

UNITED STATES PATENT OFFICE.

WALTER P. JENNEY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LEATHER-WATERPROOFING COMPOUNDS.

Specification forming part of Letters Patent No. **204,829**, dated June 11, 1878; application filed January 9, 1878.

To all whom it may concern:

Be it known that I, WALTER P. JENNEY, of the city of Brooklyn, in the county of Kings and State of New York, now temporarily residing in the city of Boston, in the Commonwealth of Massachusetts, have invented a new and useful Dressing for Leather and Leather Goods, of which the following is a specification:

On the 30th day of May, 1876, the following-named Letters Patent of the United States were granted unto me: "Improvement in obtaining a resinous substance from purified sludge-oil," No. 178,061; "improvement in varnish," No. 178,152; "improvement in bases for Japan or varnish," No. 178,153; "improvement in resinous substances," No. 178,154; and on the 15th day of May, 1877, the following-named Letters Patent of the United States were granted unto me: "Improvement in paints," No. 190,761; "improvement in processes of treating sludge and sludge-oil," No. 190,762.

My invention consists in a new and useful dressing for leather and leather goods, which shall impart permanent flexibility and softness to the leather, and may be so prepared as to render it absolutely impervious to water.

This new manufacture or dressing is composed of a certain resinous base dissolved in suitable non-drying or slowly-drying oils, and may, when desired, be thinned with naphtha or other volatile solvent.

The resinous base imparts body and waterproofing qualities to the dressing. It must be soluble in the oil, and must not be precipitated by the volatile solvent. The resinous base must be of such character that it will not injure the strength, flexibility, or other physical properties of the leather, and will not undergo any decomposition when combined with the oils by the action of time, which shall have an injurious effect upon the leather.

The non-drying oils prevent the compound from becoming hard and brittle by the action of time or exposure to the elements, and assist in rendering the leather soft and flexible.

The volatile solvent acts merely to thin the dressing, so that it may more readily penetrate the substance of the leather, and, quickly

evaporating, leaves the compound of the resinous base and oils filling the pores of the leather.

As the volatile solvent acts solely as a vehicle to convey the dressing into the substance of the leather, its use may be dispensed with, and instead thereof the dressing can be applied warm to the leather; or the ingredients of the compound may be so varied in their proportion as to make the compound sufficiently fluid to enter the pores of the leather without the addition of any volatile solvent and without heat. The resinous base may be a simple substance, or may be a compound of a number of substances, which shall, when incorporated together, produce a base having the desired qualities or properties. I prefer to employ as the resinous base of this new dressing the solid oxidized sludge-oil described in Letters Patent No. 178,154, or the fluid partially-oxidized sludge-oil described in Letters Patent No. 190,762, according to the particular use to which the dressing is to be applied.

I have used, with favorable results, a resinous base composed of oxidized sludge-oil and india-rubber, as described in Letters Patent No. 178,153, the compound containing from ten (10) to fifty (50) per cent. of rubber. I have also used compounds of oxidized sludge-oil with ten (10) to thirty (30) per cent. of paraffine, and have added resin, pitch, wax, and other similar substances to oxidized sludge-oil in the preparation of the resinous base; but in many cases I prefer to use sludge-oil without the addition of other ingredients.

In place of oxidized sludge-oil, I have used india-rubber and gutta-percha, in combination with resin and other similar substances, in forming the resinous base; but such compounds are very expensive. I have also made a resinous base entirely of resin, pitch, asphaltum, tar, the residuum of the distillation of petroleum and palm oils, and have combined these substances in various proportions; but such compounds have waterproofing qualities inferior to those of oxidized sludge-oil, and many are only partially soluble in naphtha, or possess objectionable odors, or act injuriously on the leather, precluding their use.

Other substances of this character may be used, as bitumen, oxidized or resinified oils, and the various gums and resins soluble in oils; but I have not found them to be necessary to the production of a good dressing.

To prevent the resinous base from becoming hard and brittle from gradual oxidation, and to impart permanent softness and flexibility to the leather, the addition of oils or fatty substances in proper proportions is necessary. For this purpose the oils and fatty bodies commonly used in the dressing and currying of leather may be employed—as fish-oils, neat's-foot oil, seal-oil, resin-oil, tallow, reduced petroleum, and paraffine-oils, which are generally classed as non-drying oils.

The oil is partly protected from the action of the air when in combination with the resinous base, and hence the slow-drying vegetable oils, as cotton-seed, castor, and linseed oils, may be used either alone or mixed with non-drying animal or mineral oils, in such proportions that the non-drying oils shall neutralize the effect of the drying oils, and produce a compound which shall possess non-drying qualities; and where the slow-drying vegetable oils are used alone it is necessary to employ a resinous base, (such as fluid oxidized sludge-oil,) having qualities which shall, when combined with the slow-drying oils, produce a non-drying compound.

The solid or semi-fluid fatty substances used by carriers, as French degreas, tallow, or grease, form, with the resinous base, in some cases, compounds having a lower melting-point than either the base or the fat, which remain in a fluid or semi-fluid condition at the common temperature, and are applicable to the dressing and currying of leather.

I do not confine myself to the use of a single oil, but may employ mixtures of several oils, in order to produce, with the resinous base, compounds applicable to particular uses in the dressing and currying of leather.

The volatile solvent which I prefer to use is petroleum-naphtha of a gravity of 60° to 65° Baumé, on account of its cheapness and freedom from any strong and offensive odor; but coal-tar naphtha, benzole, resin-naphtha, spirits of turpentine, or any equivalent volatile solvent may be employed in which the compound of the resinous base and oils is soluble, and which will readily evaporate, and will not have an injurious effect upon the leather.

To manufacture this new dressing, I melt the resinous base with the non-drying oils in a kettle or other suitable vessel placed over a fire, raising the heat to about 350° Fahrenheit, and stir the mixture until thoroughly incorporated. I then extinguish the fire, and allow the mixture to cool to a temperature of about 250° Fahrenheit, and add the naphtha or other volatile solvent, stirring until the compound of base and oil is completely and uniformly dissolved. The dressing is then allowed to remain at rest to settle, and when cold is ready for use.

I have found by experience the following proportions to produce a dressing which will render the leather absolutely impervious to water:

I. Resinous base, as above described, three pounds; paraffine-oil, one pint; linseed-oil or castor-oil, one pint; petroleum-naphtha, one quart.

II. Resinous base, as above described, five pounds; tallow, one pound; reduced petroleum-oil or paraffine-oil, one quart; petroleum-naphtha, two quarts.

III. Solid oxidized sludge-oil, four to five pounds; seal-oil or fish-oil, one quart; petroleum-naphtha, two and one-half quarts.

IV. Fluid partially-oxidized sludge-oil, five to six pounds; neat's-foot oil, one quart; petroleum-naphtha, one to two quarts.

To produce a leather-dressing which shall give permanent softness and flexibility to the leather without rendering it absolutely waterproof, which is in some cases objectionable, I combine the resinous base with a larger proportion of the oils usually employed in dressing leather.

Where the use of naphtha is dangerous or objectionable, the dressing may be prepared without the use of naphtha, and be applied warm to the leather; or, by using a sufficient quantity of oils, or selecting a very fluid resinous base, the dressing can be so compounded as to be sufficiently fluid to penetrate the pores of the leather at the common temperature.

I have found by experience the following proportions to give good results:

V. Resinous base, as above described, three to four pounds; paraffine-oil, one quart; neat's-foot oil, one quart; petroleum-naphtha, one quart.

VI. Solid oxidized sludge-oil, four pounds; tallow, one pound; reduced petroleum-oil, one quart; fish-oil, one quart.

VII. Fluid partially-oxidized sludge-oil, four to six pounds; paraffine-oil, one quart; resin-oil, one pint; fish-oil, one quart.

I also color this new dressing, when it is desired that it should produce a colored or finished surface upon the leather, and for this purpose I employ the aniline dyes which are soluble in oils and naphtha, adding from one to six ounces of the dye to each gallon of dressing.

I also grind the dressing with lamp-black, or lamp-black and Prussian blue, which solid substances are readily held in suspension in it, and, being left on the surface of the leather by the dressing striking in, produce a fine black finish.

This new dressing can be applied to the leather with a brush or sponge, and, after allowing it to dry for an hour, any excess which does not penetrate may be wiped from the surface with a cloth.

This dressing sinks into the substance of the leather, and does not remain upon the surface as an enamel or coating. It is not a

varnish, but a non-drying stuffing, filling the pores of the leather with a substance which undergoes but very gradual oxidation by the action of time, wear, and exposure to the elements.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The new manufacture or leather-dressing herein described, possessing substantially the qualities or properties herein described, composed of oxidized sludge-oil, or equivalent resinous base, dissolved in non-drying or slowly-drying oils, and thinned by naphtha

or other volatile solvent, substantially as herein described and set forth.

2. The new manufacture or leather-dressing herein described, and possessing substantially the properties or qualities herein described, composed of oxidized sludge-oil, dissolved in suitable non-drying oils, substantially as herein described and set forth.

WALTER P. JENNEY.

Witnesses:

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BANN HIGHAM.