

# UNITED STATES PATENT OFFICE.

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## ARTIFICIAL FUEL.

SPECIFICATION forming part of Letters Patent No. 367,015, dated July 19, 1887.

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*To all whom it may concern:*

Be it known that we, GEORGE WANDREY and RUDOLPH J. SCHIMPER, citizens of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have jointly invented a new and useful Improvement in Artificial Fuel, of which the following is a specification.

Our invention relates to a new and useful composition of matter for use as artificial fuel, which we denominate "condensed fuel."

It consists, essentially, in an admixture of certain chemicals with finely-divided carbonaceous material, by preference wood-charcoal, which are retained in a cohesive mass by a suitable binding ingredient, all as hereinafter described, and specifically set forth in the claims.

The object of our invention is the production of an artificial fuel that can be used for various purposes, especially in portable heaters for carriages, sad-irons, and similar vessels supplied with combustion-chambers having no chimney or outwardly-extending draft-stack, hydrogen being supplied by the admixture of strontian with the mass, as hereinafter set forth.

Our condensed fuel has for its base, preferably, finely-divided wood-charcoal, although crushed coke or anthracite coal may be employed in lieu of the charcoal and be fully within the scope of our invention.

We will describe our invention as practiced with one hundred pounds of finely-divided charcoal. With this quantity of pulverized carbonaceous material we intermingle two and a half pounds of strontian and five ounces of alum. The alum retards too rapid combustion of the carbonaceous material. The strontian and alum are first dissolved together and formed into a pasty compound. Into this com-

pound is introduced the quantity hereinbefore set forth of pulverized carbonaceous material, and the several ingredients are thoroughly intermingled with suitable substance as a binder.

We have found by experience that about five pounds of silicate of soda for the quantity of ingredients previously stated is well adapted for the purpose, although we do not desire to limit ourselves to any special substance as a binder for the mass.

When the several ingredients are thoroughly admixed in combination with a suitable binder, the mass is divided into cakes, blocks, balls, bricks, or slabs of any convenient size, and, after being dried, the condensed fuel is ready for use. It will burn without smoke, gas, or odor, and will not become inflammable.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. As a new article of manufacture, a condensed fuel composed of pulverized carbonaceous substance intermingled with strontian and alum and retained cohered by a suitable binding material, as set forth, as and for the purpose intended, substantially as described.

2. The combination of a solution of strontian and alum with finely-divided carbonaceous material retained in a cohesive state by silicate of soda, as and for the purpose intended, substantially as described.

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