

UNITED STATES PATENT OFFICE.

EMIL GUMPOLDT, OF MUNICH, GERMANY.

BURNING COMPOUND AND METHOD OF COMPOUNDING SAME.

SPECIFICATION forming part of Letters Patent No. 616,838, dated December 27, 1898.

Application filed July 6, 1898. Serial No. 685,234. (No specimens.)

To all whom it may concern:

Be it known that I, EMIL GUMPOLDT, dentist, of 20 Herrenstrasse, Munich, Kingdom of Bavaria, Empire of Germany, have invented a certain new and useful Burning Compound and Method of Compounding the Same, of which the following is a full, clear, and exact description.

It is a well-known fact that the use of alcohol or spirits of wine in the fluid state is attended with considerable danger of explosion; also, that there is usually considerable waste by evaporation, spilling, &c.; also, that the transportation and special storage of such fluids is inconvenient, necessitating the employment and care of receptacles separate from the lamps or other vessels in which they are burned or used.

The object of my invention is to transform such burning fluids into a solid or semisolid state, in which form they may be stored in the lamp or receptacle in which they are burned or used in condition for instant use at any and all times without the need of refilling the same each time it is so used, and in which form all danger from explosions is avoided.

In carrying my invention into effect I first take the alcohol or spirits of wine and heat the same to about the boiling-point. I then add eighteen parts, by weight, of some saponaceous material, and for this purpose I have found that what is commonly known in Germany as "grain-soap" (German, *kernseife*)—for which see *Manual of Chemical Technology*, Wagner, lines 912 and 914—gives the best results, and slowly heat this with the alcohol, constantly agitating or stirring until the grain-soap is thoroughly dissolved. To the resulting mixture I then add a hardening or binding material, and for this purpose I have found that shellac is preferable and that two parts, by weight, are sufficient. This, being added to the mixture, is thoroughly stirred while heated until all the ingredients are thoroughly incorporated. It will be understood that the eighteen parts of saponaceous material and the two parts of shellac are used with one hundred parts of the alcohol. The resulting compound may then be drawn off into the lamps or other receptacles in which it is to be used and set to one side and allowed

to harden, which it will do at atmospheric temperature.

The burning compound so constructed is a solid or semisolid material which will burn readily upon being ignited with a match and which will continue to burn until extinguished or until all of the burning material in the lamp is consumed. I believe that this compound will give a hotter flame than will the alcohol or other fluid forming the principal ingredient of the compound.

The burning compound may be readily extinguished and in the same manner as burning alcohol—i. e., by blowing it out or by a suitable cap or extinguisher. When the flame is thus extinguished, the lamp or other receptacle in which it is used may be set aside, and the compound upon cooling will again become hardened and solid or semisolid.

If desired, the compound instead of being drawn off into lamps, stoves, &c., immediately after it is made may be drawn off into other vessels for storage purposes and may be kept in this way as long as desired. When it is desired for use, a moderate heating of the storage vessel will reduce the burning compound to a fluid state, when it may be drawn off into lamps, stoves, &c., or it may be taken out of the storage vessel and put into the lamps or stoves while it is in its solid or semisolid state, if preferred.

The advantages of my improved burning compound are numerous. Among its principal advantages are the fact that the compound in its hardened and solid or semisolid form cannot explode, that it is entirely harmless, may be transported from place to place conveniently, may be stored in the very lamp or stove in which it is to be used, thus doing away with the necessity of additional storage-receptacles, is ready for instant use, may be used again and again without refilling or replenishing, &c.

This compound may be used for any of the purposes for which alcohol, spirits of wine, or other burning fluids are now employed—as, for example, spirit lamps and stoves, spirit-boilers, pocket apparatus for heating irons for curling or singeing of the hair, &c.

It should be understood that I do not confine myself to the precise proportions which I have named for making the compound, as

these proportions may be varied greatly without departing from the spirit of my invention. I may use as the saponaceous material castile or some pure tallow soap.

5 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A substantially solid burning compound consisting of alcohol, a saponaceous, and a
10 hardening material in the proportions, substantially as described and set forth.

2. A substantially solid burning composition consisting of alcohol as its base, emulsified by the addition of saponaceous material,
15 and hardened with shellac, in the proportions, substantially as set forth.

3. The method of producing such a burning compound as described, consisting of heating the alcohol to about the boiling-point, adding
20 a saponaceous material and agitating the mass

to form an emulsion, and then adding a hardening or binding material, and allowing the compound to cool and harden to a substantially solid form, the said ingredients being
in the proportions, substantially as described. 25

4. A burning compound produced by the addition of grain-soap to a burning fluid heated to or about the boiling-point, agitating the emulsion thus formed, and adding
shellac, and allowing the resulting compound
30 to cool and harden, to a substantially solid form, the said ingredients being in the proportions, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EMIL GUANOLDT.

Witnesses:

M. SALOMON,

HARRY BELMONT.