

UNITED STATES PATENT OFFICE

2,364,608

CLEANING COMPOSITIONS FOR RUGS,
UPHOLSTERY, FURS, AND THE LIKEGeorge H. Edwards, New York, N. Y., assignor to
Benjamin Hulsh, Chicago, Ill.No Drawing. Application May 13, 1943,
Serial No. 486,915

13 Claims. (Cl. 252-127)

This invention is directed to a novel semi-dry composition or compound for cleaning rugs, upholstery material, and other types of fabrics, furs, and fabric materials having pile.

One object of my invention is the production of a composition especially adapted for the cleansing, reconditioning and renovating of carpets, rugs, and fabric materials of the aforementioned type, and which has the advantages hereinafter described and which overcomes the disadvantages and objectional characteristics of presently known materials used for conventional wet cleaning or "shampooing," or presently known dry cleaning processes. Some types of rugs and fabrics frequently encountered by rug and fabric cleaners have dyestuffs which are very sensitive to any form of wet cleaning solution and even to water. The wetting of these types of rugs and fabrics frequently causes the color or dye to bleed or run one color area into another, this being especially true in some presently used draperies, tapestries, and furniture coverings.

Some floor coverings similarly are injured by the presently practiced wet or shampooing processes of cleaning, among which coverings are imitation oriental type rugs and mercerized cotton jute fibre and genuine oriental type rugs in which the colors have been retouched with dyes that have not properly set into the fabric. In recent years a new type or class of floor coverings has been developed and marketed and become popular, which type is commonly identified as the so-called "hardtwist" rugs and carpets. In this class of rugs the wool and yarn which forms the pile is tightly twisted and when woven into carpets or rugs, the surface of the pile presents a substantially beaded or pebbled appearance. This type of floor coverings have since their entry into the market presented to the commercial carpet and rug cleaning industry a new and difficult problem of proper renovation, cleaning, and reconditioning, which thus far has not been solved by the cleaning industry. In presently known commercial practice in attempting to clean the so-called "hardtwist" rugs and carpets, it has been found that when the wool pile thereof has been thoroughly wetted and then shampooed with soap and water solution, the wool forming the pile becomes soft and swells, untwists, lengthens, wrinkles and frays out and creates an irregular and fuzzy condition and wherein the original beaded appearance of the rug is destroyed.

Further in many instances, the last mentioned steps frequently shrink the rug and cause it to

curl and in some instances substantially destroys the sizing in the warp of the rug.

The aforementioned presently practiced steps of first wetting and then shampooing hardtwist rugs are usually followed by agitation provided by the bristles of a power driven rotary brush which combs through the softened wool pile and further lengthens and frays the pile and thereby produces an irregular or fuzzy condition and usually destroys the original twist or bead of the fibres which originally produced the desirable beaded appearance which the new rug or carpet possessed.

In commercial cleaning practices of hardtwist rugs and coverings having relatively close nap, the ordinary dry cleaning process is also practiced wherein the attempted cleaning is performed with evaporable solvents such as naphtha, benzine, or gasoline, and the practice of known dry cleaning processes with evaporable materials of this type does result in a proper cleaning of the rugs only in instances where the rugs and fabrics can be submerged in such solvent mixtures in a washing machine. However, such submergence in washing machines is practiced in relatively few commercial rug establishments as relatively few thereof are equipped with dry cleaning machines of sufficient size to hold the usual room sized floor covering unit. Even where it is possible to dry clean rugs as last stated, rugs of the hardtwist type have the beads at least partially and sometimes wholly destroyed and the fibres frayed and lengthened to create an undesirable irregular fuzzy condition and appearance and also the life and wearing qualities of the fibres forming the pile are unfavorably affected and lessened due to the removal by such cleaning solvents of the natural oil from the wool fibre.

In the last mentioned presently known dry cleaning practice with evaporable solvents such as kerosene, benzine, and gasoline wherein the covering units are submerged in a solution in a washing machine, the tumbling and bending action within the machine tends to break up the sizing in the warp of domestic type rugs to thereby cause the fabric or rug to become limp and wrinkled. This undesirable resulting condition then makes it necessary for the commercial cleaner to steam the rugs to remove the wrinkles and to resize them to renew their stiffness or body so that they will lay flat upon the floor.

This step of steaming is also objectionable in that it causes the wool pile to swell and this also injures the twisted yarn. Also the said dry

cleaning methods do not raise the crushed or matted down pile, which crushing or matting is to a substantial extent the result of removal of the natural oil in the wool and consequent loss of the original tendency of the wool fibres and yarn to stand upright.

Modification of the dry cleaning process with the aforesaid evaporable solvents is the scrubbing of the surface or pile of floor covering units by hand, which method is neither economical nor satisfactory because of the large quantities of solution that is required to loosen and dissolve the soil from the pile, and even when such excessive quantities of cleansing solution are used, it causes the dissolved soil to penetrate deeper into the base of the pile and into the warp of the rug. A further objection and dangerous feature of solvents composed namely of hydrocarbon materials is the creation of fire hazards, especially when applied to the rug or covering in an open room.

Still another cleansing method presently practiced to a limited extent in connection with the cleaning of rugs and coverings having sensitive colors and twist wove fabrics has been the application of fine powdery substances composed of colloidal clay which substances have previously been impregnated with one or more of the evaporable hydrocarbon base solvents. In this attempt there is not only the objectionable hazard of inflammability but also the objection that the colloidal clay is sensitive to and absorbs the moisture from the wool or yarn of the rug or covering. As most wool contains some moisture (the amount thereof depending upon atmospheric conditions) the colloidal clay mixture adheres to the fabric and fibres immediately upon application to thereupon cause a conversion thereof into a pasty, putty-like substance which all the more sticks to the fibres and is more difficult to extract even with an efficient vacuum cleaner. The fineness of the powder-like mixture containing colloidal clay in combination with the solvent causes the applied material to penetrate into the twist of the wool yarn and between the closed together fibres thereof which condition also makes it difficult to extract. The powder-like mixtures of the colloidal clay content have practically no moisture therein, and there was nothing to cause a raising of crushed or matted down pile to its normal original condition.

A still further objectionable feature of presently known cleansing of commercial carpet and rug cleaners is caused partially by the necessity for cleaning tacked down carpets on location. In these instances, commercial cleaners employ a portable rotary scrubbing machine and a vacuum cleaner, and after first extracting the dry surface and loose dirt from the floor covering, they usually shampoo the covering with a soap solution and then extract but a part of the soap suds with the vacuum machine. As the rug or covering is secured, no rinsing can be done, and to thoroughly saturate the fabric or covering would cause shrinkage and conditions favorable to the development of mildew because of the consequent lengthy drying periods. As stated, in the practice of this method of cleaning, it is impossible to directly remove all of the residue of the soap and soil with vacuum machines and such residue remains to dry in the fabric. Such residue remaining in the fabric includes either animal fat or vegetable oil depending upon the nature of the soap used, together with a certain percentage of alkali which is contained within

most soap. Said remaining residue eventually injures and partially destroys the color tone and causes dry-rot of the fabric with consequent shortening of the life thereof. A further objection created by this method is that the oil or fatty substances remaining in the fabric causes dust to readily adhere to it which is very difficult and usually impossible to effectively remove with a vacuum. This more pronounced adhesion of dust results in the rug or fabric more quickly becoming more soiled than before the attempted cleaning. A still further objection of this method of shampooing fixed rugs with soap solutions and only partially extracting the soap suds prevents the rug or covering from being walked upon for at least four or five hours or longer while the rug is slowly drying.

It is, therefore, a further object of my invention to provide a novel cleansing composition which will satisfactorily clean, recondition and renovate rugs; which will penetrate the nap and pile especially of hardtwist and closely woven rugs; which will restore the pile to its original desirable condition within a relatively short interval of time: which is safe from fire hazard at normal temperature; which is satisfactorily usable on rugs and coverings secured to floors; which will aid in raising crushed or matted down pile; which makes rinsing of the covering unit unnecessary and which upon self-drying turns from a dark brownish color to a light grayish color to thereby indicate to the users that the self-drying has progressed sufficiently to permit convenient and easy removal thereof with ordinary vacuum machines.

A further object and accomplishment of my invention is the provision of a novel cleansing composition satisfactorily usable for rugs, coverings, leathers and leather fabrics, which does not after use leave a moist condition in the rug or fabric for substantially long periods of time and which does not create the conditions promotive for the creation of mildew; which does not cause dry-rot in the fabric and pile; which does not injure color tone of the twisted fibres or yarn; which does not soften, swell, untwist, lengthen, or fray the wool pile or close weave of so-called hardtwist rugs; which does not cause the soil in the rug to penetrate into the pile and which does not absorb the moisture in the wool or penetrate into the warp in such a manner as to make it difficult to extract.

A further object of my invention is the provision of a cleansing composition or compound adapted for uses of the type hereinbefore described wherein a base material acts as a vehicle or carrier agent for both the moisture-containing and cleansing ingredients and which may be satisfactorily and easily worked into and between the fibres of the pile or nap, which have high penetrating qualities, which does not leave a fine tacky dust which would normally float and fill the air and clog the pores of the vacuum bag; and which are also relatively easily extracted from the rug or fabric after repeated and substantial contact of the surfaces and parts of the carrier agent with the surfaces of the fibres.

Other and further important objects of my invention will be apparent from the following description and appended claims.

After repeated experimentation with various types of materials intended for use as bases or carriers for the chemical and other ingredients, I found that any one of a number of absorbent materials are satisfactory for this purpose, these including ground cork, ground and finely divided wood, absorbent clay, bentonite, activated carbon,

activated alumina, various types of cellulose products of a porous organic absorbent. In the illustration hereinafter described, I utilize wood flour of a controlled mesh size as an ideal carrier agent for both moisture and cleansing solvents, in that it was relatively light in weight even after thoroughly impregnated with cleansing and other ingredients. In such experimentation, I have found that such finely ground wood or wood flour did not become enmeshed in the wool fibres and consequently was easy to extract from thick closely woven pile fabric with a vacuum machine without any previous mechanically impelled drying of the carrier material while it was in the pile. I have found that flour or ground wood made from maple to be particularly satisfactory as a base and carrier material for the herein stated purposes as it is substantially free from water-leachable tannins and resins which exist in certain other type woods.

Because of the many different irregularly formed surfaces of the finely ground wood (which are visible under the microscope), these numerous irregular surfaces provide numerous and varied cleansing surfaces for contacting the surfaces of the fibres of the covering units.

In my experimentation in an effort to eliminate inflammability of the resultant product which included inflammable mineral or hydrocarbon solvent having dirt solvent or cleansing properties, I found that such a solvent could be mixed with a sufficient quantity of carbon tetrachloride, itself an efficient non-inflammable solvent, to produce an ideal solvent or liquid composition for the set fast greases and soil which are normally adhered to the greases in the pile of the covering units to be claimed.

I have also found that naphtha or similar volatile hydrocarbon solvent having cleansing properties may be mixed in varying proportions with carbon tetrachloride to produce a satisfactory solvent which is non-inflammable under normally encountered conditions.

I utilize a refined odorless base material i. e. odorless kerosene in order to produce in the final product a slightly oily and slightly sticky characteristic in order to cause dust and dirt to readily adhere to the particles or grains of the carrier material.

The substantial proportions and range of proportions for the above mentioned preliminary compound is substantially as follows; this reference being based upon an illustrative batch of approximately 660 pounds of final resultant finished cleaning composition:

(1) Stoddard solvent; said Stoddard solvent being a mineral spirit having a boiling point substantially from 309 degrees F. to 385 degrees F. and in one form a refined grade of kerosene having a lower boiling point than commonly known kerosene or commercial mineral spirits (or in lieu of said Stoddard solvent oleum spirits may be utilized, said oleum spirits being a refined hydrocarbon solvent with a boiling range of substantially 203 degrees F. to 286 degrees F.), 10 gallons or approximately 65 pounds.

(2) Hydrocarbon solvent having cleansing properties, i. e. carbon tetrachloride and naphtha combined, or carbon tetrachloride alone or naphtha alone in an amount of approximately 16½ gallons or from 103 to 241¼ pounds, depending on the proportion of carbon tetrachloride which is used.

(3) Odorless base material, i. e. deodorized hy-

drocarbon solvent, kerosene or the like, 3½ gallons and 12 ounces or approximately 23¾ pounds.

(4) Soap, preferably benzine soap or naphtha soluble soap, 13¼ pounds.

The proportion of each of the above recited ingredients may be decreased or increased substantially 20% from the preferred proportions above recited, and at the same time attain a very satisfactory resultant product, it being understood that in instances where the proportions of a part of the said ingredients are increased, the proportions of other of said ingredients are preferably substantially correspondingly decreased.

As an example of the range of proportion of ingredients which may be satisfactorily utilized in the first step of making the first compound for a typical batch of approximately 660 pounds in the herein described manner is the following:

(1) Oleum spirits or similar hydrocarbon solvents having boiling points ranging between 200 F. and 400 F. (or other similar mineral spirits), one form of which may be Stoddard solvent as aforesaid; from 8 to 12 gallons, or from approximately 52 to 77 pounds.

(2) Carbon tetrachloride and naphtha or carbon tetrachloride alone, or an equivalent chlorinated solvent such as trichlor ethylene, tetrachlor ethylene, dichlor ethyl ether, etc. in an amount approximately of from 13 to 19 gallons.

(3) Liquid odorless base material i. e. deodorized hydrocarbon solvent, kerosene, etc., 11¼ qts. to 16¼ qts. or approximately 18½ to 26¾ pounds.

(4) Soap, preferably benzine soap or naphtha soluble soap derived from the group of oleic acid, stearic acid, palmitic acid reacted preferably with a glycol or glycerine derivative to yield a glycol oleate, stearate or palmitate, 10½ pounds to 15¼ pounds.

Separate from the foregoing, I utilize a fatty acid ester of glycerin, propylene glycol and diethylene glycol, preferably diglycol stearate, added to water, mixed in the proportion of 22 gallons or 185¾ pounds of water to 10 pounds of diglycol stearate or equivalent glycol derivative for an illustrative batch of 660 pounds of finished cleaning composition.

The purpose of the diglycol stearate, or of its equivalent, is to render the aforementioned solvents, such as Stoddard solvent, mineral spirits or the like, emulsifiable in the water portion of the finished product. If diglycol stearate or equivalent glycol derivative were not added and combined as aforesaid, the said solvents would have a tendency to separate from the water phase of the formulation. Accordingly, one of the functions of the diglycol stearate, or equivalent derivative is to produce a uniformity throughout the resultant composition. A further function of the diglycol stearate is to increase the stickiness of the coating of the liquid portion of the finished composition upon the surfaces of the particles of the granular carrier material, and also to make such stickiness and adhesive more permanent.

Additional functions of the aforesaid hydrocarbon solvents are to dissolve and loosen the dirt from the fibres of the fabric or rug as well as to open up groups of fibres which are substantially stuck together to thereby permit better and easier penetration of the resulting product into and with the fabric or rug fibres.

The separate step of making the foregoing second compound is the mixing together of water and diglycol stearate (or equivalent material) in

the proportion or range of from 18 to 26 gallons of water and from 8 to 12 pounds of diglycol stearate or glycol derivative.

In a typical illustration of approximately 660 pounds of final product, the preferred proportion for the said stearate and water is substantially as follows:

Diglycol stearate.....pounds-- 10
Water.....gallons (or 185% pounds) -- 22

I then thoroughly mix the first mentioned composition or compound composed of ingredients Nos. 1 to 4 inclusive with the mixture of water and diglycol stearate (or equivalent material) and combine them with finely divided or ground wood flour or ground absorbent cellulose material utilizing 192 pounds of such flour for a typical 660 pound batch.

To meet widely varying climates and atmospheric conditions which exist in different territories and in different buildings, the proportion of water may desirably be varied. For example, where the resultant product is to be used in a substantially cold climate, the proportion of water may be desirably reduced as much as from 30 to 40% of the portion recited in the foregoing preferred illustration, whereas where the users of the product are to be in relatively hot dry climates, the water may be substantially increased as much as 20% from that of the foregoing preferred illustration so as to prevent an undesirable degree of drying out of the product in its containers before it is actually used. The final weight will of course vary where the proportion by weight of carbon tetrachloride is varied from the typical volatile solvent mixture based on one half naphtha and one half (by volume) of carbon tetrachloride.

The next step in the method or process is to combine and thoroughly mix both of the two aforesaid mixtures or compounds with finely divided or ground wood flour, utilizing approximately 192 pounds of wood flour for the aforesaid quantities of other materials. The proportion of wood flour or similar carrier may be varied from the aforesaid quantity within reasonable degree, depending upon the size of the particles and their absorptive and surface characteristics.

In some instances, I also find it desirable, though optional, to add to the water-phase of the formulation, a suitable wetting agent to the extent of a maximum of 2% of the final batch so as to render the solvent-phase of the composition more penetrating and to impregnate more thoroughly the particles of wood or other absorbent carrier material and also to give the water an increased detergent action, and to replace and neutralize the alkalis where the water would have an alkaline content which would normally be injurious to the fibre of the rug or other covering. I have found alcohol sulphate or an alkyl aryl sulphonate or any other material possessing properties of lowering the surface tension of the mass to be desirable wetting agents to be added for this purpose just recited.

In the making of the modified form of the final cleaning composition which includes an addition of a wetting agent, I find the desirable proportion of the alcohol sulphate to be approximately $\frac{1}{4}$ ounce of wetting agent to 122 ounces of water or approximately $60\frac{3}{4}$ ounces of wetting agent to 22 gallons of water.

The resulting cleaning composition, when made

with finely ground wood containing tannin, has a brownish color substantially like cocoa in powdered form, said coloring being due to the tannin in the wood. When finely ground flour or particles made from tannin-free hard woods are utilized, as for example, maple, hickory, birch, white birch and mahogany, the color of the finished product becomes substantially darker than that of the ground wood itself.

Another though optional novel accomplishment of my invention is the rendering of the ground wood or wood flour less inflammable and possessing a flame-retarding characteristic. I have found this can be satisfactorily attained by adding to the aforescribed combination of ingredients, a flame retarding compound or solution in liquid form of a strength up to 5%, or in a proportion of substantially $\frac{1}{4}$ pounds of flame retarding compound to 122 ounces of water, (or approximately 22 ounces of flame retarding compound to 1 gallon of water) as a flame proofing or retarding material. An ammonium salt of sulfamic acid may be satisfactorily utilized. The flame retarding material such as the ammonium salt of sulfamic acid should be added to the water first to make a solution thereof with the water before the aforesaid diglycol stearate or glycol derivative is combined with the water. When the entire liquid composition is mixed with the wood particles, it will render the wood particles satisfactorily non-inflammable under normally encountered conditions.

The resultant composition has the following improved and novel advantages and characteristics:

(1) It is not affected by the relatively slight moisture content of the wool in the fibres of the rug or other fabric in connection with which it is used.

(2) It does not adhere to the fibres so as to resist removal from the fibres by ordinary means such as an ordinary vacuum cleaner.

(3) It is not a fire hazard and is not inflammable when the specified chlorinated hydrocarbon solvents are used in the specified formulation.

(4) It contains in itself sufficient moisture, a part of which is imparted to the fibres of the rug or nap so as to cause the pile and fibres to rise during the relatively short period which is required for complete drying. As the compound is agitated in contact with the fibres of the pile or nap, the lustre or sheen of the fibres is revived inasmuch as the composition does not remove any of the natural oils or the natural color or dye from the fibres.

(5) My composition can be readily agitated into pile fabrics or rugs either by a power driven brush or by a hand operated brush, and after it has performed the herein described function including the contact with the dirt on and between the fibres, it can be easily removed as stated. It eliminates the shrinkage, color discoloration, or running of colors ordinarily encountered with liquid type cleaners, and as it leaves no liquid particles, there is no possibility of it leaving a damp condition which when ordinary liquid cleaners are used causes mildew and dry-rot.

When the finished cleaning composition is applied and used in the described manner in normal room temperatures, the particles become substantially dry in a relatively short period of time, often in from ten minutes to one-half hour to permit their quick and easy removal with the aid

of a vacuum cleaner. However, due to the relatively high content of water and of the content of hydrocarbon solvent, trichlor ethylene and soap, such normal drying period is considerably longer than encountered in the use of highly volatile and inflammable cleaning solutions of the type usually used for clothing. This prolonged drying period of my product causes a lengthened period of active functioning of the contained active cleansing ingredients upon the fibres and nap of pile fabrics. This is because the liquid portion of the compound is readily and completely evaporable at normal room temperature. When my product becomes sufficiently dry to permit removal with a conventional vacuum cleaner, it becomes considerably lighter in color, and such color change serves as a guide to determine the desired degree of drying and the time when vacuum removal may be satisfactorily effected. The resultant product is hydrated, that is, having a certain water content, and it has the power of absorbing additional moisture from the air and readily absorbs water manually added thereto. It is advisable to pack the cleaning compound in a sealed air-tight container so that when it is stored preceding actual use, or between intervals of use of parts thereof, the damp condition and the moisture content will be substantially maintained. I have also found said cleaning composition to be highly satisfactory for cleaning leather, artificial leather and similar fabrics.

In the use of my novel composition in connection with fabrics, upholstery fabrics, leather and leather fabrics, the composition may be enclosed in a pad, i. e., cheese cloth, and rubbed over the surface of the material until the soil is removed and during which step the solvents and other ingredients loosen the dirt which is caused to adhere to the particles of the carrier medium, i. e. wood flour after which they are easily removed.

Further novel characteristics and accomplishments of the composition is that when the material is applied and spread upon rug or fabric being cleaned, the particles dry themselves to a substantial degree in a relatively short period of time and actually change to a grayish color so that attainment of the grayish color is a "signal" or indication to the user that the self-drying has progressed to a sufficient degree to permit relatively quick and easy removal of the particles with an ordinary vacuum. A further advantage is that unlike colloidal clay, the finished composition does not result in a fine, tacky dust which would normally fill the air and clog the pores of the vacuum bag.

A further method of cleaning upholstery, pile, leather and similar fabrics is to sprinkle a quantity of my composition upon the fabric and agitate it against the fabric surface with a bristle brush until the soil has been loosened and has adhered to the surface of the carrier particles, whereafter the same may be readily removed by a vacuum or other means after a short interval allowed for at least partial drying of said composition.

I am aware that various changes may be made in the embodiment of the invention herein specifically described without departing from or sacrificing any of the advantages of the invention or any features thereof, and nothing herein shall be construed as limitations upon the invention, its concept or structural embodiment as to the whole or any part thereof.

I claim:

1. A cleaning compound having dust collecting and dirt absorbing properties comprising the following ingredients in substantially the following proportions: 10 lbs. diglycol stearate, 22 gallons of water, 10 gallons Stoddard solvent, 16½ gallons of carbon tetrachloride and naptha, 3½ gallons deodorized hydrocarbon solvent having a boiling range substantially from 379° F. to 468° F., 13 lbs. of soap and 192 lbs. of wood flour.
2. A cleaning composition adapted for use in cleaning rugs and fabrics and in granular form consisting of the following combined materials in substantially the following proportions; 10 lbs. diglycol stearate, 10 gallons Stoddard solvent, 186 lbs. of a compound consisting of carbon tetrachloride and naptha, odorless kerosene, 13 lbs. of soap, 192 lbs. of wood flour and not less than 185 lbs. of water, said water being adapted to retard and extend the normal drying time of the product and to thereby extend the time of active functioning of said carbon tetrachloride, naptha and hydrocarbon solvent.
3. A cleansing dirt solvent and dirt-collecting composition for pile rugs and fabrics consisting of a granular mixture of the following mixed together materials composed of approximately 660 parts by weight; 8 to 12 parts by weight of diglycol stearate, 52 to 77 parts by weight of Stoddard solvent, 96 to 144 parts by weight of trichlor ethylene, 18½ to 26½ parts by weight of an odorless hydrocarbon solvent having a boiling range from 379° F. to 468° F., 10 to 15 parts of naptha-soluble soap, water sufficient for emulsification of the mass, the residue of absorbent ground cellulose material of an amount of approximately 192 parts by weight.
4. A cleaning composition adapted for use in cleaning rugs and fabrics and in granular form consisting of from 8 to 12 lbs. of diglycol stearate, from 18 to 26 gallons of water, from 8 to 12 gallons of Stoddard solvent, from 13 to 19 gallons of liquid composition of trichlor ethylene and naptha, from 11¼ qts. to 16¼ qts. of deodorized hydrocarbon solvent, 10½ to 15¼ lbs. of soap, and from 153 to 230 lbs. of wood flour.
5. A cleaning compound consisting of finely divided relatively small absorbent cellulose particles, and said particles being impregnated with a coating and having adhered to their surfaces a composition having dirt-solvent and dirt adherent qualities and composed of an emulsion of a total of approximately 660 parts by weight, of approximately 10 parts by weight of diglycol stearate, 52 to 77 parts by weight of Stoddard solvent, from 96 to 144 parts by weight of a volatile naptha, from 10½ to 15¼ parts by weight of naptha-soluble soap, from 18 to 26½ parts by weight of liquid odorless naptha, and water in an amount of not less than 28 per cent by weight, said compound being adapted to be worked into and between the nap of a rug or the like and into contact with the fibres thereof.
6. A cleaning compound and dirt solvent material consisting of approximately 660 parts by weight of finely divided relatively small absorbent cellulose particles, said particles being impregnated with and having adhered to their surfaces a coating composition having dirt-solvent and dirt adherent qualities composed of an emulsion of from 8 to 12 parts by weight of diglycol stearate, from 52 to 77 parts by weight of Stoddard solvent, from 96 to 144 parts by weight of naptha, from 10 to 15 parts by weight of naptha-soluble soap, from 18 to 26½ parts by weight of deodorized kerosene, and water in an amount

of not less than 185 parts by weight, said water, diglycol stearate and soap causing emulsification of the mass, said compound being adapted to be worked into and between the nap of a rug or the like and into contact with the fibres thereof and being readily removable therefrom after drying.

7. A cleaning compound and dirt solvent material consisting of a total of approximately 660 parts by weight of finely divided relatively small absorbent cellulose particles, said particles being impregnated with and having adhered to their surfaces a non-tacky coating composition having dirt-solvent and dirt adherent qualities composed of an emulsion of from 8 to 12 parts by weight of diglycol stearate, from 52 to 77 parts by weight of a hydrocarbon solvent having a boiling point of from 200 to 400 degrees F., from 96 to 144 parts by weight of volatile trichlor ethylene and naptha, from 10 to 15 parts by weight of naptha-soluble soap, approximately $3\frac{3}{4}$ parts by weight of a material having properties of lowering the surface tension of the mass, from 18 to $26\frac{1}{2}$ parts by weight of kerosene and water in an amount of not less than 185 parts by weight, said water being adapted to extend the normal drying time of the resultant product, when applied to pile fabrics, sufficiently to effect an extended contact and cleaning functioning of said hydrocarbon solvent, trichlor ethylene, naptha and soap.

8. A cleaning composition as described in claim 7 and having therein at least 25 parts by weight of a flame retarding agent consisting of an ammonium salt of sulfamic acid.

9. A cleaning composition adapted for use in cleaning pile-bearing, nap-bearing and irregularly surfaced fabrics and of substantially granular form and non-tacky consistency and adapted to be worked into contact with the fibres and fabric base of rugs and fabrics, comprising a composition of a total of approximately 660 parts by weight; 10 parts by weight of diglycol stearate; from 52 to 77 parts by weight of Stoddard solvent, a volatile composition of trichlor ethylene and naptha of from 96 to 144 parts by weight, $18\frac{1}{2}$ to 26 parts by weight of kerosene, 10 to 15 parts by weight of soap, water in an amount of not less than 185 parts by weight, and approximately 192 parts by weight of wood flour thoroughly mixed together to form a damp substantially powder-like dirt adherent material, said water being adapted to impede the normal drying of the product and to extend the functioning time of the trichlor ethylene, naptha and Stoddard solvent, said composition having the characteristics of not sticking together or clogging a vacuum cleaner bag when dry.

10. A cleaning composition adapted for use in cleaning pile-bearing, nap-bearing and irregularly surfaced fabrics and of substantially granular form and adapted to be worked into the pile and nap of fabrics and into contact with the fibres

and fabric base comprising a composition based on a total emulsified mass of approximately 660 parts by weight, of 10 parts of diglycol stearate, from 10 to 15 parts by weight of benzine soap, 52 to 77 parts by weight of liquid hydrocarbon solvent having a boiling range between 200 and 400 degrees F., from $18\frac{1}{2}$ to $26\frac{3}{4}$ parts by weight of kerosene, from 96 to 144 parts by weight of volatile chlorinated distillate and solvent, water in an amount of not less than 185 parts by weight, and finely ground absorbent cellulose material of approximately 192 parts by weight, all mixed together to form a dark colored, damp, substantially powder-like dirt solvent and dirt adherent material, which, upon spreading and agitation, is adapted to partially and relatively slowly dry to substantially a light grayish color.

11. A dirt collecting cleaning composition adapted for use in cleaning pile-bearing and nap-bearing fabrics and of substantially granular form and adapted to be worked into the pile and nap of fabrics and into contact with the fibres and fabric base comprising a total mass of approximately 660 parts by weight and having substantially the following proportions by weight: 10 parts of diglycol stearate, 65 parts of Stoddard solvent, 186 parts of carbon tetrachloride, 22 parts of kerosene, 13 parts of soap, from 148 to 222 parts of water and from 153 to 230 parts of absorbent finely ground cellulose material, said materials being thoroughly mixed together to a damp substantially powder-like state.

12. A cleaning composition for rugs and fabrics and of substantially granular form comprising a granular absorbent cellulose material of from 23 to 35 per cent, said granular material having partially absorbed therein and carrying on its surfaces a composition consisting principally of the following ingredients: from 1.2 to 2 per cent diglycol stearate, from 8 per cent to 11.7 per cent of Stoddard solvent; from 14 per cent to 22 per cent of composition composed principally of trichlor ethylene and naptha; from $1\frac{1}{2}$ to $2\frac{1}{2}$ per cent naptha-soluble soap; from $2\frac{1}{2}$ to 4 per cent of deodorized kerosene and from 22 to 35 per cent of water.

13. A dirt and dust collecting cleaning composition composed of approximately 660 parts by weight, and consisting of finely divided absorbent wood particles in a ratio of from 153 to 230 parts by weight and impregnated with and having adhered on their surfaces a slightly sticky dust-adherent non-glossy coating composed of an emulsified mixture containing approximately 10 parts by weight of diglycol stearate, a volatile composition containing from 96 to 144 parts by weight of trichlor ethylene, from 52 to 77 parts by weight of Stoddard solvent, water of not less than 185 parts by weight, and from 10 to 15 parts by weight of soap.

GEORGE H. EDWARDS.