WALTER P. JENNEY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PAINTS.

Specification forming part of Letters Patent No. **190,761**, dated May 15, 1877; application filed October 28, 1876.

To all whom it may concern:

Be it known that I, WALTER P. JENNEY, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful paint or varnish for coating the bottoms of vessels or other surfaces to protect them from corrosion or decay, and to prevent the attacks of marine worms and the growth or adhesion of sea-weeds, barnacles, or other forms of marine vegetable or animal life.

On the 30th day of May, 1876, Letters Patent of the United States were granted to me—No. 178,061, for a process for treating sludge-oil, and No. 178,154, for the solid resinous substance produced by said process; also, No. 178,152, for the varnish formed by the solution of said resinous substance in suitable solvents, and No. 178,153, for the base for a japan or varnish made by incorporating the said resinous substance with india-rubber.

I have also invented a new process for treating sludge or sludge-oil, whereby I produce, at will, the aforesaid solid resinous substance described in Letters Patent No. 178,154, or the fluid partially-oxidized sludge-oil, which process, and also the new manufacture or substance—partially-oxidized sludge-oil—are fully described and set forth in an application for Letters Patent dated October 26, 1876. My present invention consists in a new and useful paint or varnish for coating the bottoms of vessels or other surfaces to protect them from corrosion or decay, and to prevent the attacks of marine worms and the growth or adhesion of sea-weeds, barnacles, or other forms of marine vegetable or animal life.

This new paint I manufacture by mixing or grinding suitable finely-divided solid substances, as dry paints, pigments, earths, oxides, minerals, salts, compounds of metals or alloys, with a vehicle composed wholly or in part of oxidized sludge-oil, dissolved or incorporated with naphtha or other suitable solvent.

In preparing the above-mentioned vehicle, I prefer to use the fluid substance—partially-oxidized sludge-oil—where a slow-drying and strongly-adhesive vehicle is desired, and employ the solid resinous substance or more completely-oxidized sludge-oil, where the object is to produce a quickly-drying vehicle, and to impart to the paint made with it this desirable property.

The object being to produce a vehicle having about the consistency of boiled linseed-oil, for the solvent I prefer to employ petroleum, naphtha, (gravity 60° to 70° Baumé,) on account of its cheapness and quickly-drying property, using nearly the following proportions to make one gallon of vehicle: Solid or fluid oxidized sludge-oil, three to four pounds; naphtha, two to two and one-half quarts, to be dissolved with or without the aid of heat.

The vehicle may be varied in composition according to the particular use to which it is to be applied, or the properties or qualities desired in the resulting paint. Where a paint is required which shall strongly adhere to the surface and resist wearing or abrasion, the compound of india-rubber and oxidized sludge-oil described in Letters Patent No. 178,153, dated May 30, 1876, may be employed as the base for the vehicle. For this purpose the rubber compound should contain from ten to thirty per cent. of india-rubber, and to make one gallon of vehicle four pounds of the rubber compound or base should be dissolved in two and one-half quarts of naphtha by the aid of heat. This vehicle forms strongly-adhesive paints when containing twenty to thirty per cent. of rubber, but the surface fouls more readily than paints formed of oxidized sludge-oil without rubber, and in some cases I prefer to use a vehicle, the base of which is oxidized sludge-oil, melted or incorporated with ten to forty per cent. of tallow-grease, fatty acids, paraffine, or other equivalent substance. In order that the tallow may dry or harden readily, I boil or mix it with oxide of lead or oxide of zinc, using one ounce of oxide to each pound of tallow. In the case of paraffine this addition of oxide of lead or zinc is unnecessary. The tallow or paraffine is added to the oxidized sludge-oil, and melted and stirred with it. Three and one-half pounds of the compound are dissolved in two and one-half quarts of naphtha to form a gallon of vehicle. Other substances, as asphalts, bitumens, coal-tar, wood-tar, rosin, pitch, the residuum from petroleum distillation, animal fats or oils, vegetable oils or gums, may be added to the

above-described vehicles, but such additions are not necessary to the production of a suitable vehicle.

To prepare a paint for coating the bottoms of wooden vessels which shall preserve the wood from decay and the attacks of marine worms, as well as keep the surface from fouling, I grind or mix with any of the above-described vehicles a sufficient quantity of any finely-divided solid substance containing copper, or compound or salt of copper, that will afford the desired protection, and by the gradual corrosion or solution of the copper by the action of the water will produce a poisonous action, destructive to all forms of life coming in contact with it.

I do not claim the use of any special form or compound of copper, but employ the well-known pigments and substances containing copper, both natural and artificial, which have heretofore been used in painting the bottoms of vessels.

The following mixtures may be used to produce a useful and very poisonous paint, suitable to the purposes above mentioned: Dry verdigris, three pounds to five pounds; vehicle, in any of the above-described forms, one gallon—to be mixed together and ground in a paint-mill several times until a smooth paint is produced. Oxide of copper, six pounds to nine pounds; vehicle, in any of the above-described forms, one gallon—mixed by grinding as fine as practicable. Finely-divided metallic copper, or alloy of copper, five pounds to eight pounds; vehicle, in any of the above-described forms, one gallon.

The bottom of the vessel having been scraped clean, the paint may be applied in the usual manner, one or more coats being spread on as evenly as possible, and the vessel launched into the water before the paint becomes perfectly hard. In preparing a paint for the bottoms of iron vessels, the use of copper in any form seems to be impracticable, owing to the galvanic action of the copper and the consequent corrosion of the iron.

The object in this case is to prepare a paint which shall afford permanent protection to the iron from rust and corrosion, and at the same time give a surface so smooth that seaweeds or barnacles cannot readily become attached or grow upon it. For this purpose the following mixtures may be employed: Red lead, five to ten pounds; vehicle, in any of the above-mentioned forms, one gallon—to be ground together in a paint-mill as fine as practicable. Red lead, five pounds; white zinc, three pounds; vehicle, in any of the above-mentioned forms, one gallon.

For the red lead in the above mixture an equal weight of oxide of iron, ground fine, known as "Prince's metallic," may be substituted, forming a cheaper paint. The bottom of the vessel having been scraped clean, two coats of the above-described paint should be applied in the usual manner; and after they are perfectly hard and dry the surface should be covered by two smooth coats of a varnish made by dissolving six to eight pounds of oxidized sludge-oil in one gallon of naphtha.

This protecting-coat of pure oxidized sludge-oil gives an extremely smooth glass-like surface, increasing the speed of the vessel, and at the same time affording no ready attachment for grass or barnacles. I also employ this thick varnish made from oxidized sludge-oil in coating the bottoms of yachts and pleasure-boats where great speed is desired, the smooth surface formed by the varnish greatly decreasing the resistance of the water to the boat's progress. For this purpose two coats of varnish applied upon the bare wood, or over the surface of other paint, may be employed.

A compound well adapted for coating the bottoms of vessels and forming a protecting-surface over other paint may be made by melting or incorporating tallow, fatty acids, grease, paraffine, or other equivalent substance with oxidized sludge-oil, using from one-fourth of one pound of tallow to one pound of tallow to each pound of oxidized sludge-oil. To each pound of this compound of tallow and oxidized sludge-oil from one-half a pound to one pound of litharge, red lead, or oxide of zinc may be added with advantage.

This compound may be melted and applied with brushes while hot and fluid, or it may be dissolved or incorporated with naphtha or other suitable solvent, and applied in the usual manner to the bottom of the vessel.

What I claim to be new, and desire to secure by Letters Patent, is—

1. The new manufacture or paint herein described, and possessing, substantially, the properties or qualities herein described, composed of a vehicle consisting in whole or in part of oxidized sludge-oil and a suitable solid substance or base, as herein described and set forth.

2. The new manufacture or copper paint herein described, and possessing, substantially, the qualities or properties herein described, composed of a vehicle consisting in whole or in part of oxidized sludge-oil, and a suitable body containing copper, as herein described and set forth.

WALTER P. JENNEY.

Witnesses:
BERN. T. VETTERLEIN,
E. G. THOMPSON.