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LIGHT COLORED ASPHALTIC SURFACE

Original Filed March 27, 1920

Fig. 1.

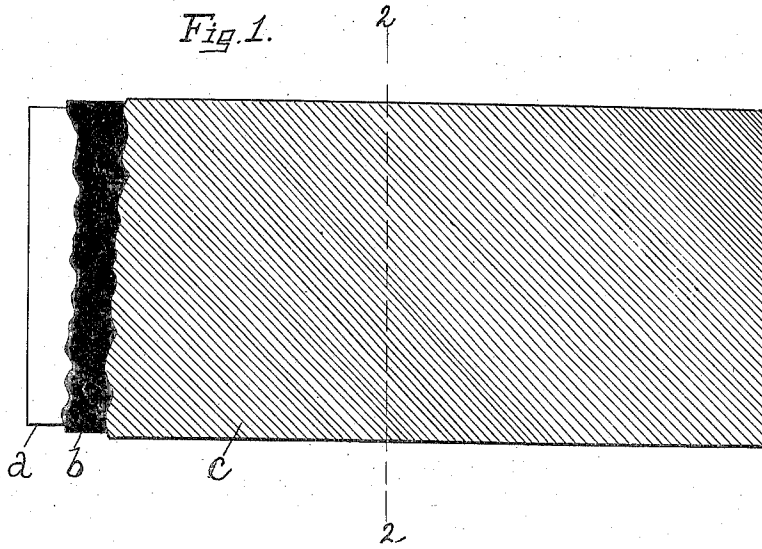
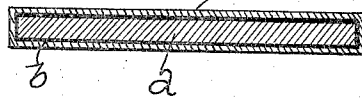


Fig. 2.



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LIGHT-COLORED ASPHALTIC SURFACE.

Application filed March 27, 1920, Serial No. 369,294. Renewed October 8, 1924.

To all whom it may concern:

Be it known that I, JAMES HOWARD YOUNG, a citizen of the United States, residing in Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented an Improvement in Light-Colored Asphaltic Surfaces, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to an article having an asphaltic or like hydrocarbonaceous surface provided with a colored and particularly a light colored film or layer affixed thereto and free or substantially free from discoloration by the hydrocarbonaceous material of said surface.

Prior to this invention, attempts have been made to provide asphaltic or like hydrocarbonaceous surfaces with a light colored film or layer, by applying thereto an ordinary oil paint, but such attempts have not to my knowledge been successful owing to the fact that the vehicle of the paint, such as linseed or other oil, has a solvent action on the asphalt or like black hydrocarbonaceous material, which discolors the light colored paint and defeats the object sought.

The present invention has for its object to provide an article having an asphaltic, bituminous, tar, pitch or like hydrocarbonaceous black surface, with a light colored layer or film, such as a white, French gray, light green or the like, which is free or substantially free from discoloration by the black of the underlying surface, and which also possesses certain properties, as will be described, which render the light colored surface layer or film particularly advantageous as a coating for asphaltic and like hydrocarbonaceous surfaces.

To this end, the light colored surface film or layer is composed of cellulose derivatives as a base, a solvent therefor, a pigment or color, and a diluent or thinner for the cellulose solution, which diluent is of such a nature that it has very little if any solvent action on the asphaltic or like black surface, and which is present in sufficient quantity to render the solvent for the cellulose derivatives non-active or substantially so on the asphalt or like material without ma-

terially affecting the solution of the cellulose derivative used.

It is preferred to employ as the cellulose derivatives cellulose nitrate or cellulose acetate, and as the solvent therefor acetone, but instead of the latter any other of the well known solvents for cellulose nitrates and acetates, such as amyl acetate, ethyl and methyl acetates, ethyl and methyl ketones, and the like may be used. As a diluent which is non-active or substantially so upon the asphalt or like material, it is preferred to use an alcohol, preferably ethyl or methyl alcohol.

In order that the invention may be clearly comprehended, one set of ingredients and proportions with which excellent results have been obtained will be enumerated, but it is to be understood that it is not desired to limit the invention to the particular ingredients and proportions recited.

Cellulose nitrate or products containing essentially cellulose nitrate, such as some photographic films, celluloid, etc., is dissolved in acetone in a manner well known, and to this solution is then added enough ethyl alcohol to produce a solution of the following proportions, to wit: 10 parts by weight cellulose nitrate, 25 parts by weight acetone, 70 parts by weight ethyl alcohol, 5 parts by weight castor oil.

To this is then added 10 parts by weight of aluminum resinate and the whole is stirred until the resinate is dissolved. To this solution is then added 10 parts by weight of powdered aluminum and 5 parts by weight of green pigment, finely ground in alcohol. The whole is then thoroughly stirred together. By thinning this composition with a mixture of alcohol and acetone 30 parts, it is possible to get a liquid of a consistency which may be brushed onto the asphaltic surface either mechanically or by hand, or it may be sprayed onto the surface or the asphaltic article may be dipped into it, the idea being to uniformly coat the asphaltic surface with the liquid described. Upon standing the volatile part of the solution evaporates leaving a tough uniform film over the asphaltic surface which is light green in color and which has not been darkened or streaked by the constituents of the asphalt upon which the film was produced.

The film so produced consists essentially of the cellulose nitrate and pigments, but has in addition a filler (aluminum resinate) which gives body to the film and which aids in preventing the so-called "blushing" of the film during the evaporation of the solvents.

In the above formula it will be seen that the alcohol which is a non-solvent for the asphalt, is present in the composition or paint materially in excess of the solvent for the cellulose base, so as to render the said solvent inactive or passive on the asphalt, yet is not in such excess as to precipitate the cellulose from its solution.

The film or layer above described, not only provides the black asphalt or like material with a light colored attractive surface, which is not streaked or otherwise discolored by the black color of the asphalt, but also forms when the solvent has evaporated a tough and durable weather resisting surface which is not tacky and which prevents sticking.

Instead of the light green pigment or color, any other pigment or color suitable for giving a light color, such as white, French gray or the like can be used. So also any suitable pigment or color for giving a dark color, such as red, brown, etc., may be used when a dark color is desired and a clearer and better dark colored surface obtained.

The advantages of the invention are particularly noticeable when a light colored film or layer is desired.

When cellulose acetate is used in producing the film or layer, the same principle of maintaining an adequate percentage of non-solvent for asphalt in the solution of the cellulose acetate during the evaporation of the solvents to produce a satisfactory film on asphalt or the like is observed.

The light colored film is especially adapted among other uses to be formed on asphaltic or like surfaces of metal articles and particularly metal sheets.

Fig. 1 represents a plan view of a protected metal sheet provided with a light colored exterior surface layer or film, and

Fig. 2, a section of Fig. 1 on the line 2-2.

Referring to the drawing, *a* represents a metal sheet provided with a protective layer *b* of asphalt, bitumen or the like, and *c* represents the light colored film or layer affixed to the asphalt surface. A light green film *c* is represented in the drawing. A metal sheet protected by asphalt and having a light green, white, French gray, or other light colored exterior surface, which is free or substantially free from discoloration, is highly useful in the building arts, especially for roofs, sidings, shingles and the like and presents a highly attractive appearance, be-

sides being durable, weather-resisting and capable of being shipped without sticking together or softening under summer temperatures. So also, the light colored film is tough, firm and does not crack or "alligator" and serves as a protective layer for the asphalt, and can be painted with the ordinary drying oil paint, as the latter is prevented from being discolored by the asphalt.

Inasmuch as the film or layer *c* may be applied to the asphalt surface in any suitable manner as above pointed out, it is particularly serviceable as a paint to be applied by hand to roofs or other articles or structures of any material, which is covered with a layer of asphalt or the like.

While it may and will be preferred to make the light colored composition as a paint in which the non-solvent for the asphalt and the like is present in the paint, it is not desired to limit the present invention in this respect, as it is possible to apply the non-solvent to the asphalt surface and then apply the cellulose colored solution to the article thus treated and obtain the light colored film or layer desired.

It is to be understood that the physical properties of the cellulose base may be modified as desired by the addition to the cellulose solution of other materials, such as triphenylphosphate, to reduce the inflammability, and camphor, castor oil, etc. to increase the flexibility or otherwise modify the physical characteristics of the cellulose, so long as they are not used in sufficient quantity to cause the film to appreciably dissolve the underlying asphalt or become discolored by it.

So also, resins, such as soft copals, sandarac, shellac or the resinates such as aluminium or zinc, may be added to the cellulose solution if desired.

In the foregoing specification, I disclose a form of building material comprising a base, an asphaltic or like hydrocarbonaceous surface on the base, and a continuous insoluble layer comprising a metallic substance in the metallic state and formed as a part of said building material which is impervious to asphaltic oils.

The particular use of a metallic substance in the metallic state as a part of the continuous layer is not, however, specifically claimed in the present application, but is claimed in my co-pending application, Serial No. 523,359, filed December 19, 1921.

Claims.

1. The combination with an article having an asphaltic or like hydrocarbonaceous surface, of a light-colored, flexible, thin layer or film affixed directly to said asphaltic surface to contact therewith and having a base and a light-colored pigment whose color is substantially unaffected by said asphaltic surface.

2. The combination with an article having an asphaltic or like hydrocarbonaceous surface, of a colored, flexible, thin layer or film affixed directly to said asphaltic surface to contact therewith and having a cellulose base and a colored pigment, whose color is substantially unaffected by said asphaltic surface. 5
3. The combination with an article having an asphaltic or like hydrocarbonaceous surface, of a light-colored, flexible, thin layer or film affixed directly to said asphaltic surface to contact therewith and having a cellulose derivative as a base and a light-colored pigment carried by said base and substantially unaffected in color by said asphaltic surface. 10
4. The combination with a metal article provided with a coating of asphalt or like hydrocarbonaceous material, of a light-colored flexible, thin layer or film affixed directly to said asphaltic or like coating to contact therewith and having a base and a light colored pigment carried by said base and whose color is substantially unaffected by said asphaltic coating. 25
5. The combination with an article having an asphaltic or like hydrocarbonaceous surface, of a flexible, thin film or layer of cellulose derivative affixed directly to said asphaltic surface to contact therewith and form thereon a protective coating which is insoluble in water, weather-resisting, firm, durable, non-tacky and substantially unaffected by said asphaltic surface. 30

In testimony whereof I have signed my name to this specification. 35

JAMES HOWARD YOUNG.