

# UNITED STATES PATENT OFFICE.

MICHAEL C. DUFFY AND FRANCIS H. DAVIDS, OF LONDON, ENGLAND,  
ASSIGNORS TO PATENT COMPOSITE FIRE LIGHT COMPANY, (LIMITED),  
OF SAME PLACE.

## IMPROVEMENT IN COMPOSITE FIRE-LIGHTS.

Specification forming part of Letters Patent No. **218,244**, dated August 5, 1879; application filed  
January 22, 1879; patented in England, December 10, 1877.

*To all whom it may concern:*

Be it known that we, MICHAEL CHARLES DUFFY and FRANCIS HOOLE DAVIDS, both of London, England, have invented certain Improvements in Composite Fire-Lights, of which the following is a specification.

This invention consists in improvements introduced in the manufacture of a special composition to be used for lighting fires (termed "fire-lights") or as artificial fuel.

In carrying out our said invention we take sawdust, preferably that from hard wood, or tan, powdered. We employ also tallow or other fatty or oily substances and hair, and well mix the whole. Ground or pulverized resin is then added, and thoroughly mixed with the previously-named ingredients. Heat may also be applied to further assist the admixture and commingling of the resin with the other ingredients, the proportionate quantities which we prefer to employ being in the ratio of four parts of resin to five parts of the total of the several other ingredients first named.

The resultant material, so compounded, is then pressed and molded into the form of cakes or pieces of convenient size and shape, (and which we prefer to call the "compostella" fire-lights,) ready for use either for igniting other fuel or as fuel itself.

The molding or shaping and pressing of the material when compounded we effect by the employment of hydraulic or other pressing apparatus.

We find that a cheap product resulting

from the dyeing and dressing of fur-skins, technically known as "fur - skin - dressers' waste," contains hard-wood sawdust impregnated with oily and resinous matters, and some amount of hair. We reserve to ourselves the right to use this latter substance or material as a substitute for sawdust in the mixture with resin.

In this latter case the proportionate quantities of the other ingredients, (namely, the unctuous or fatty matters and the hair,) as also the mode of incorporating or mixing the same, will depend upon the state or condition of or the properties possessed by the said residual product, or fur-skin-dressers' waste.

Having thus particularly described our said invention, and the manner of carrying out the same, we wish it to be understood that we do not confine ourselves to the exact details herein described, as these may be modified or varied without departing from the main or essential features of our said invention, as hereinbefore described and set forth; but

What we claim is—

1. The combining together of the several ingredients herein named for the production of fire-lights and artificial fuel.

2. The utilization specially, for the purposes herein named, of the residual product, or fur-skin-dressers' waste, herein described.

M. C. DUFFY.

FRANCIS H. DAVIDS.

Witnesses:

GEO. STOWERS,  
S. J. BEST.