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PREPARED FIRE KINDLER

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Fig. 3.

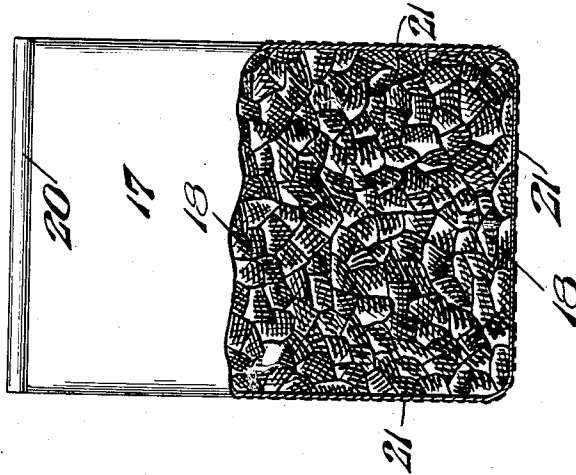


Fig. 2.

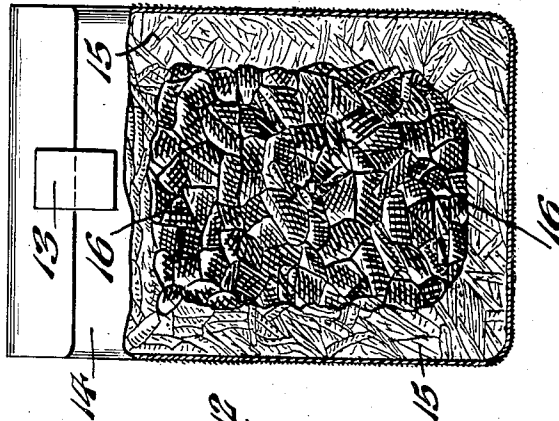
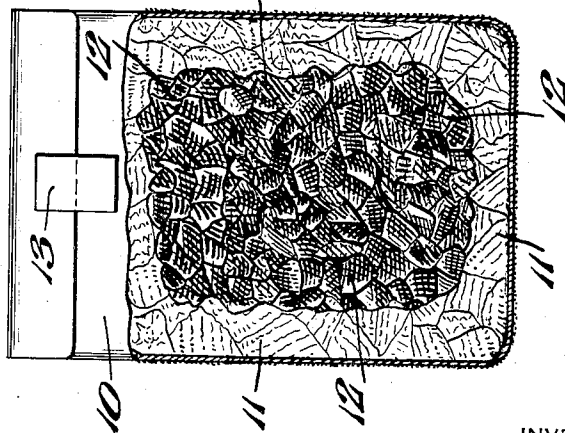


Fig. 1.



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PREPARED FIRE KINDLER

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1 Claim. (Cl. 44-40)

The present invention relates to the ignition of combustible material and more particularly to a prepared package for starting or kindling a fire.

Some of the objects of the present invention are to provide a new and improved kindler; to provide a kindler for quickly and effectively starting a fire in either a mechanical or natural draft heater; to provide a kindler wherein the rate and manner of ignition can be varied according to requirements; to provide a kindler which is not only cheap to prepare and market but can be handled easily and without danger to the user; to provide a kindler in the form of a compact, light container of combustible material so treated chemically that its rate of burning is predetermined and which serves to hold readily combustible material designed to ignite a bed of fuel in contact therewith; and to provide other improvements as will hereinafter appear.

In the accompanying drawing Fig. 1 represents a front elevation, in part section, of a kindler embodying one form of the present invention; Fig. 2 represents a front elevation, in part section, of a kindler embodying a modified form of the invention, and Fig. 3 represents a front elevation, in part section, of a kindler embodying another form of the invention.

Referring to the drawing one form of the present invention is shown in Figure 1, wherein the package kindler consists of a bag 10 of paper, such for example as brown kraft paper, though it may be of any suitable relatively quick burning material, of a convenient size for handling and having a capacity such as will ensure a sufficient content for ignition purposes. It has been found that a standard size #2 gives satisfactory and efficient results. For mechanical draft use, for example igniting coal in the retort of a stoker, the material of the bag 10 is impregnated with a chemical, rendering it relatively slow burning with flameless combustion, potassium nitrate being the preferred material though other chemicals, such as sodium nitrate, ammonium nitrate, potassium chlorate, sodium chlorate, and potassium permanganate, either alone or mixed may be used with fair results without departing from the invention. Impregnation of the bag in the present instance ensures a combustion sufficiently slow to enable the user to light the kindler outside of the furnace, while held in the hand, after which it may be placed in the fuel bed without danger of injury or the necessity for undue haste. This also maintains a tenacious combustion in the bag or wrapper until the contents are well ignited.

The bag 10 forms a receptacle for a quantity of paper 11, such for example as shredded newspaper or like material cut or torn into small pieces. Preferably less than two ounces of this paper 11 is placed in the bag 10 in such a manner as to leave a cavity in the approximate center thereof. This cavity is filled with about two and one half ounces of suitably sized charcoal 12, one half to one inch pieces being preferred. When thus assembled with the charcoal 12 encompassed by the paper 11, the sides forming the mouth of the bag 10 are folded back one over the other to close the mouth and are then sealed in closed position by a gummed strip 13 or the like.

In the form of the invention shown in Figure 2, a bag 16 formed of paper, also preferably of brown kraft, but of larger size than that shown in Figure 1, say for example standard size #6. This form of the invention is more particularly for use with natural draft and to that end it is desirable that the rate of combustion be increased over that required for forced draft firing. Therefore the material of the bag 16 is impregnated with paraffin as the preferred chemical, though the invention is not so limited. The contents of the bag 16 weigh approximately fourteen ounces and consist of about twenty-five per cent pine chips, pine knots, or shavings 15 soaked in pine oil, plus about seventy-five per cent charcoal 16, this latter being preferably, but not necessarily, segregated in the central portion of the wood kindling.

In the form of the invention shown in Figure 3, a bag or container 17 of paper or other suitable combustible material envelopes a body of charcoal 18, which is sealed therein by closing the mouth flaps 20 of the bag in any approved manner. For hand fired natural draft equipment the conditions to be met are quite different from those of forced draft equipment in that a quick high temperature is necessary and yet one which lasts long enough to permanently ignite the fuel with which the heater is heated. In solving this problem the present invention includes the use of paraffine 21 as a coating or impregnating means for the bag 17, and pine oil as a quick and lasting firing means for the charcoal 18. The percentage of pine oil to the quantity of charcoal is relatively small since it is undesirable to saturate the charcoal. About ten per cent has been found to give very excellent results and it is applied by emptying this relatively small quantity of fluid into the bag 17 and upon the charcoal 18. The latter, by reason of its porosity, absorbs

the oil rather equally throughout the mass with the result that ignition is quite instantaneous but continues relatively slowly, producing a high state of incandescence in the charcoal for such a period of time as will ensure the contacting coal or other fuel being ignited for permanent burning under natural draft.

It will now be apparent that a novel compact kindler has been devised which is easy to handle, safe to handle, and effective for the purpose intended. Furthermore by reason of a selective impregnating agent it is possible to obtain a rate of combustion which in effect matches the type of heater with which it is to be used, namely a forced draft type or one having natural draft.

While three forms are shown in which this invention may be embodied, it is to be understood that the invention is not limited to the specific substances recited as preferred but might be applied to various forms without departing from the spirit of the invention or the scope of the appended claim.

Having thus described my invention, I claim:

A kindler adapted for ignition of the fuel bed of automatic stokers consisting of a core of charcoal aggregates arranged to present a large surface area with interspersed air spaces, a surrounding mass of shredded combustible material having a higher rate of combustion than the charcoal core but so proportioned and compacted with respect thereto to progressively ignite the same in use, a paper container, and a combustion controlling chemical selected from a group consisting of the alkali metal nitrates, chlorates and permanganates incorporated in said container to maintain a flameless progressive ignition at a lower rate than the shredded combustible material ignited thereby to permit hand ignition of the kindler and safe deposition of the same on a stoker fuel bed, said chemical under forced draft igniting the combustible material whereby the charcoal aggregates and the fuel bed are successively ignited.

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