UNITED STATES PATENT OFFICE.

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FUEL AND THE PROCESS OF BURNING THE SAME.

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To all whom it may concern:

Be it known that I, CONRAD FREDERICK SCHRIMPE, a citizen of the United States of America, and resident of Perth Amboy, county of Middlesex, and State of New Jersey, have invented certain new and useful Improvements in Fuel and the Processes of Burning the Same, of which the following is 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.

This invention relates to fuels and the process of burning the same, and the principal object of the invention is to provide a fuel which shall be comparatively light in weight and may be easily packed into briquets or tablets; another object of the invention is to provide a fuel which will produce a high degree of heat for a short length of time and which may be produced at a comparatively low cost and which may be used for example by physicians, campers, tourists, etc. in emergency cases.

I have discovered that I can prepare a fuel having the above mentioned properties by mixing hexamethylentetramin with certain other materials giving a luminous flame and providing a source of oxygen. I cite paraffin or stearic acid as examples of substances giving a luminous flame as they not only give the flame a luminous effect if desired but also may serve as a binder, and potassium permanganate as an example of a substance serving as a source of oxygen.

In carrying out the invention I may use hexamethylentetramin and potassium permanganate for example with or without the addition of a substance giving a luminous effect, such as paraffin, etc., in the proportions as illustrated by the following examples:

1.	Hexamethylentetramin	100 pts.
	Potassium permanganate	20 pts.
2.	Hexamethylentetramin	100 pts.
	Potassium permanganate	20 pts.
	Paraffin	20 pts.

The aforesaid ingredients may be pulverized separately and then carefully mixed to give a homogenous mixture which may easily be brought into a form suitable for combustion. For instance the mixture may be pressed into tablets of any desired shape, of which however, a flat tablet of about $\frac{1}{4}$" thickness is preferable; for improving the conditions of combustion such a tablet may be provided with one or several holes through which the air is admitted to the flame thus facilitating combustion.

The proportions of the various ingredients may be varied within certain limits without affecting the value of the fuel. If, however, the proportion of oxygen-bearing substance be too far reduced, combustion will be stopped by a fine layer of unconsumed carbon which excludes the air from the body of the fuel; under these conditions the formation of gases of unpleasant odor can sometimes be noticed. But if the mixture of oxygen-bearing substance is properly carried out, none of these difficulties occur.

It is of course understood that potassium permanganate may be entirely or partly substituted by other oxygen-bearing substances as, for instance, the oxids or peroxids of the heavy metals or the nitrates of the alkali metals, which react with the hexamethylentetramin in the desired way.

Finally I wish to state that paraffin may be conveniently substituted by similar solid combustible substances, especially those burning with a luminous flame, as for instance by a solid hydrocarbon of the aliphatic or aromatic series, or by the materials usually applied in the manufacture of candles, of which especially stearic acid comes into consideration whenever it can compete in price with paraffin.

I claim:

1. A fuel containing hexamethylentetramin and a source of oxygen.

2. A fuel containing hexamethylentetramin, a source of oxygen and a substance giving a luminous flame.

3. A fuel containing hexamethylentetramin and potassium permanganate.

4. A fuel containing hexamethylentetramin, potassium permanganate and a substance giving a luminous flame.

5. A fuel containing hexamethylentetramin, potassium permanganate and paraffin.

6. A fuel containing approximately 100 parts by weight of hexamethylentetramin, 20 parts of potassium permanganate and 20 parts of paraffin.

7. A fuel containing approximately 100 parts by weight of hexamethylentetramin, 20 parts of a substance capable of slowly

giving off oxygen to the hexamethylentetramin and 20 parts of a solid substance burning with a luminous flame.

8. A fuel containing hexamethylentetramin, a substance capable of slowly giving off oxygen to the hexamethylentetramin and a solid hydrocarbon.

9. In the process of burning a fuel containing hexamethylentetramin, slowly liberating oxygen to prevent the formation of disagreeable gases.

10. In the process of burning a fuel containing hexamethylentetramin and potassium permanganate, slowly liberating oxygen to prevent the formation of disagreeable gases.

11. In the process of burning a fuel containing hexamethylentetramin, slowly liberating oxygen to prevent the formation of disagreeable gases, in the presence of a substance giving a luminous flame.

12. In the process of burning a fuel containing hexamethylentetramin, liberating oxygen in the presence of a substance giving a luminous flame.

13. In the process of burning a fuel containing hexamethylentetramin, liberating oxygen in the presence of the hexamethylentetramin.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CONRAD FREDERICK SCHRIMPE.

Witnesses:

MARION E. SULLIVAN,

OTTO K. ZWINGENBERGER.