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FIRE EXTINGUISHING POWDER

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2 Claims. (Cl. 252—7)

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This invention relates to a fire extinguishing composition adapted to be projected upon fires, as from a so-called dry powder extinguisher. The common practice has been, and for obvious reasons, to use a suitable, finely-divided powder which is both readily available and of low cost; and of the powders which have been proposed for the purpose, and with which the utility of the invention is herein specifically exemplified, the one in most common use is sodium bicarbonate.

The present invention is predicated on the discovery that the characteristics of the sodium bicarbonate for fire-fighting purposes can be vastly improved, at relatively low cost, by the admixture of a minor proportion of silica aerogel of a particle size commensurate with that of the sodium bicarbonate.

In the preferred application of the invention, a fine particle size sodium bicarbonate is used, namely, capable of passing a 200 mesh screen, the silica aerogel being of about the same order of particle size. Such a mixture has the advantage that it is quite stable, in the sense that it does not exhibit any substantial tendency to separate into its components when agitated, as during shipment or other normal handling. The importance of this factor in the fire-extinguisher art is self-evident.

The amount of silica aerogel required to be used is not critical, but it has been found that excellent results are obtained by its use in amounts ranging from about .5% to 1.5% by weight of the bicarbonate. A lesser amount than .5% results in some loss of efficacy and a larger amount than 1.5% merely adds to the cost without any apparent improvement.

It has been found that the fire-fighting qualities of the described mixture are markedly superior to those of the sodium bicarbonate alone, in sundry respects. For example, the aerogel addition promotes a better dispersion of the bicarbonate particles over the burning surface. When discharged from a suitable container, as under gas pressure, which is the usual method, the mixture emerges in a uniformly dense cloud which is highly effective for fire extinguishing purposes. Apparently, this results from the fact that the mixture, prior to discharge, is devoid of such agglomerations as normally would be present in the sodium bicarbonate alone; and, in consequence, the particles are ejected much more uniformly, both as to velocity and range. Also, the silica aerogel, being slightly hygroscopic, tends to remove such surface moisture from the sodium bicarbonate as is apt to be present in varying amount, depending upon the season and other conditions.

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The following is claimed:

1. A fire extinguishing powder consisting essentially of a mixture of finely divided sodium bicarbonate and silica aerogel, both compounds having a particle size of about 200 mesh, the proportion of silica aerogel being about .5% to 1.5% by weight of the sodium bicarbonate.

2. A fire extinguishing powder consisting essentially of sodium bicarbonate and silica aerogel, both compounds having substantially the same particle size and the proportion of silica aerogel being about .5% to 1.5% by weight of the sodium bicarbonate.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,792,826	Dugas	Feb. 17, 1931
1,909,557	Van Hasselt	May 16, 1933
2,188,007	Kistler	Jan. 23, 1940
2,207,737	Hooft	July 16, 1940
2,322,781	Hanks	June 29, 1943