

UNITED STATES PATENT OFFICE.

CHARLES ALFRED CARLES DE CAUDEMBERG, OF NICE, FRANCE.

PROCESS FOR AGGLOMERATING FIBROUS SUBSTANCES.

No. 837,193.

Specification of Letters Patent.

Patented Nov. 27, 1906.

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To all whom it may concern:

Be it known that I, CHARLES ALFRED CARLES DE CAUDEMBERG, doctor of medicine, a citizen of the French Republic, residing at Nice, Alpes Maritimes, France, have invented certain new and useful Improvements in Processes for Agglomerating Fibrous Substances, of which the following is a specification.

10 This invention has for its object to agglomerate fibrous substances, which may be either mineral ones, as peat, asbestos, or the like, or vegetable ones, as cotton, linen, hemp, or the like, or animal ones, as horsehair, wool, hair, 15 or the like, by means of a peculiar agglutinative substance.

This invention is based on the following observation: If fibrous substances are imbibed with a solution of weak percentage of bitumen and india-rubber, and if the mass 20 thus obtained is immersed in a sulfured solution of high percentage, this mass rapidly agglomerates and hardens under the influence of the vulcanization.

25 In practice the fibrous substances which are to be agglomerated are first prepared in the form adapted to their destination by being crushed, compressed, or disposed into molds. They are then imbibed with a solution of bitumen and india-rubber in a suitable solvent—for instance, heavy benzin. 30 This solution is made in the proportions of two to five per cent. of bitumen and two to five per cent. of india-rubber. Between these limits the proportions of bitumen and india-rubber may be varied, the percentage of bitumen being increased if more hardness is required and the percentage of india-rubber being increased for obtaining more elasticity. 35 The excess of liquid is squeezed out by means of a light pressure. The substances thus impregnated are dipped into a bath of carbon sulfid containing five to ten per cent. of sulfur protochlorid. The duration of the

40 of sulfur protochlorid. The duration of the process varies with the thickness of the

closed vessel provided with a pump for first producing the vacuum and after increasing the pressure. The absorption is thus more speedy and more complete, and the results are more homogeneous. When it is taken out from the second bath, the agglutinated mass remains malleable during a certain time, and thus it can be rolled, compressed, or molded in various forms. The heat accelerates and increases the hardening.

The agglomerated substances thus obtained have peculiar properties. Having the same density as the lightest wood, they have the hardness of the most compact bodies. Their resistance to the crushing by shock or by pressure is considerable. They are unassailable by the acids or by the oxidizing substances. They are water-proof and unflammable. They are not spoiled at the extremes of the surrounding temperature. Their industrial uses derive obviously from the properties hereinbefore described.

Having thus described and ascertained the nature of my invention and in what manner the same may be performed, I declare that what I claim is—

1. A process for agglomerating fibrous substances consisting in impregnating these substances with a solution containing two to five per cent. of bitumen and two to five per cent. of india-rubber and in dipping the mass thus obtained in a bath of carbon sulfid containing five to ten per cent. of sulfur protochlorid, substantially as described.

2. A process for agglomerating fibrous substances consisting in impregnating the substances with a solution containing bitumen and india-rubber, and then subjecting the material to a bath of carbon sulfid containing sulfur protochlorid.

In testimony whereof I have signed my hand in presence of witnesses.

CHARLES ALFRED CARLES DE CAUDEMBERG
Witnesses:

CHARLES EMILE
TIRECHE JEAN