No. 613,819. Patented Nov. 8, 1898.

G. KELLY.

ILLUMINATING TORCH.

(Application filed July 25, 1898.)

(No Model.)

Fig. 1.

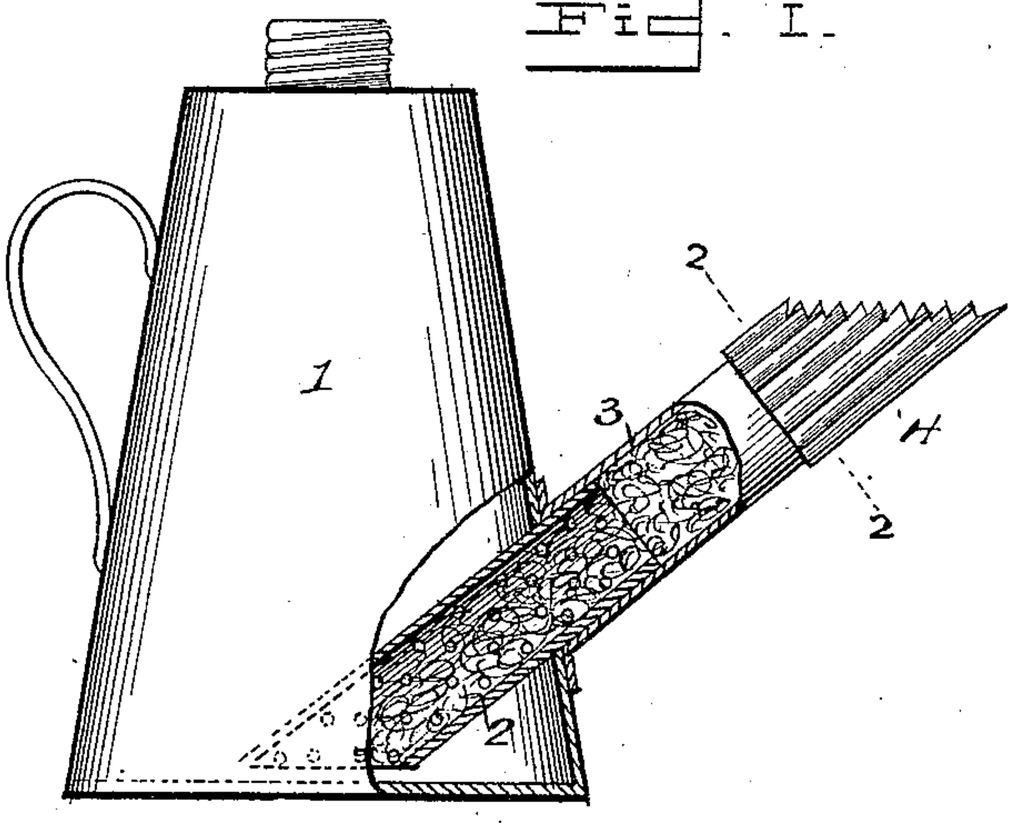


Fig. 2.

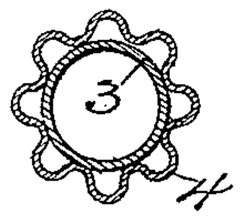


Fig. 3.

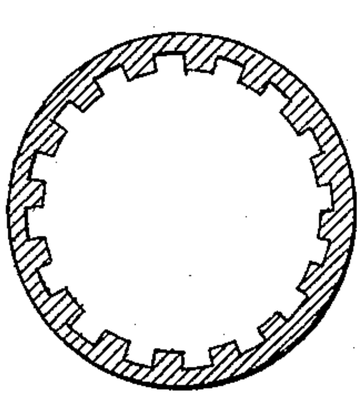


Fig. 4.

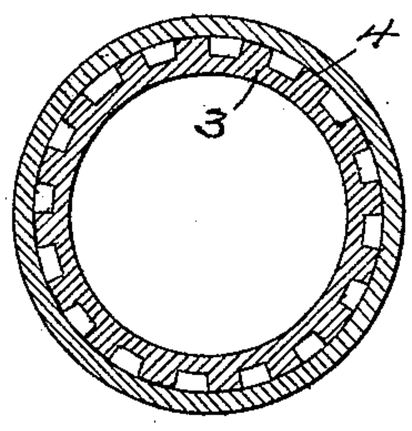


Fig. 5.

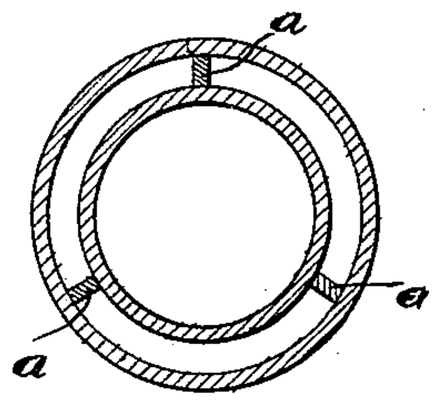


Fig. 6.

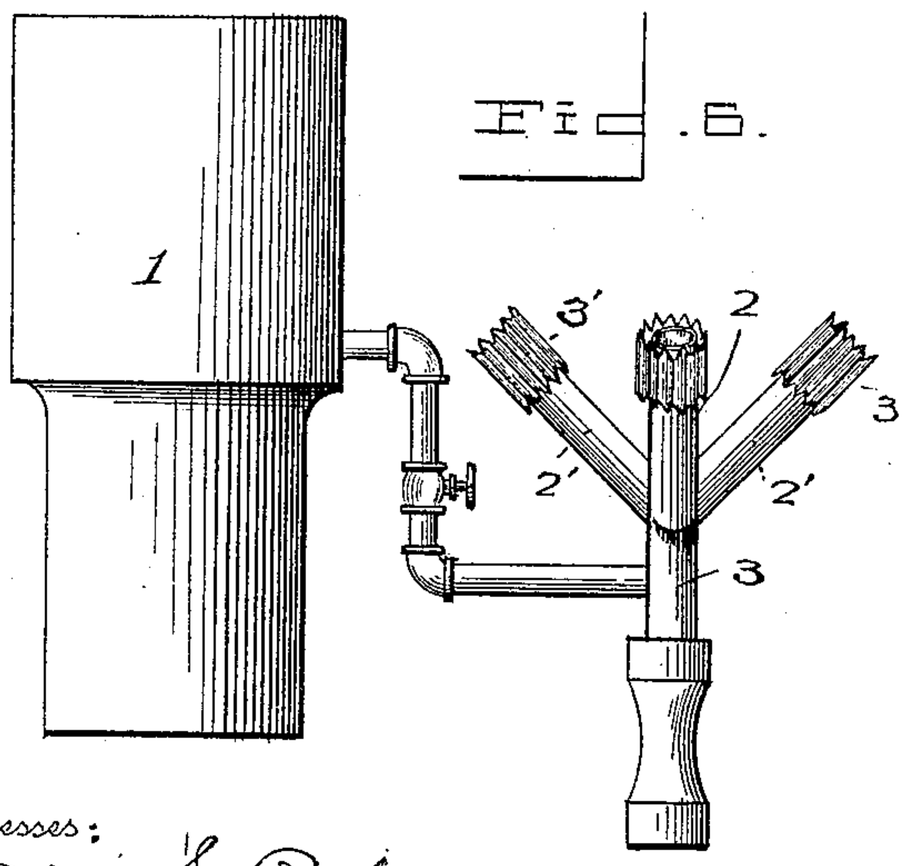
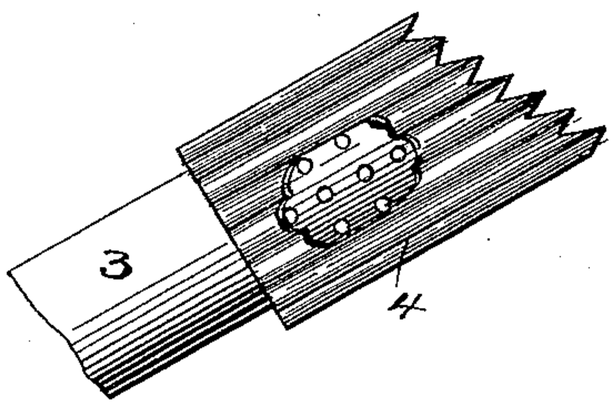


Fig. 7.



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Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE KELLY, OF MINERAL POINT, WISCONSIN, ASSIGNOR OF ONE-HALF TO PHILIP ALLEN, OF SAME PLACE.

ILLUMINATING-TORCH.

SPECIFICATION forming part of Letters Patent No. 613,819, dated November 8, 1898.

Application filed July 25, 1898. Serial No. 686,793. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KELLY, a citizen of the United States, residing at Mineral Point, in the county of Iowa and State of Wisconsin, have invented certain new and useful Improvements in Illuminating-Torches; and I do 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.

My invention relates to illuminating-torches; and the object is to simplify and improve the construction and increase the illuminating power without adding to the cost of manufacture.

To this end the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claims.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

The same reference characters indicate the same parts of the invention.

Figure 1 is a vertical section of a torch embodying my invention. Fig. 2 is a transverse section on the line 2 2. Figs. 3, 4, and 5 show different forms of caps. Fig. 6 shows a stationary torch provided with multiple burners. Fig. 7 is a similar form of burner for heating purposes.

1 represents the reservoir, and 2 a diagonal foraminous tube extending from within a short distance of the bottom of the reservoir to a point beyond the wall, and 3 denotes a tube which encompasses the projecting end of the tube 2, and its outer end is in turn encompassed by a concentric longitudinally-corrugated cap or sleeve 4. The tubes 2 and 3 are loosely packed with any suitable non-combustible fiber—such as mineral wool, asbestos, or the like—which becomes saturated with the oil in the reservoir through the foraminous tube 2, which is then conducted by capillary attraction to the open end of the tube 3, where it is ignited to produce the illuminating-flame. As this end of the tube 3 and encompassing cap 4 become heated a part of the oil becomes vaporized and the heat causes a current of air to flow through the longitudinal grooves in the sleeve 4. The air thus heated, mixing with the vapor from the end of the tube 3, is carried into the flame to give greater brilliancy to the light.

In Fig. 3 I have shown the cap or sleeve formed of cast-iron, cylindrical in form, and provided on its inner face with a series of longitudinal parallel grooves to form passages for the heated air.

In Fig. 3 the outer end of the tube 4 is corrugated or fluted and the sleeve 4 is a plain cylinder which encompasses said corrugated end, and in Fig. 5 both the tube and the sleeve are plain cylinders, and a series of longitudinal parallel ribs *a* are inserted between the tube and sleeve to form the air-passages.

In Fig. 6 the reservoir 1 is connected to the tube 3 by a valved pipe for feeding the oil to the foraminous tubes 2 and 2′ 2′. 3′ 3′ represent lateral burner-tubes which encompass the corresponding foraminous tubes 2′ 2′, and any suitable number of these may be radially arranged around the central tube 3 to correspond to the brilliancy of the light required.

In Fig. 7 I have shown the outer end of the burner-tube 3, where it is encompassed by the sleeve or cap 4, formed with a series of lateral orifices, so that the gaseous vapor may combine or intermix with the air in the sleeve, and thus add the mixed air and gas or vapor to the flame to increase its heating power.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A torch provided with a wick-tube, in combination with a longitudinal fluted concentric sleeve encompassing said wick-tube, and having its opposite ends open to the atmosphere, substantially as shown and described.

2. A torch provided with a wick-tube, in combination with a longitudinally-fluted concentric sleeve encompassing said wick-tube and having its outer end serrated, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE KELLY.

Witnesses:

PHIL ALLEN, Jr.,

FRANK E. HANSCOM.