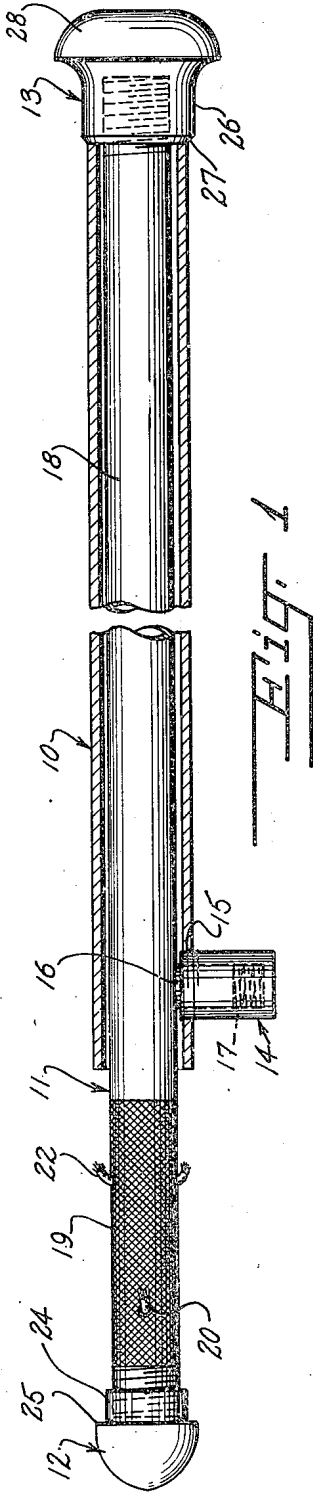


Fig. 1

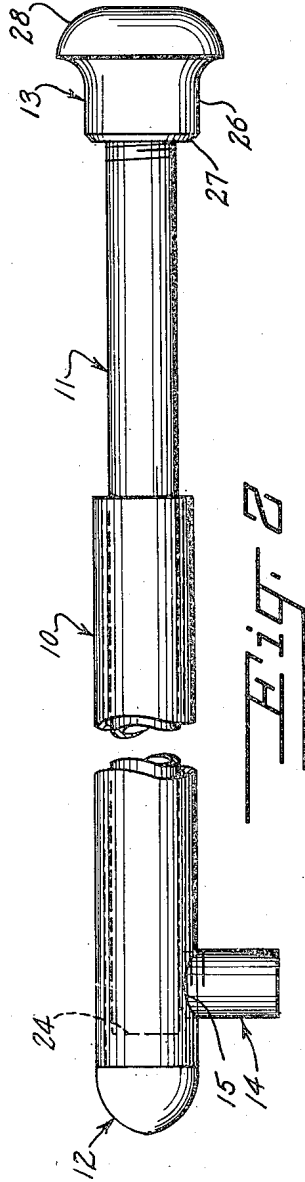


Fig. 2

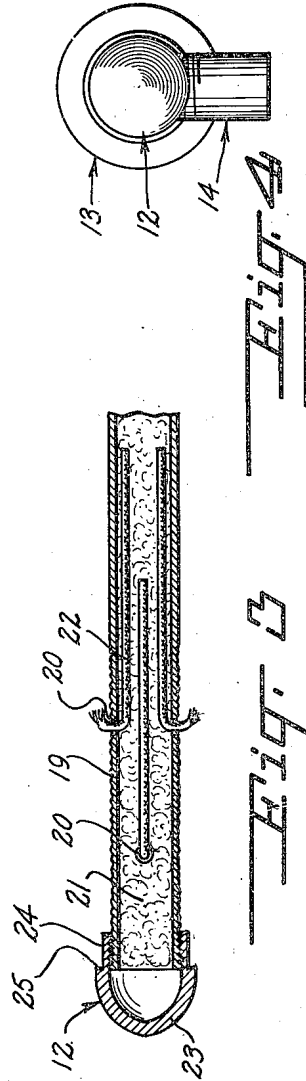


Fig. 3

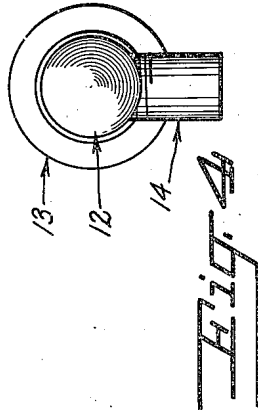


Fig. 4

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LIGHTING TORCH

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1 Claim. (Cl. 67-6.1)

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This invention relates to improvements in pyrophoric or self-igniting lighters and more particularly to a lighter in the form of a torch for lighting oil burners, furnaces, and similar devices, and is an improvement on the lighting torch disclosed in my co-pending application, Serial No. 732,211, filed March 4, 1947, for "Lighting torch," issued as Patent No. 2,448,622, on September 7, 1948.

It is among the objects of the present invention to provide an improved, self-igniting, lighting torch which is small in size, light in weight and of economical construction, and has a length sufficient for convenient use as a torch for lighting fuel burners in furnaces and under boilers and for similar purposes, which is operated entirely from the end thereof opposite the ignitable end, and may be ignited and extinguished by the same operating means, which is ignitable after being placed in lighting position, may be extinguished upon removal from such position, and is tightly sealed when extinguished so as to occasion no fire hazard or endanger any inflammable material in or near the place of use, and which comprises a minimum number of simple parts and is neat and attractive in appearance.

Other objects and advantages will become apparent from a consideration of the following description in conjunction with the accompanying drawing, wherein:

Figure 1 is a longitudinal cross-section of a lighting torch illustrative of the invention;

Figure 2 is a longitudinal elevation of the lighting torch shown in Figure 1, showing the parts thereof in a different operative position from that illustrated in Figure 1;

Figure 3 is a longitudinal cross-section of the left-hand end portion of the inner tubular member of the torch as viewed in Figure 1; and

Figure 4 is an end elevation of the torch looking at the left-hand end thereof, as illustrated in Figures 1 and 2.

With continued reference to the drawing, the improved torch generally comprises an outer tubular member 10, an inner tubular member 11, a cap 12, a knob 13 and a flint carrier 14.

The outer tubular member 10 is a straight tubular section of suitable material, such as aluminum, and is of a length sufficient to provide a convenient handle for the torch so that the torch may be inserted through the door of a furnace to ignite a fuel burner within the furnace, to ignite a fuel burner positioned under a boiler, and for similar purposes. This outer tubular member 10 is provided adjacent one end with an aperture 15 into which is threaded one end of the tubular, cylin-

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dric flint carrier 14. The flint 16 is carried in the inner end portion of the carrier and is preferably urged inwardly by a suitable spring 17.

The inner tubular member 11 comprises a tubular portion 18, which is approximately the same length as the outer tubular member 10, and may also be formed of aluminum or other suitable material, and a tubular extension 19 secured to the end of the portion 18 at the end of the outer tubular member provided with the flint carrier 14. This extension 19 is preferably made of a suitable hard material, such as a hard steel alloy, and is provided with a knurled or otherwise roughened outer surface and with a plurality of apertures 20.

The interior of the portion 18 of the inner tubular member and of the extension 19 constitutes a fuel reservoir and may be filled with a suitable absorbent material 21, such as absorbent cotton. Suitable wicks 22 are disposed in the interior of the inner tubular member and have their end portions extended through respective apertures 20 to the exterior of the extension portion 19.

The cap 12 has a hollow, dome-shaped portion 23 from the open end of which extends an annular flange 24 of reduced diameter which is provided with internal screw threads engageable with external screw threads provided upon the outer end of the extension 19 and with an annular external shoulder 25. Cap 12 is screw-threaded on to the outer end of extension 19 to provide an end closure therefor and is removable when it is desired to replenish the fuel in the lighter reservoir. The cap flange 24 fits closely into the corresponding end of the outer tubular member 10 and the annular shoulder 25 provides a limit stop or abutment for this end of the outer tubular member. When the outer tubular member is moved to a position in which its adjacent end contacts the shoulder 25, it completely covers the apertured portion of the extension 19 and the projecting ends of the wicks 22 and the flange 24 forms a seal with the corresponding end of the outer tubular member so that the ignitable portion of the lighter is completely inclosed and sealed. If the outer tubular member or tubular handle is moved into engagement with the shoulder 25 when the wicks 22 are lighted the wicks will be immediately extinguished and cannot be ignited as long as the outer tubular member is in this position relative to the inner tubular member. This position of the outer tubular member relative to the inner tubular member is clearly illustrated in Figure 2.

The knob 13 has an annular flange portion 26 slightly greater in diameter than the outside di-

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ameter of the outer tubular member 10 and terminates inwardly in an annular shoulder 27 with which the adjacent end of the outer tubular member 10 contacts to limit movement of the outer tubular member relative to the inner tubular member in the corresponding direction. The knob is provided with an internally screw-threaded recess which receives the corresponding, externally screw-threaded end of inner tubular member 11 and has a rounded convex face 28 for engagement by one hand of a person operating the torch, the tubular handle 10 being held in the other hand of such person.

The operation of the device is substantially as follows:

Considering the torch to be in the condition illustrated in Figure 2, the outer tubular member or handle 10 is held by the operator in one hand and the left-hand end portion of the torch, as illustrated, is moved to the desired operative position. The knob 13 is then forced sharply inward of the adjacent end of the handle. This forces the inner tubular member 11 through the outer tubular member 10 and forces the extension 19 out of the outer tubular member. At the same time the roughened outer surface of the extension 19 will be forced past the inner end of flint 16 creating sparks which will ignite the wicks 20. The wicks then provide sufficient flame to ignite the oil burner or other device. After the burner has been ignited the knob 13 is pulled away from the adjacent end of handle 10 pulling extension 19 back into the adjacent end of the tubular handle thereby extinguishing the flame of the wick 22 and causing the cap flange 24 to enter the corresponding end of the outer tubular member and seal the ignitable end of the torch, the movement being limited by contact of the cap shoulder 25 with the adjacent end of the tubular handle. The torch may then be moved to any other desired location without danger of igniting or scorching any other inflammable material in the neighborhood.

Relative movement of the inner tubular member through the outer tubular member to project the extension 19 is limited by shoulder 27 on knob 13 so that the shoulders 25 and 27 provide opposed limit stops limiting relative movement between the outer and inner tubular members of the torch.

The two tubular members 10 and 11 may be made of comparatively small diameter, a torch made of tubing of approximately one-quarter inch outside diameter for the inner tubular member having been found to operate satisfactorily, and all parts of the torch except the flint and the flint striker or tubular extension 19 may be formed of a suitable non-corrosive, light weight material, such as aluminum or aluminum alloy, to provide a small torch of extremely light weight which is particularly convenient to use. The flint 16 and spring 17 are retained in the hollow flint carrier 14 so that the flint may be renewed whenever necessary by unscrewing the carrier from the outer tubular member and the inner tubular member may be rotated relative to the outer tubular member so that the wear of the flint on

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the roughened surface of the extension is equalized over the entire area of the outer surface of the extension thereby providing a torch of extremely long life.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claim are, therefore, intended to be embraced therein.

What is claimed is:

A self-igniting lighting torch comprising an elongated inner tubular member of substantially uniform diameter throughout its length, an outer tubular member shorter than said inner tubular member surrounding said inner tubular member and longitudinally slidable thereon, a tubular extension on one end of said inner tubular member, said extension being of substantially the same diameter as said inner tubular member and having a roughened external surface and apertures therein, a cap screw threaded onto the outer end of said tubular extension and having an annular flange receivable in the corresponding end of said outer tubular member, an annular shoulder on said cap abutting the corresponding end of said outer tubular member when said outer tubular member is in torch extinguishing position, said shoulder providing a limit stop for relative movement of said inner and outer tubular members in one direction, absorbent material and wicks in said inner tubular member, said wicks having their ends extended through the apertures in said tubular extension whereby said inner tubular member constitutes a fuel reservoir for said lighter, a tubular flint holder carried by said outer tubular member near the end of the latter adjacent said cap, a flint carried in said flint holder and operatively engageable with the roughened surface of said tubular extension to ignite said wicks upon movement of said outer tubular member away from said cap, and a knob screw-threaded onto the end of said inner tubular member opposite said tubular extension and having an annular shoulder engageable with the adjacent end of said outer tubular member to limit relative movement between said inner and outer tubular members in the corresponding direction.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,448,622	Rizer	Sept. 7, 1948

FOREIGN PATENTS

Number	Country	Date
442,328	France	June 18, 1912