UNITED STATES PATENT OFFICE.

HENRI SÉVÈNE AND EMILE DAVID CAHEN, OF PARIS, FRANCE.

MATCH COMPOSITION.

SPECIFICATION forming part of Letters Patent No. 614,350, dated November 15, 1898.

Application filed July 19, 1898. Serial No. 686,357. (No specimens.)

To all whom it may concern:

Be it known that we, HENRI SÉVÈNE and EMILE DAVID CAHEN, citizens of the Republic of France, residing at Paris, France, have invented Inflammable Paste for the Manufacture of Matches, of which the following is a specification.

Experience shows that matches that are sensitive at all their surfaces and are capable of being easily transported can be manufactured by employing mixed pastes containing a mixture of white phosphorus and an oxidizing body such as chlorate of potash, bichromate of potash, and the oxids of lead or of manganese; but these pastes present from the point of view of hygiene well-known inconveniences.

We have tried to substitute for white phosphorus in the mixed pastes a body which, while being harmless to the health of the workpeople, might enjoy its essential properties of possessing a definite chemical composition and being easily inflammable. The sesquisulfid of phosphorus (P_4S_3) fulfils these prime conditions. Moreover, it offers a sufficient resistance to moisture and to atmospheric agents. It can be manufactured industrially and obtained in the state of purity by distillation. The matches manufactured with mixed pastes containing this sesquisulfid, oxidizing bodies, inert matters, and glues are satisfactory and can furnish all the degrees of sensitiveness desired by slight variations in the relative proportions in which the materials are used. We will give by way of example the following composition: sesquisulfid of phosphorus, ninety grams; chlorate of potash, two hundred grams; peroxid of iron, one hundred and ten grams; zinc-white, seventy grams; powdered glass, one hundred and forty grams; glue, one hundred grams; water, two hundred and ninety grams.

We are aware that efforts have often been made to employ in the preparation of mixed pastes for matches a mixture of amorphous phosphorus and sulfur either in powder or in the state of fushion; but these mixtures do not answer the purpose sought. They differ essentially from the sesquisulfid of phosphorus that we employ in that this last body is a perfectly definite composition that is very stable, resists moisture, as well as the atmospheric agents, and can easily be utilized and manipulated industrially.

We claim—

1. Inflammable material for matches having as an essential ingredient sesquisulfid of phosphorus, substantially as described.

2. Inflammable material for matches, composed of sesquisulfid of phosphorus, oxidizing bodies, inert matter and glue, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HENRI SÉVÈNE.
EMILE DAVID CAHEN.

Witnesses:
CHARLES DOUY,
EDWARD P. MACLEAN.