

April 17, 1951

J. J. BROPHY ET AL
RUST PREVENTIVE FILM

2,549,050

Filed March 22, 1947

2 Sheets-Sheet 1

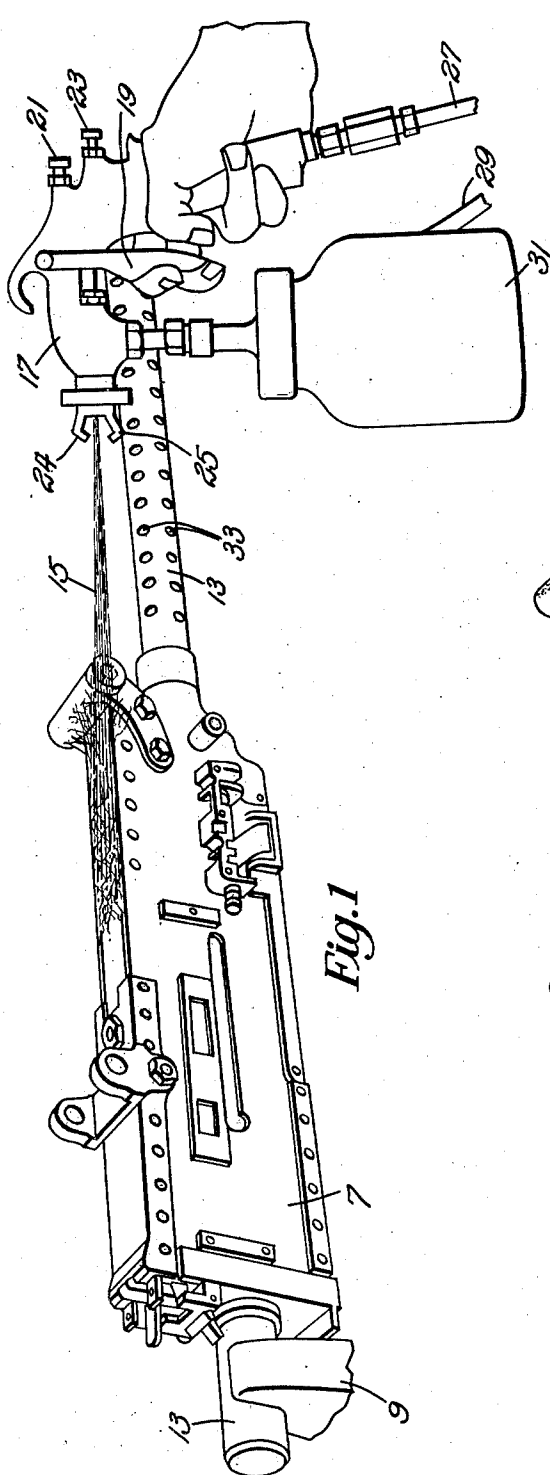


Fig. 1

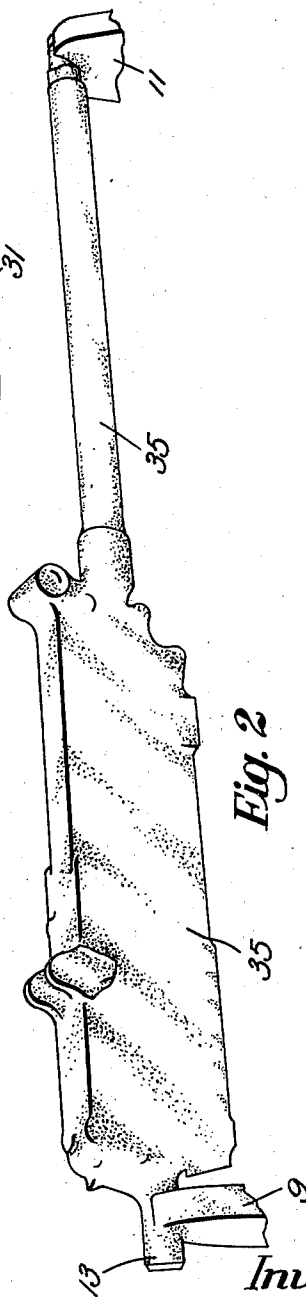


Fig. 2

Inventors

John J. Brophy

Bernard M. Pineles

Robert C. Putnam

By their Attorney

Wm. J. Conroy

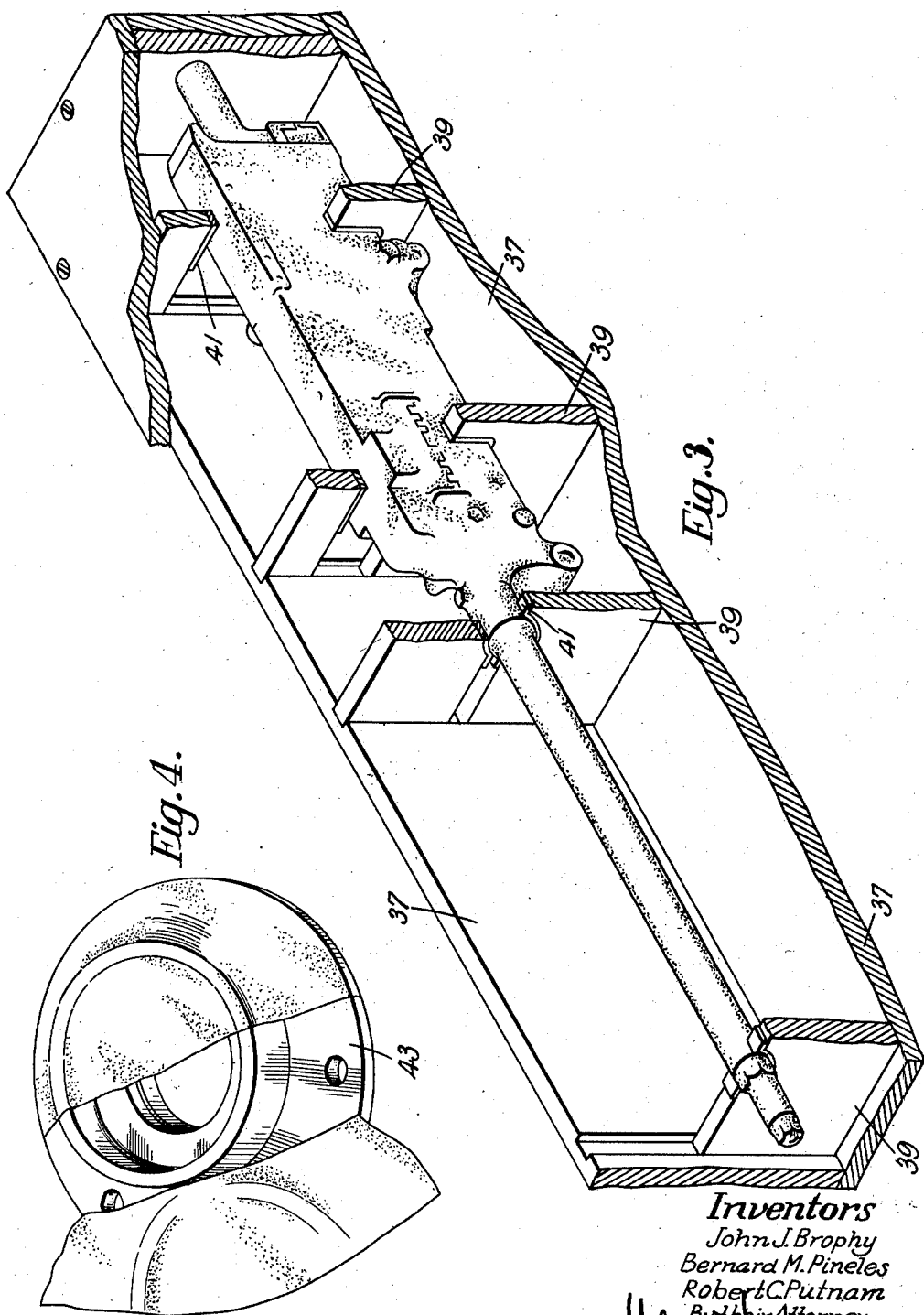
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Inventors
John J. Brophy
Bernard M. Pineles
Robert C. Putnam
By their Attorney
Wm. J. Kelley

UNITED STATES PATENT OFFICE

2,549,050

RUST PREVENTIVE FILM

John J. Brophy, Salem, and Bernard M. Pineles
and Robert C. Putnam, Marblehead, Mass., as-
signors to United Shoe Machinery Corporation,
Flemington, N. J., a corporation of New Jersey

Application March 22, 1947, Serial No. 736,514

13 Claims. (Cl. 260—32.8)

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This invention relates to temporarily protecting an article from corrosion by means of a film or coating which may be readily stripped off when desired. This application is a continuation in part of application for Letters Patent of the United States, Serial No. 533,014, filed April 27, 1944, now abandoned.

It is well known that metal surfaces, particularly ferrous metal surfaces, are subject to corrosion possibly from the effects of moisture and oxygen in contact with them. It is desirable that a protective coating be applied which may be readily and quickly removed. A film of light or low viscosity oil will protect a metal surface from corrosion for a certain period of time but such an oil has the disadvantage that the liquid tends to drain off so that ultimately the liquid film becomes ruptured. An oil of very high viscosity gives a much longer period of protection, but such an oil, which is ordinarily a grease at room temperature, is difficult to apply and difficult to remove when it has served its purpose.

According to the present invention an article which is to be subjected to conditions conducive to corrosion of the article or its contents is temporarily protected from corrosion, for example is prepared for storage or shipment, by applying to the article a solution of a film-forming colloid to provide a strong, tough, flexible film or coating which adheres lightly and may be readily peeled or stripped off when desired, for example when it has served its purpose, said film or coating having associated with it a corrosion inhibitor. The film-forming colloid solid is preferably applied by spraying a solution of it upon the article, although other methods of application such as dipping or brushing may be employed. Different methods of associating the corrosion inhibitor with the readily strippable film may be employed. Thus there may be applied first a coating of corrosion inhibitor and then a coating of film-forming colloid; or there may be applied first a coating, preferably a thin coating, of film-forming colloid containing a corrosion inhibitor and then a coating of the same or another film-forming colloid to amalgamate with the first film or coating so as to form an integral coating which may be readily stripped off; or merely a coating of film-forming colloid containing a corrosion inhibitor. Preferably a single coating which contains a corrosion inhibitor is employed.

Referring to the accompanying drawings,

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Fig. 1 is a perspective of a machine gun in process of having applied to it by means of a spray a temporary protective coating;

Fig. 2 is a perspective of the coated gun;

Fig. 3 is a perspective of the coated gun mounted immovably in a container and ready for shipment; and

Fig. 4 is a perspective of a metal article which has been coated, and the coating slit and partly peeled or stripped off.

In Fig. 1 there is shown a machine gun 7 of the fixed type, that is, one which is designed for installation adjacent to an airplane engine. The gun is shown as supported upside down by two spaced upright crotched posts 9, 11 (see Fig. 2), one crotch receiving the end of the barrel of the gun and the other crotch receiving a cylindrical member 13 at the rear of the gun. So supported, the gun may be rotated to expose all of its outer portions for application of a temporary protective coating, for example to the spray 15 which issues from a spray gun 17 held in one hand by the operator and controlled by a trigger 19.

The spray gun shown is a commercial one and has two valves 21, 23 which may be opened and closed by turning their knurled heads. The valve 21 does not control the flow of air through the main nozzle. It merely controls the flow of air through two small auxiliary nozzles 24, 25 so as to increase the proportion of air to spray material and to flatten out the spray into the fan-shape shown. When the valve 21 is closed, the spray has the shape of a cone. Air is supplied to the spray gun from an air compressor (not shown) through a tube 27, there being between the air compressor and the spray gun a valve (not shown) manipulation of which varies the pressure on the air. A second tube 29 leads from a source of supply under pressure (not shown) of the solution of spray material to a small receptacle 31 which is fast to the spray gun, a valve (not shown) being provided for varying the pressure on the spray material. The trigger 19, which the operator presses with his fingers, causes spray to issue from the main nozzle. Spraying, as has been stated, is the preferred method by which the coating or film may be applied, and for spraying any suitable spraying apparatus may be employed.

It will be noted that the machine gun has various gaps or openings in its exterior. For example, the supporting jacket 13 which sur-

rounds the barrel has a series of round holes 33 and the walls of the body of the gun which contain the firing mechanism have in them certain openings, mostly rectangular in outline, which are larger than the holes in the wall of the jacket. All of these holes and openings should be covered before the regular coat of spray material is applied. They may be covered with some extraneous substance such as paper or adhesive tape. As shown, however, the opening in the bottom of the body portion of the machine gun is being bridged or covered by a fan-shaped spray the particles of which are in the form of comparatively long filaments, the effect of such a spray being to produce a coating of comparatively long, comparatively dry filaments arranged at random, such a coating being referred to hereinafter as a bridging coating. The openings may all be thus covered, after which the regular conical spray of smaller, wetter particles is used. This method of spraying, which dispenses with the use of paper, tape, etc., forms the subject-matter of application Serial No. 533,015, filed April 27, 1944, in the name of Bernard M. Pineles, now United States Patent No. 2,441,227, granted May 11, 1948. Once the openings have been closed, either by the bridging coating or by means of paper, tape or some other extraneous material, the whole machine gun, including the bridging coatings or covers over the openings, is coated with the regular spray material as is shown in Fig. 2 wherein the machine gun is completely covered by a film or coating 35.

Although the film is tough and flexible, it may be desirable to protect it against rupturing during extraordinary rough treatment, such rupturing being particularly liable to occur when the covered article is a heavy one such as a machine gun. The covered gun may be packaged as shown in Fig. 3. A rigid container 37, herein shown as a rectangular wooden box, is provided with supports for the covered gun in the form of crosspieces 39 which fit about the parts of the gun supported by them. These crosspieces, in those localities which would otherwise contact directly with the coating or film on the gun, are provided with supporting faces of felt 41 or other soft and yielding material, the ends of the box being similarly provided so that the packaged gun may be handled roughly without danger of rupturing the film.

The coating or film which covers the articles adheres only lightly and may be readily peeled off in large pieces or stripped off in practically one piece, depending upon the contour of the article. In practice, since the film or coating is a strong tough one, it is customary first to slit the film at some convenient locality and then peel or strip it off. In Fig. 4 there is shown a metal article 43 which has been covered by a film or coating and the film is in process of being removed, said film having been slit or cut and partly peeled or stripped off.

The film or coating, as has been stated above, is one which may be readily peeled or stripped off when desired. It also adheres lightly to the article and in the case of an article which is partly or entirely enveloped, the shrinking of the coating after it has been applied acts also to hold it in place. The film or coating adheres lightly in any case except possibly unusual cases such as to smooth, highly polished metal surfaces or to the surface of a glass plate. However, the adhesion of the coating is practically

negligible in that it does not interfere with stripping off the coating when desired.

A composition for forming a corrosion inhibiting coating may comprise a solution of a film-forming colloid and a corrosion inhibitor in a volatile solvent. The coating is applied preferably by spraying a solution of this type on the article to be protected and evaporating the solvent to form a tough, but readily removable, protective film comprising the colloid and the inhibitor. In a preferred form the coating composition also includes a non-corrosive, non-drying oil. It is found that the oil improves the effectiveness of the coating in preventing corrosion but that the oil is not essential and that in many cases satisfactory corrosion prevention can be obtained without it. A plasticizer is ordinarily included in the composition for its usual function of providing flexibility and resistance to cracking. The plasticizer also may be eliminated where the stress to which the coating will be subjected is not great.

Among the suitable film-forming colloids which we have found useable in our coating composition are water-insoluble cellulose esters, including cellulose acetate butyrate, cellulose acetate propionate, and cellulose propionate, water-insoluble cellulose ethers, such as ethyl cellulose and benzyl cellulose, and copolymers of vinyl chloride and vinyl acetate having a vinyl chloride content of at least about 85%. The vinyl copolymers are particularly satisfactory because of their degree of resistance to the passage of moisture, coupled with their capability of being dissolved in certain readily available volatile or easily evaporable solvents. Other film-forming colloids may be used, but the degree of protection obtained will, of course, vary with the quality of the film produced.

Glyceryl monolaurate has been found very effective as a corrosion inhibitor in the coating of the present invention. Other inhibitors include the alkali metal and ammonium salts of fatty acids having from 10 to 18 carbon atoms, and the products of incomplete esterification of polyhydric alcohols and fatty acids having from 10 to 18 carbon atoms. It will be observed that these corrosion inhibitors are at least partially water-dispersible materials comprising a first radical derived from a fatty acid having a long hydrocarbon chain attracted to hydrocarbon oils and a second radical which is attracted to water. The following are examples of compounds which have been found effective as corrosion inhibitors:

Sodium salt of phosphorated castor oil
Sodium salt of phosphorated tea seed oil
Diglycol laurate
Sodium stearate
Sodium oleate
Sodium laurate
Ammonium linoleate
Ivory soap
Mannitan myristate

Mixtures of corrosion inhibitors may be used, a desirable mixture being formed by the use of a small amount of a compound quite soluble in water, such as sodium laurate, and a large amount of a much less soluble compound, such as glyceryl monolaurate. A particularly good mixture is a technical grade glyceryl monolaurate containing about 9% potassium laurate and 1.5% lauric acid.

The corrosion inhibitors will be employed in

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the ratio of about 2.5 to about 8 parts by weight to about 15 parts by weight of the film-forming colloid.

The oil employed in the coating is a non-corrosive, non-drying oil, suitably a petroleum hydrocarbon base hydraulic oil. The oil appears to act somewhat as a plasticizer and also, and possibly of greater importance, it appears to serve as a carrier or partial carrier for the corrosion inhibitors since the preferred inhibitors have long hydrocarbon chain groups which are attracted to hydrocarbon oils. It should also be noted that the oil in the film prevents the absorption of oil from oiled surfaces. To achieve its desired results, it is important that the oil remain fluid under the conditions of use. That is, the oil should have a low viscosity, a low pour point, and a high viscosity index. Stable hydrocarbon oils or mixtures of oils such as petroleum fractions have been found suitable. The oil will preferably be employed in the proportion of up to about 6 parts by weight of the oil to about 15 parts by weight of the film-forming colloid. It is to be noted that protection against corrosion can be obtained with coating compositions which do not include oil, although the oil does give definitely improved protection.

As a plasticizer for the coating, 3GH, a product of Carbide and Carbon Chemicals Corporation, believed to be triethylene glycol di-2-ethyl butyrate, has been found very satisfactory, particularly with vinyl resin compositions. Other compatible non-corrosive plasticizers may be used, such as 3GO (triethylene glycol di-2-ethyl hexoate) and dioctyl phthalate. The preferred proportion of plasticizer is from about 2 parts to about 6 parts of the plasticizer to about 15 parts of the film-forming colloid. The proportion of plasticizer does not appear to be critical and the quantity employed depends on the characteristics desired in the coating.

Suitable solvents for forming the coating materials are acetone, propylene oxide and methyl ethyl ketone; but any volatile organic solvent which will dissolve the resins to give a solution of sprayable viscosity may be used. It has been found that ethylene glycol monomethyl ether in proportion up to about 20 parts by weight to 100 parts of a miscible solvent for the film-forming colloid improves the ability of the composition to form web-like fibers when sprayed in air, notwithstanding wide variations in the humidity of the air.

Below are specific examples of spray material.

Example I

	Parts by weight
Vinylite VYNS	15
3GH	4
Oil 1255	4
Glyceryl monolaurate	4
Acetone	85
Ethylene glycol monomethyl ether	10

Vinylite VYNS, a product of Carbide and Carbon Chemicals Corporation of New York, is a copolymer of vinyl chloride and vinyl acetate (88½% chloride). This film-forming colloid is more impervious to moisture than are many of the film-forming colloidal materials and is practically insoluble in acids and alkalis.

Oil 1255, a product of the Standard Oil Company of New Jersey, is a low temperature, non-corrosive, non-drying petroleum base hydrocarbon oil.

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Example II

	Parts by weight
Vinylite VYNS	15
3GH	4
W. S. 491 oil	4
Glyceryl monolaurate	4
Methyl ethyl ketone	85

The W. S. 491 oil, a low temperature non-corrosive, non-drying petroleum hydrocarbon oil, is a product of the Standard Oil Company of New Jersey.

Example III

	Parts by weight
Vinylite VYHH	15
3GH	4
Oil 1255	4
Glyceryl monolaurate	4
Methyl ethyl ketone	45

Vinylite VYHH, a product of the Carbide and Carbon Chemicals Corporation of New York, is a copolymer of vinyl chloride and vinyl acetate (85 to 88% chloride) having a molecular weight in the range of about 10,000. Since Vinylite VYHH has a lower molecular weight than Vinylite VYNS, it is more soluble. Particularly good bridging coatings may be formed with Example I given above.

Example IV

	Parts by weight
Cellulose acetate butyrate	15
3GH	4
W. S. 491 oil	4
Glyceryl monolaurate	4
Methyl ethyl ketone	135

Example V

	Parts by weight
Ethocel, 10 cps., medium, ethoxy content	15
3GH	4
W. S. 491 oil	4
Glyceryl monolaurate	4
Methyl ethyl ketone	135

Ethocel 10 cps., medium ethoxy content, is a product of the Dow Chemical Company of Midland, Michigan.

Although each of the examples given employs glyceryl monolaurate as a corrosive inhibitor, other corrosion inhibitors of the class disclosed have been found very satisfactory and when substituted for an equal amount of glyceryl monolaurate in Example I have withstood the following test as has the material of Example I.

Cold rolled steel plates two inches wide, three inches long and one-eighth inch in thickness were polished with a built-up glued alundum polishing wheel after which they were sand-blasted. They were washed with a 5% to 10% solution of trisodium phosphate and rinsed with tap water until free from alkali. They were then rinsed in succession with distilled water, 95% ethyl alcohol and isopropyl alcohol followed by absolute alcohol (methyl, ethyl or isopropyl), and dried in a dessicator over calcium chloride. All the above operations were carried out as rapidly as possible. The plates taken from the dessicator were immediately coated by means of a spray. After having dried over night, the plates, protectively coated in accordance with the invention, were subjected to two tests known respectively as the fresh water test and the salt spray test. The plates were hung in vertical position on glass hooks (a) in a hu-

midity cabinet at 100° F. and 100% relative humidity for 200 hours and (b) for the same length of time in a cabinet at the same temperature which was filled with a salt spray made by aspirating a 20% salt solution. At the ends of the tests, the plates in each case were in perfect condition, and the films were tough and somewhat oily on their inner surfaces.

In using as a spray material any of the solutions given above the spraying is done at room temperature and a large part of the solvent is lost by evaporation as the particles of spray travel from their point of formation to the article. The film, as first formed, is somewhat wet but rapidly dries and becomes strong. Although solvents which are easily evaporable and dissolve the film-forming colloid at room temperature have been given above, it should be understood that heat may be used with such solvents as well as with liquids which are solvents only at elevated temperatures. The temperatures and pressures used as well as the distance of the nozzle of the spray gun from the article to be coated may, of course, vary widely. In the examples given, the following will be found convenient: pressure on air about 30 lbs. per square inch; pressure on spray material about 15 lbs. per square inch; distance from nozzle of gun to article with regular spray 4 or 5 inches, with bridging spray 14 or 15 inches. The corrosion inhibitors are greasy compounds and because of their presence in the film or coating together with that of the oil, the film or coating has a slightly oily or greasy surface which prevents firm adhesion of the film to the article.

Where there are no wharves or other facilities for landing freight from ships, for example, where the shore is sandy and the water is shallow, it is necessary to dump articles of freight into the sea at high tide as near as possible to the shore and then at low tide to rescue the articles. These articles, which are likely to have been exposed to humid atmospheres and to have been roughly handled by inexperienced stevedores, are more roughly handled, so to speak, by the waves and the tide and are exposed to salt water and to a salty and usually very humid atmosphere with the result that, even if corrosion of the metal articles has been prevented up to the time that the packaged articles were dumped into the sea, corrosion is likely to occur before the articles can be brought ashore.

A corrodible metal article prepared for shipment by being coated with a film and packed in a rigid container as described above, may be dumped into the sea on a sandy shore and allowed to be washed around by the waves and intermittently exposed to the atmosphere by the ebbing of the tide for a considerable period without danger of being corroded. In tests, machine guns, properly oiled and in condition for immediate use and prepared as above for shipment including the use of the formula of Example I, have been anchored at half tide to a sandy bottom by a rope which was long enough to permit the packaged gun to be rolled about by the waves and the tides, the rigid container being perforated, to make the test more severe, so as to permit free entrance of water and sand. Such packaged guns have been allowed to remain exposed at alternate intervals to sea water and to the atmosphere for periods as long as four weeks; and, when the covered guns were removed from their rigid containers and the films slit and stripped

off, said guns were free from corrosion and were immediately placed on mounts and fired. Although packaged machine guns have been discussed above, various other corrodible articles were also subjected to the same test. Among others, a radio set mounted in a wooden case was enveloped in the film and packed in a wooden box in which holes were bored. At the end of four weeks' exposure at intervals to sea water and the atmosphere, the box was taken from the sea, the covered radio set was taken from the box, the film or coating was stripped off, and the set was immediately connected to a source of electric power. It operated perfectly.

It is not necessary that the film or coating should be applied directly to a corrodible article in order to protect it against corrosion. For example, if a steel plate is placed in a receptacle made of material such, for example, as glass, which is impervious to moisture, said receptacle having an open mouth and this mouth is covered by a film of material containing a rust inhibitor and the covered receptacle placed in an atmosphere of 100° F. and 100% relative humidity, corrosion of the steel plate will be prevented for a long period. Apparently any water vapor which passes through the film into the receptacle carries with it some of the corrosion inhibitor and as long as there is a sufficient supply of corrosion inhibitor in the film, corrosion of the plate will be prevented. Of course, similar protection against corrosion may be provided if the metal article is wrapped say in paper and then the package is enveloped in a film which carries a supply of corrosion inhibitor.

Many corrosion inhibitors will not stand the rather severe tests which have been given above but will all serve as corrosion inhibitors at certain temperatures and relative humidities and for certain periods of time. There are, of course, a large number of substances which act more or less efficiently as corrosion inhibitors, the corrosion inhibitor and the film-forming colloid chosen depending upon the temperature and humidity to which the corrodible article is to be exposed and the length of time for which protection is required. In any case it will be noted that a surplus supply of corrosion inhibitor is maintained in proximity to the metal article which is to be protected. Just what takes place is not known but very possibly any moisture which passes through the film or coating picks up and carries with it some of the inhibitor so that as long as there is an adequate supply of inhibitor available corrosion will be prevented. The prevention of corrosion for long periods of time is thus due apparently to the fact that the film or coating has associated with it a surplus supply of corrosion inhibitor which becomes available as needed.

Although the invention has been described in connection with spraying a film-forming colloidal material containing a corrosion inhibitor upon an article which is to be temporarily protected, it should be noted that a separate film or sheet can be made as an article of manufacture, if desired, for example by spraying a coating upon a smooth surface, such as that of glass, and then peeling off the resulting sheet. Such a sheet may be used in packaging an article, for example, as set forth in application Serial No. 528,133, filed March 25, 1944, in the name of Robert W. Lampart, now abandoned, wherein small articles to be packaged are laid upon a sheet and then sprayed with a colloidal material which forms

over them a protective coating and retains them in place on the sheet.

Having described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. A moisture-corrodible article having thereon a temporary protective coating highly resistant to passage of moisture, said coating comprising a non-corrosive, non-drying hydrocarbon oil in quantity not exceeding 6 parts by weight, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, 2.5 to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water-dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty acids having from 10 to 18 carbon atoms, said coating being capable of being readily stripped off.

2. A moisture-corrodible article having thereon a temporary protective coating highly resistant to passage of moisture, said coating comprising from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, from 2 to 6 parts by weight of a compatible, non-corrosive plasticizer for the film-forming colloid, and 2.5 to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water-dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty acids having from 10 to 18 carbon atoms, said coating being capable of being readily stripped off.

3. A moisture-corrodible article having thereon a temporary protective coating highly resistant to passage of moisture, said coating comprising from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, and 2.5 to 8 parts by weight of glyceryl monolaurate, said coating being capable of being readily stripped off.

4. A moisture corrodible article having thereon a temporary protective coating highly resistant to passage of moisture, said coating comprising the following ingredients in the following amounts:

Parts by weight	
Copolymer of vinyl chloride and vinyl acetate containing at least 85% vinyl chloride.....	15
Compatible, non-corrosive plasticizer for the copolymer.....	4
A non-drying, non-corrosive hydrocarbon oil.....	4
Glyceryl monolaurate.....	4

5. A liquid, freely flowing composition comprising a non-corrosive, non-drying hydrocarbon oil in quantity not exceeding 6 parts by weight, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, and from 2.5 to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water-dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty

acids having from 10 to 18 carbon atoms, all dissolved in a volatile organic solvent.

6. A liquid, freely flowing composition comprising from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, from 2.5 parts to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty acids having from 10 to 18 carbon atoms, and from 2 to 6 parts by weight of a compatible, non-corrosive plasticizer for the film-forming colloid, all dissolved in a volatile organic solvent.

7. A liquid, freely flowing composition comprising from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose ethers, cellulose esters and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, and from 2.5 to 8 parts by weight of glyceryl monolaurate, all dissolved in a volatile organic solvent.

8. A liquid, freely flowing composition having the following ingredients in the following amounts:

Parts by weight	
Copolymer of vinyl chloride and vinyl acetate containing at least 85% vinyl chloride.....	15
Compatible, non-corrosive plasticizer for the copolymer.....	4
A non-drying non-corrosive hydrocarbon oil.....	4
Glyceryl monolaurate.....	4
Volatile organic solvent.....	95

9. A liquid, freely flowing composition having the following ingredients in the following amounts:

Parts by weight	
Copolymer of vinyl chloride and vinyl acetate containing about 88% vinyl chloride.....	15
Compatible, non-corrosive plasticizer for the copolymer.....	4
A non-drying, non-corrosive hydrocarbon oil.....	4
Glyceryl monolaurate.....	4
A mixed solvent of which 10 parts by weight is ethylene glycol monomethyl ether and 35 parts by weight is acetone.....	95

10. A pellicle for protecting a moisture-corrodible article from corrosion comprising a sheet highly resistant to passage of moisture, the sheet being formed of a mixture of a non-corrosive, non-drying hydrocarbon oil in quantity not exceeding 6 parts by weight, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, and 2.5 to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water-dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty acids having from 10 to 18 carbon atoms.

11. A pellicle for protecting a moisture-corrodible article from corrosion comprising a sheet highly resistant to passage of moisture, the sheet being formed of a mixture of from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble,

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film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, from 2 to 6 parts by weight of a compatible, non-corrosive plasticizer for the film-forming colloid, and 2.5 to 8 parts by weight of a corrosion inhibitor from the group consisting of at least partially water-dispersible alkali metal and ammonium salts and incompletely esterified polyhydric alcohol esters of fatty acids having from 10 to 18 carbon atoms.

12. A pellicle for protecting a moisture-corrodible article from corrosion comprising a sheet highly resistant to passage of moisture, the sheet being formed of a mixture of from 4 to 6 parts by weight of a non-corrosive, non-drying hydrocarbon oil, 15 parts by weight of a water-insoluble, film-forming colloid from the group consisting of cellulose esters, cellulose ethers and copolymers of vinyl chloride and vinyl acetate containing at least 85% of vinyl chloride, and 2.5 to 8 parts by weight of glyceryl monolaurate.

13. A pellicle for protecting a moisture-corrodible article from corrosion comprising a sheet

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highly resistant to passage of moisture, the sheet comprising the following ingredients in the following amounts:

	Parts by weight
5 Copolymer of vinyl chloride and vinyl acetate containing at least 85% vinyl chloride	15
Compatible, non-corrosive plasticizer for the copolymer	4
A non-drying, non-corrosive hydrocarbon oil	4
10 Glyceryl monolaurate	4

JOHN J. BROPHY.
BERNARD M. PINELES.
ROBERT C. PUTNAM.

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