

UNITED STATES PATENT OFFICE.

EDWARD L. LIVINGSTONE, OF NEW YORK, AND WILMOT A. VANDERCOOK,
OF BROOKLYN, NEW YORK.

COMPOSITION OF MATTER.

SPECIFICATION forming part of Letters Patent No. 708,774, dated September 9, 1902.

Application filed January 15, 1902. Serial No. 89,877. (No specimens.)

To all whom it may concern:

Be it known that we, EDWARD L. LIVINGSTONE, residing at New York, in the county of New York, and WILMOT A. VANDERCOOK, residing at Brooklyn, in the county of Kings, State of New York, citizens of the United States, have invented a new and useful composition of matter to be used with fuel to aid in the consumption of the gases thereof and to retard the consumption of the fuel itself, of which the following is a specification.

Our composition consists of the following ingredients combined in substantially the proportions as follows: water, twelve hundred and thirty-two gallons; permanganate, (potash, soda, or zinc,) three pounds; chlorid of sodium, seventy-two pounds; peroxid of hydrogen, one pound; dioxid of manganese, one pound. These elements are to be mixed together except with the water, which is not added until ready to use. In practice the permanganate, chlorid of sodium, peroxid of hydrogen, and dioxid of manganese are mixed together and form a powder.

When it is desired to use the compound, an ounce of the powder is added to each gallon of water necessary to well sprinkle the fuel about to be consumed.

In operation the permanganate gives off oxygen, which unites with the carbon in the gas from the fuel not already united with oxygen from the air, thereby adding to the combustion of the gas, increasing the flame, and decreasing the smoke, thus adding largely to the units of heat from fuel. As combustion proceeds chlorin is liberated and prevents the too-rapid oxidation of the permanganate. The dioxid of manganese is slower in its action than the permanganate and will supply oxygen after the oxygen from the permanganate has been consumed. This is a very important element with fuel that gives off its carbon freely or which burns very rapidly. The peroxid of hydrogen during combustion supplies free hydrogen, which, added to the gases of combustion of the fuel, increases the inflammability of the same and prevents their escape up the chimney unconsumed to a great extent.

It will be understood from the above description that the proportions stated will vary according to the fuel with which the compound is to be used and that with certain

classes of fuel either the peroxid of hydrogen or dioxid of manganese, or both, may be omitted.

In practice it has been found that by more perfectly consuming the gases the consumption of the fuel itself is retarded.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. The herein-described composition of matter comprising a permanganate and chlorid of sodium, substantially as and for the purpose specified.

2. The herein-described composition of matter comprising a permanganate, chlorid of sodium, and dioxid of manganese, substantially as and for the purpose specified.

3. The herein-described composition of matter comprising a permanganate, chlorid of sodium, and peroxid of hydrogen, substantially as and for the purpose specified.

4. The herein-described composition of matter comprising a permanganate, chlorid of sodium, peroxid of hydrogen, and dioxid of manganese, substantially as and for the purpose herein specified.

5. The herein-described composition of matter comprising a permanganate, chlorid of sodium, peroxid of hydrogen, dioxid of manganese, and water, substantially as and for the purpose herein specified.

6. The herein-described composition of matter comprising a permanganate, chlorid of sodium, and water, substantially as and for the purpose herein specified.

7. The herein-described composition of matter comprising a permanganate, chlorid of sodium, dioxid of manganese, and water, substantially as and for the purpose herein specified.

8. The herein-described composition of matter comprising a permanganate, chlorid of sodium, peroxid of hydrogen, and water, substantially as and for the purpose herein specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD L. LIVINGSTONE.
WILMOT A. VANDERCOOK.

Witnesses:

G. P. VAN WYE,
HENRY H. LIVINGSTON.