This invention relates to a composition of matter and more particularly to fire extinguishing material adapted to be used in the form of a dry powder.

It is an object of this invention to provide means for preventing the normal tendency of certain materials, such as salts and other chemicals, to cake and lump up on standing, particularly materials that are ordinarily packaged in sifter top containers and on that account or for other reasons should possess freely flowing properties.

As described in the co-pending application of Lodiex J. Dugas, Ser. No. 290,621, filed September 9, 1927, the use of a dry fire extinguishing material such as sodium bicarbonate in connection with a gas under pressure for discharging the material, presents certain advantages over the usual type of liquid extinguishers. Sodium bicarbonate, however, has some tendency to take up moisture from the air and to cake when left in the container for considerable periods of time, and for this reason its use is not entirely satisfactory.

It is therefore a further object of this invention to provide a fire extinguisher powder comprised largely of sodium bicarbonate and containing a substance adapted to prevent caking of the bicarbonate and to render it substantially water repellent, so that the powder will flow readily under any conditions of atmospheric humidity.

Other and further objects of this invention will become apparent from the following description and appended claims.

I have now found that the addition of salts of fatty acids to materials having hygroscopic properties or having a tendency to cake upon standing, renders the material practically incapable of absorbing moisture and caking. In fact, if a small quantity of a metallic stearate is intimately mixed with sodium bicarbonate powder, for example, water may be poured directly upon the mixture without apparently wetting the powder and without any appreciable solvent action. Although any of the metallic stearates such as zinc or aluminum may be employed, I prefer to use magnesium stearate. It will be understood, however, that the corresponding oleates or palmitates may be used with very satisfactory results, and that the use of these salts of fatty acids for this purpose is widely applicable in the case of many materials and chemicals other than sodium bicarbonate.

In preparing a satisfactory fire extinguishing powder, I prefer to mix with the bicarbonate containing a fatty acid salt, a small quantity of tricalcium phosphate, which has in some degree the property of causing the mixture to pour readily even in moist weather, and a small amount of light magnesium carbonate to increase the bulk of the mixture.

As an example of a satisfactory composition of my fire extinguishing powder, the following analysis is given:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>97%</td>
</tr>
<tr>
<td>Magnesium stearate</td>
<td>11/2%</td>
</tr>
<tr>
<td>Magnesium carbonate</td>
<td>7%</td>
</tr>
<tr>
<td>Tricalcium phosphate</td>
<td>1/2%</td>
</tr>
</tbody>
</table>

Obviously, the percentage of the various ingredients may be varied considerably, and in some instances the magnesium carbonate and tricalcium phosphate may be omitted if desired. I have found, however, that if a composition such as above given is employed for fire extinguishing purposes, no trouble will be experienced from the sodium bicarbonate caking up in the container. Under all conditions of humidity, the prepared composition remains perfectly dry and may be poured or forced through small apertures without clogging up.

Similarly, addition of small quantities of a metallic stearate, or other fatty acid salt, to various other materials and chemicals, such for instance as common salt, substantially prevents all tendency of the materials to absorb moisture and cake up. Wherever the materials must have freely flowing properties in order to be satisfactory to the trade, my invention is in general applicable.

I am aware that numerous details may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.
I claim as my invention:

1. A composition of matter, comprising a material normally having a tendency to cake on standing and a metallic salt of a fatty acid adapted to render such material substantially non-caking.

2. A composition of matter, comprising a material normally having a tendency to take up moisture and cake on standing and a relatively small quantity of a metallic stearate adapted to prevent such tendency.

3. The method of eliminating the tendency of certain materials to cake, which comprise adding to such materials a relatively small quantity of a metallic salt of a fatty acid.

4. The method of eliminating the tendency of certain materials to cake, which comprises adding to such materials a relatively small quantity of a metallic stearate, thereby imparting freely flowing properties to said materials.

5. Fire extinguishing material, comprising principally dry sodium bicarbonate and a relatively small amount of a metal salt of a fatty acid adapted to render the bicarbonate water repellant and non-caking.

6. Fire extinguishing material, comprising principally dry sodium bicarbonate and a relatively small amount of a metal salt of stearic acid adapted to render the bicarbonate water repellant and non-caking.

7. Fire extinguishing material, comprising principally dry sodium bicarbonate and a relatively small amount of magnesium stearate adapted to render the bicarbonate water repellant and non-caking.

8. A non-caking, dry fire extinguishing material, comprising sodium bicarbonate, tri-calcium phosphate and magnesium stearate.

9. A non-caking dry fire extinguishing material, comprising approximately 97% sodium bicarbonate, 1.5% magnesium stearate, 1% magnesium carbonate and 1/2% tri-calcium phosphate.

10. Fire extinguishing material characterized by its non-caking, freely flowing properties under varying conditions of humidity, comprising a powdered mixture of a carbon dioxide generating salt and a water insoluble soap having water repellant properties.

11. Fire extinguishing material comprising principally a salt that decomposes when heated to liberate carbon dioxide and a relatively small proportion of a water insoluble soap, the material being a finely powdered freely flowing mixture having water repellant properties.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Ill.

D. JULIAN BLOCK.