To all whom it may concern:

Be it known that I, HENRY STAER, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Match-Head or Similar Compositions, of which the following is a specification.

My invention relates to compositions for matches, fuses, fulminating compositions or pyrotechnical preparations and the like, and more particularly to a new and improved binder or agglutinant for the several active ingredients of such preparations.

As binders or agglutinants for match compositions or similar preparations, solutions of glue, gums, dextrin and the like have been used herefore.

An object of my invention is to provide a new and improved binder or agglutinant for match compositions or similar preparations, which imparts to the finished product a high degree of resistance against dampness and moisture and a greater hardness than is produced by binders now used for this purpose.

Another object of my invention is to make possible the carrying out of the several operations, comprising the preparation of the compositions and the applications of the same, at a relatively high temperature.

The object of my invention is attained by using, as the binder or agglutinant for match head or similar compositions, a variety of treated starch known as “Feculose” in the trade. I use this Feculose, (made by known methods), by heating or boiling it with a suitable quantity, such as 2-3 parts, of water so as to produce an aqueous paste, and thereupon incorporating into the same the active principles and fillers as desired. It is best to cool the Feculose paste, after which I add thereto the active principles, such as potassium chlorate, phosphorus, sulfur, and phosphorus sesquisulfid; fillers, such as powdered glass, coloring matter, oxid of zinc, and other inert substances may be added in suitable proportions if desired. I also may use other binders or agglutinants, such as animal or vegetable glue, gums, dextrin or the like by mixing the same with the starch binder or adding them to the finished composition.

The Feculose which I use as a binder in match head or similar compositions is on the market and sold under the trade mark name of Feculose. It may be manufactured by the process described in the Journal of the Society of Chemical Industry, 1900, page 239.

Matched provided with heads made from the composition such as described resist dampness and moisture better, and the heads are harder and adhere better than those made from compositions prepared by means of the ordinary binders. The mixture, when prepared, does not necessarily need to be used immediately, but may be softened again, if it should become stiff or hard, by adding a suitable amount of water and grinding it once more. It has been found necessary in the preparation of match compositions and in applying the same, to work at an air temperature which does not exceed 85° F., because the matches have a tendency to explode violently and be thrown about in small fragments, when lighted, if higher temperatures than the aforesaid prevail during the manufacturing operations. When using my new and improved starch binder, this disadvantage is entirely avoided, the matches burning quietly and without disintegration, even when higher temperatures have prevailed during the manufacture.

I do not desire to limit myself to the use of my improved binder or agglutinant in match compositions, but wish to include within the scope of my invention the use of said binder in all compositions and preparations of a like and similar character, especially in all preparations requiring the incorporation of explosive substances or fulminants, such as fuses, fulminating caps or pyrotechnical products.

Having fully described my invention, what I claim and desire to protect by Letters Patent is as follows:

1. A composition of matter for making matches and for similar purposes, compris-
ing combustible and flaming materials, an oxygen carrying material and a binder comprising an aqueous paste of Feculose.

2. A composition of matter for making matches and for similar purposes, comprising potassium chlorate, sulfid of phosphorus, and a binder comprising an aqueous paste of Feculose.

Signed at New York, in the county of New York and State of New York this 16th 10 day of March A. D. 1915.

HENRY STAIER.

Witnesses:
S. B. SONNENFELD,
ARTHUR WORISLEK.