

T. TOCCACELI.
ILLUMINATING TORCH.
APPLICATION FILED JULY 24, 1911.

1,065,987.

Patented July 1, 1913.

Fig. 1.

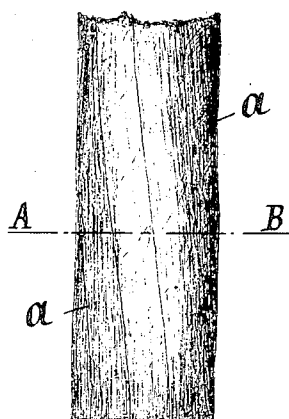
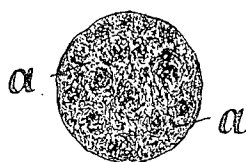


Fig. 2.



Witnesses:
H. H. Hunsberger
M. E. R. R.

Inventor:
Tito Toccaceli
by B. Singer
Atty

UNITED STATES PATENT OFFICE.

TITO TOCCACELI, OF ROME, ITALY.

ILLUMINATING-TORCH.

1,065,987.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed July 24, 1911. Serial No. 640,339.

To all whom it may concern:

Be it known that I, TITO TOCCACELI, a subject of the King of Italy, artificer, and a resident of Rome, in the Kingdom of Italy, have invented a certain new and useful Illuminating-Torch, of which the following is a specification.

The object of the present invention is an illuminating torch which burns with a calm and bright flame without producing smoke or developing any noxious gases.

The torches now in use are made of rope strands impregnated with colophony and tar; they burn with a somewhat red flame and produce much smoke; the gases, they develop, especially on account of their incomplete combustion, are extremely noxious. For this reason these torches cannot be employed without danger in closed premises, and even when they are employed in the open air, their light is dim, and the flame is oscillating and intermittent; it is necessary to shake them from time to time to reanimate them; it follows that the torches burn out rapidly.

The torch according to the present invention completely eliminates the above-mentioned inconveniences, because it produces a firm and brilliant flame; the combustible matters, by which it is formed, burn completely and regularly; therefore, this improved torch works in a perfect manner and, notwithstanding the somewhat higher cost of its components, a great economy is realized on account of the longer duration of the illumination.

The torch according to the present invention is represented in the annexed drawing, in which—

Figure 1 partially shows a side view of same without the paper covering, while Fig. 2 is a section according to line A—B of Fig. 1.

The torch substantially consists in a bundle of fibrous materials *a* (Figs. 1 and 2) impregnated with fatty substances mixed with pulverized compounds of calcium of such a nature that during the combustion the flame acquires a peculiar brightness. To this fundamental mixture can be added additional substances for different purposes, as indicated hereinafter.

By way of example are cited here two of the impregnating mixtures:

A. Lime or other compounds of calcium, as stated above, from 40 to 60; stearin, par-

affin or other fatty substances, from 50 to 70; combustible mineral hydrocarbons, from 5 to 20.

B. Lime or other compounds of calcium, as stated above, from 40 to 60; stearin, paraffin or other fatty substances, from 50 to 70; combustible mineral hydrocarbons, from 5 to 20; chlorate of potash, from 5 to 20.

With regard to these mixtures it is remarked: The lime is employed unslaked as it is obtainable in the trade, after having been slaked at the air in such a way that it breaks up and is reduced to powder, and, instead of lime, it can also be employed any other compound of calcium, dolomite not excluded, capable of imparting brightness to the flame. The fatty substances are preferably stearin and paraffin, but also other fatty substances can successfully be employed.

Under the denomination "combustible mineral hydrocarbons" is meant here especially a material locally named Brazilian sun coal, which is a soft and friable rock impregnated with hydrocarbons, but I do not intend to limit my invention to the said special material, as the same can be substituted by any other material having the same qualities. The said Brazilian sun coal can be ground into a powder, and it is capable in such a state of burning easily and producing a lively flame. The combustion of the above mentioned impregnating masses can be rendered still more lively by adding a certain quantity of chlorate of potash, for instance from 5 to 20 parts. If desired, the torch can also be colored by adding suitable coloring substances to the mass.

For preparing the torches the fatty substances are melted in a water-bath and, when they have become completely liquid, the other pulverized ingredients are added, stirring the whole thoroughly, so as to obtain a homogeneous mass. In this melted mass are dipped the fibers of hemp, jute or the like and, after having been drawn out, the said bundle so impregnated with the melted mass is loosely twisted together, drawn through the drawing-plate and then dried, and the torch formed in this way is covered outside with paper *b* (Fig. 2) or other suitable material.

Having now fully described this my invention and how the same is to be carried out, I declare that what I claim is:

1. An illuminating torch comprising a

mass of fibrous material impregnated with a mixture containing 50 to 70 parts of a fatty substance, 40 to 60 parts of a calcium compound and 5 to 20 parts of pulverized Brazilian sun coal.

2. A torch comprising a mass of fibrous material impregnated with a mixture containing 50 to 70 parts of a fatty substance, 40 to 60 parts of lime, and 5 to 20 parts of Brazilian sun coal, and a small quantity of chlorate of potash, said fibrous material being in a compacted form and provided with an outer covering.

3. A torch comprising a mass of fibrous material impregnated with a mixture containing 50 to 70 parts of a fatty substance, 40 to 60 parts of lime, and 5 to 20 parts of Brazilian sun coal, said fibrous material being in a compact form and provided with an outer covering.

In testimony whereof I affix my signature in the presence of two witnesses.

TITO TOCCACELLI.

Witnesses:

ALBERTO CALABI,
LETTERIO LABSCREPO.