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ALBERT C. FISCHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PHILIP CAREY MANUFACTURING COMPANY, A CORPORATION OF OHIO

CONSTRUCTIONAL MATERIAL

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This invention relates to constructional material, such as, roofing material, insulating material, tapes, shingles, packing and the like.

The object of my present invention is to provide such constructional materials with an adhesive coating which is normally sticky or tacky to the touch and which lastingly maintains this mastic condition whereby the material may be packed and stored for long periods of time without losing its tackiness and may be transported to its place of installation and used in such tacky condition without further treatment.

A further object of my invention resides in the application of this normally lastingly adhesive, sticky to the touch, to sheets or strips of carrier material, hereinafter called vehicles, so that when rolled into package form or placed face to face in contact with a similar sheet for packing and storing and transportation, they may be unrolled or pulled apart readily without tearing or damaging, and can be installed in tacky condition; in this instance the tacky coating permits the facile separation of the contacting vehicle surfaces, the line of cleavage passing through the mastic itself. The vehicle thus provided with a lasting adhesive, mastic coating is particularly adapted to act as a packing for various types of installation, not only because of the waterproofing quality of the mastic but also because of its pronounced and lasting quality of adhesiveness and further because of its plasticity.

This invention relates to first saturating the vehicles with oils, and other saturants set forth in paragraphs 1^a to 1^e of my Patent No. 1,550,310, and then coating one or both sides of the saturated vehicle with a bituminous coating, which ordinarily would not adhere except on continued pressure under heat or special treatment at time of laying, the melting of bituminous matter would not develop adhesiveness below 80°, but which might develop adhesiveness above that point, making it impossible to separate the sheets except for dusting or completely squeezing out excess matters.

My invention relates to omitting the dust and coating the previously coated surface with a slow-drying, tacky adhesive substance of a bituminous nature, after the first coating has become chilled.

One of the formulas adapted for this purpose is the commercial product on the market known as Tree-tangle Foot, which has been on the market for approximately fifteen years and which is compounded of resin, vegetable oils, non-drying oils and other gummy substances. Other coatings which will answer the same purpose are described as follows:

(a) With a non-drying oil, such as, cotton-seed oil, rapeseed oil, castor oil etc., acting as a mastic waterproofing filler of the vehicle. It may also form a slow junction with a coating of bituminous or vegetable matter fluxed with oils that will unite with the vehicle filler or with mineral oils which will not unite with the vehicle saturant. The tendency being to keep the coating in a thoroughly mastic state where the substances will unite and a pliable state where they will not unite. Castor oil may be used as the saturant where non-union with mineral oil is preferred, the coating may be a high melting point bituminous or vegetable substance with mineral oils, or the coating may be any combination or flux, mineral, vegetable or animal oils.

(b) The saturant may be the combination of a bituminous substance and a vegetable oil heated and combined at high temperature producing a viscous saturant. Gilsonite, Texas or other high melting bituminous substances may be used in varying proportions from 10 to 20 per cent, and a viscous oil, such as castor, where union with other oils is not desirable 80 to 90 per cent. If a blown castor oil is used the proportions may be as high as 5 per cent bitumen, gilsonite, Texas or Trinidad and 95 per cent blown castor oil. It may be necessary in some cases to heat under pressure in order to secure union.

(c) Where union with other oils is desired this formula may be bitumen 15 per cent, castor oil 75 per cent, rape oil 10 per cent, united by gradual heating. This formula will unite with other mineral oils where present.

(d) This saturant may also be a single vegetable or bituminous adhesive, such as,

cotton-seed, Foot's pitch or road oil, sludges and semi-liquid, bituminous substances of varying consistencies, such saturants, where treated with an overcoating of a viscous vegetable or combination vegetable and bituminous adhesive will be separable along the lines of such coating.

(e) Drying oils, preferably blown, may be used as the saturant and coated with any of the adhesive, bituminous or vegetable coatings, or drying oils may be mixed with non-drying oils—a formula for the first would be blown soya bean or China wood oil—the second linseed and neat's foot, castor etc., 50 per cent each or in varying quantities.

(f) The saturant may be a mastic of 80 per cent kerosene and 20 per cent bitumen, the vehicle when saturated, coated with a viscous oil such as castor, in a combination which will not unite with mineral oils, or other coating or saturant may be utilized.

Higher volatile oils may be used, as naphtha, turpentine, etc. The use of these saturants is especially suitable for roofing tapes and other purposes where a soft pliable body is desired.

(g) The vehicle may be saturated as heretofore and squeezed to create a dry, non-tacky surface.

The action of this coating is to remain inert, and while some of the oil may be absorbed by the chilled coating, sufficient will remain so that the surface of the sheet or sheets may be readily separated after a period of months and used for various roofing purposes.

Alternatively, I may omit the dust, as set forth above, and coat the under-surface with a viscous, oily adhesive repellant, which later becomes tacky or adhesive; blown castor oil, silicate of soda are adhesive repellants which when set develop adhesiveness.

In the present invention the vehicle may consist of sheets, strips, or shapes of tar paper, felt, fabric, fibers or other preferred material.

The outer coating with which the saturated and coated vehicle is coated on either one or both sides preferably comprises a slow-drying, tacky bituminous, vegetable or animal substance or combination of two or more, which approximates the following specifications, or may be more or less fluid.

(1) The consistency at 77° F. should be below 7.0.

(2) The susceptibility factor should be as low as possible, preferably under 25.

(3) The ductility at 77° F. should be as high as possible and preferably over 25 centimeters.

(4) Fusing point by K & S method should be between 80° and 100 degrees F.

(5) It should appear tacky and adhesive at normal temperature and retain this property as long as possible on exposure to air.

This formula is merely a standard and other formulas more or less fluid may be used with or without a suitable filler as a flow retarder, or the flow tendency may be stopped by using a non-flowing gunny substance in combination.

It will be understood that my invention contemplates constructional material, the adhesiveness of which serves to hold said material in place in distinction to other materials which involve the use of pitch, or other material, mopped on at the time of assembling the material. This is especially true in the application of the invention to roofing sheets, for the purpose of holding the sheets of roofing material in place. It will be understood that after two sheets of building material according to the present invention have been separated, the adhesive surface of one sheet will be placed in contact with the non-adhesive surface of another sheet. The adhesive or mastic will cause a union with non-adhesive surfaces to which it is applied, which union may be made very excellent by means of rolling and which will improve in the course of time.

It will also be understood that if it should be found that the adhesive surface of a sheet should become dried out, a solvent such as toluol, benzol, kerosene, or cotton oil, may be used to bring the sheet back into adhesive state.

The subject matter of this application has been withdrawn from my prior patent, No. 1,550,310, issued August 18, 1925.

I claim:

1. Constructional material comprising a saturated vehicle coated with a waterproofing coating having the characteristics of being normally non-adhesive, except on continued pressure under heat, and not developing adhesiveness at melting below 80° F., but which is capable of developing adhesiveness above such point, and overcoating said first mentioned coating with a normally lasting adhesive of slow-drying nature and tacky to the touch.

2. The method of preparing constructional material which comprises saturating a vehicle, coating the same with a waterproofing coating which does not adhere except on continued pressure under heat or special treatment, the melting of which does not develop adhesiveness below 80° F. but which is capable of developing adhesiveness above that point, permitting such coating to chill and thereafter coating the chilled coating with a slow-drying, lastingly adhesive mastic which is normally tacky to the touch.

3. The method of preparing constructional material which comprises saturating a vehicle with a non-drying oil, coating the saturated vehicle with a bituminous substance which ordinarily will not adhere except on continued pressure under heat, and which upon melting does not develop adhesiveness below 80° F., but which is capable of developing

adhesiveness above such point, permitting such coating to chill and applying an overcoating comprising a bituminous mastic, slow-drying and lastingly adhesive in nature and sticky to the touch.

4. The process of preparing constructional material which comprises saturating a vehicle with an oil and thereafter coating the vehicle with a bituminous substance having the inherent characteristics that it is normally non-adherent except on continued pressure under heat, and having the further characteristics that upon melting it does not develop adhesiveness below 80° F., but may develop adhesiveness above that point, permitting said coating to chill and thereafter applying an overcoating of a viscous, oily repellant having the inherent properties of becoming tacky or adhesive to the touch when set.

5. The method of preparing constructional material which comprises saturating a vehicle, coating the same with a drying waterproofing layer, and thereafter applying a slow-drying, lastingly adhesive mastic which is normally tacky to the touch.

Signed at Chicago, Illinois, this 9th day of August, 1927.

ALBERT C. FISCHER.