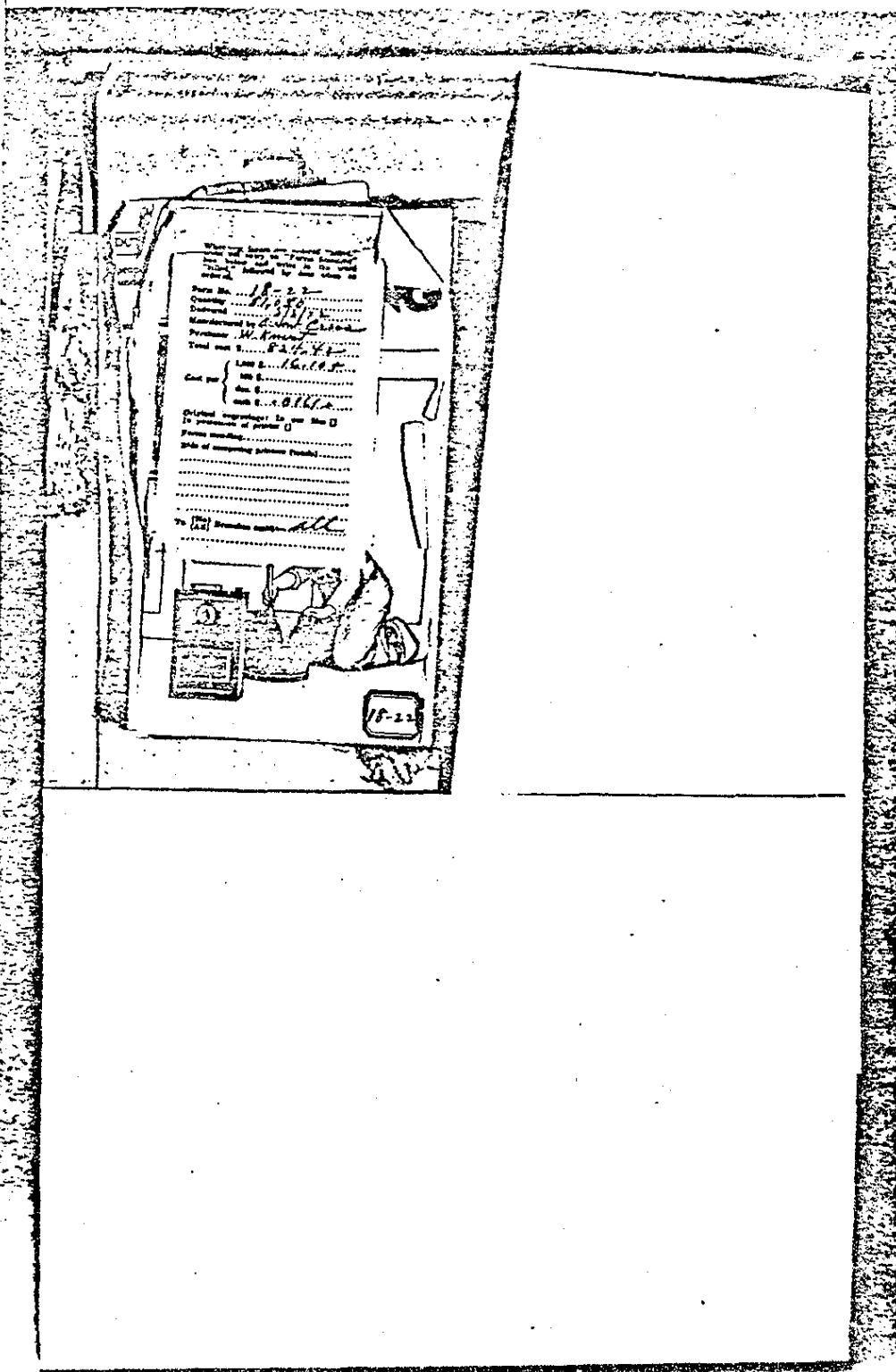


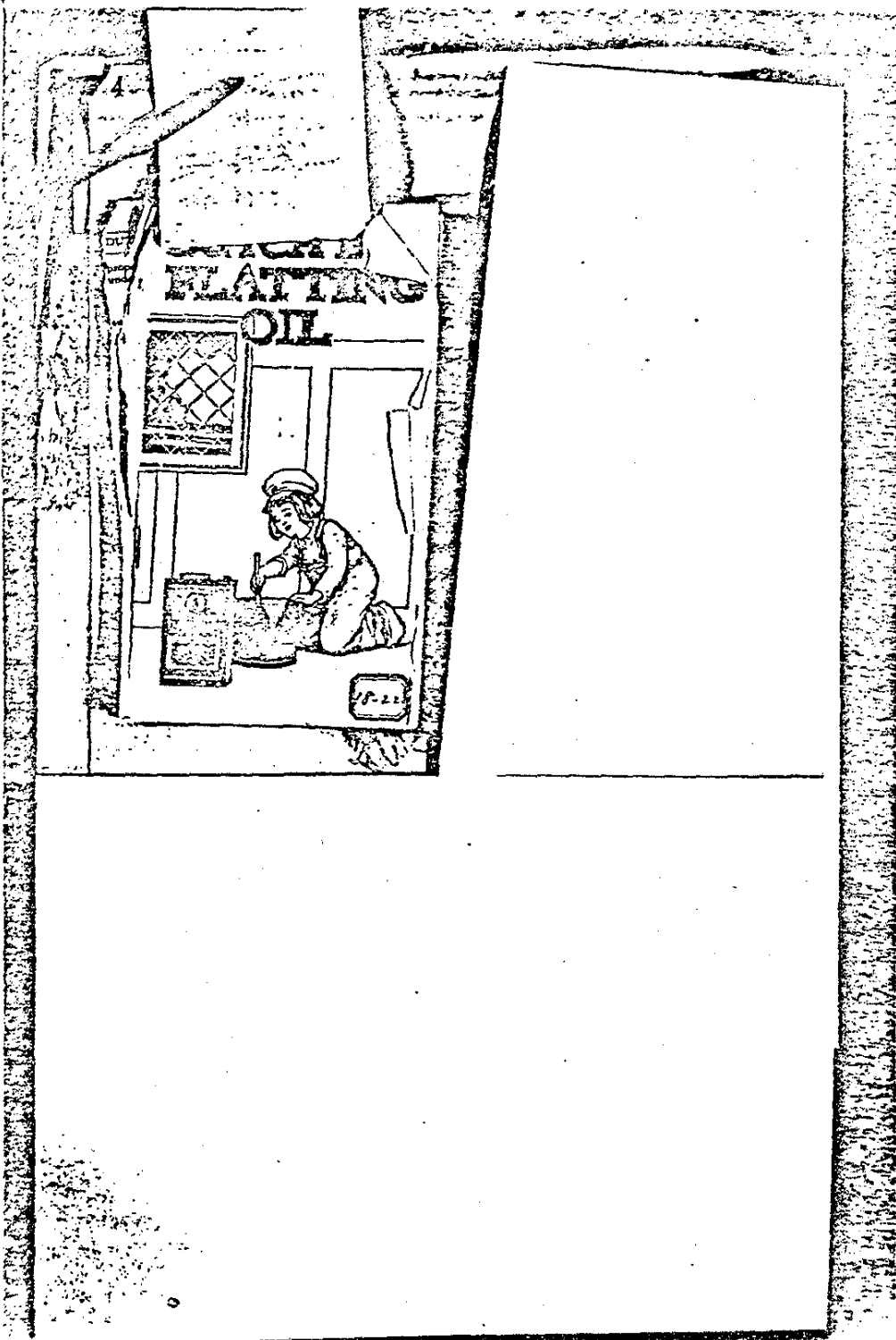
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DUTCH BOY FLATTING OIL

DUTCH BOY FLATTING OIL is
an oil which is prepared for use
with white-lead to produce durable
and attractive flat finishes, particularly for
interior painting. It is the result of much
careful study, both from a scientific
standpoint and as to its practical utility.
Paint made with it has exceptionally good
working qualities, and is so easy to apply
that much saving in labor results. It is
also extremely satisfactory to the painter
because he can produce with Dutch Boy
white-lead and Dutch Boy flattening oil a
soft, flat finish, of superior texture, which
is truly washable. Moreover, the paint
may be ordered in any tint which the
most exacting customer may require.

Flat vs. Gloss Effects

Paints may in general be described as
gloss paints and as flat paints. As the
word "gloss" indicates, gloss paints give
a shiny surface similar to the surface of
glass. Flat paints, on the other hand,
give a surface which is not glossy and
which, on microscopic examination, is
found to be slightly rough. The difference
between glossy and flat painted sur-
faces is due to the amount of oil or bind-
ing material present, the greater the oil
or binding material the more glossy the
surface, or vice versa.

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Flat surfaces are preferred to glossy surfaces for most interior decorative painting. There are many reasons for this preference. Flat surfaces diffuse or scatter the light reflected by them better than glossy surfaces. Rooms painted with flat paint are, therefore, more uniformly illuminated than if glossy paints are used. Furthermore, moderately flat surfaces are easier to keep clean than glossy painted surfaces. This is because glossy paints are high in oil and consequently do not dry as hard as flat paints which are low in oil. Dirt does not attach itself as firmly to hard paints as to soft paints, except in the case of a flat paint which contains such a small quantity of oil that the pigment is exposed. Such a flat paint dries hard because very little oil is used, but it is also difficult to keep clean, because the exposed pigment gathers and holds dirt. Enamels and varnishes give surfaces which are both glossy and washable, but this is because they are hard.

Flat surfaces differ from glossy surfaces principally in degree. The degree of gloss or flatness, as indicated above, is affected by the amount of oil present. In the case of decorative coatings, the most extreme flatness is obtained in the case of enamels and the highest gloss in the case of varnishes. Experience has proved, however, that for interior work extreme flatness, except perhaps for cel-

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ings is undesirable. A less extreme flat gives better results from the standpoint of decorative effects and durability.

Volatile Thinners

In general it may be said that flat paints cannot be made with pigment and oil alone. This is because the oil cannot be reduced in quantity for enough to produce a flat paint which is hard enough to be applied with a brush. Flat paints, therefore, always contain a certain amount of volatile thinner, i. e., a liquid which evaporates more or less quickly. The volatile thinner, after the paint has dried, practically all evaporates and leaves upon the surface the pigment and oil in such proportions as will produce a flat finish. Volatile thinners are simply added to enable the painter to apply paints and get certain practical results. Volatile thinners do not remain as a component of the paint after the paint has set and become dry.

Probably the best known volatile thinner is turpentine, which is invaluable in the preparation of certain kinds of paints and varnishes. For many years turpentine was practically the only volatile thinner available to the painter and he got along with it famously. It can be used today just as it has been used for centuries, if the painter is permitted to take his time and if enough turpentine is on the job to keep the work going along evenly and continuously. Turpentine

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has, however, a rather high rate of evaporation, so that when it is used in the preparation of flat paints the paint is made up too quickly to meet the needs of modern day painting.

Many other white-lead oils have a slower rate of evaporation than turpentine. Some of these have been used by painters. They have not, however, until in recent years, been sufficiently standardized and blended so that the right rate of evaporation has been obtained. It is primarily to meet this end that our Dutch Boy flattening oil is designed.

Flattening Oil

Our Dutch Boy flattening oil is a carefully blended composition designed to be used with white-lead to produce practical and artistic flat paints for interior decoration. This is its main purpose. It has been determined, however, to have other merits which commend its use in preference to turpentine. It gives more uniformly smooth surfaces and adds greatly to the spreading power of paint made from it. It can be used in every place where turpentine has been used to produce flat white-lead finishes and with such gratifying results that painters find it to their advantage to use it in all cases in place of turpentine. Furthermore, turpentine and white-lead paints require the addition of a drier of some kind. Our Dutch Boy flattening oil contains just

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enough drier to give satisfactory results with white-lead, without further addition. Another important point is that the setting of flat paint made with Dutch Boy flattening oil is slower than turpentine and white-lead, so that flat paint is smoother, the drying is quicker. Setting is due to evaporation of thinners, drying is due to oxidation of the varnish base.

Washability

Paints that are used for interior decorative purposes should be of a kind that will not easily soil or, if they do soil, they should be easily cleanable. It is, of course, not impossible to produce paints that will not be soiled by finger prints and the deposit of dust and dirt. The harder the paint film, the less is its tendency to soil.

There are two ways of getting hard paint films. One way is by mixing the paint extremely flat by cutting out the non-volatile oil, etc., and the other is by producing an enamel film, the introduction of enamel. Extremely flat paints are not washable in the usual sense, because they have not enough binder or non-volatile oil present.

Paints made by using our Dutch Boy flattening oil are not easily soiled and are easily kept clean by proper washing. Such paints combine the advantage of flatness with something approaching the hardness of enamel paints. They can be kept reasonably clean by washing with

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clean water and a good quality of hand soap. Such paints are, therefore, particularly of advantage where soiling is likely to occur; as, for instance, the trim of rooms, doors, door jambs, etc.

Variety of Interior Surfaces

The interior surfaces of buildings that require painting are of many kinds—wood, plaster, concrete, iron, steel, brick, stone and fabrics, such as wallpaper, etc. Each material requires more or less study for the suitable preparation of the surface and for undercoating, so that the beautiful results obtained by using white lead and Dutch Boy flattening oil can be secured. In the back of this booklet specifications are given for methods of treatment and discussed here are only some of the problems with which the painter is confronted and which it is impossible for us to cover fully by specification.

General Considerations

There are certain general considerations to which attention should be directed. They apply to practically all the cases here to be considered.

First: Paints should, as far as is possible, integrate with the surfaces painted. By integrate, we mean to penetrate and become a part of them. We say "as far as possible" because some surfaces are not porous and the best we can do in the

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way of integration is to use paints that will adhere tightly to such non-porous surfaces. On porous surfaces, therefore, paints should be used that will have a certain amount of penetration.

Second: Most paints contain linseed oil or other vehicle. Ordinary linseed oil is a liquid. It has, however, the property of becoming oxidized on the air and changing to an elastic solid. It takes time to bring about this change, and even when linseed oil has spontaneously passed from the liquid to the elastic solid state it is still undergoing change through further oxidation. It is desirable, in order to get good results with paint, that a reasonable amount of time be allowed between coats for the undercoating to become properly matured and hardened. Otherwise the soft undercoats will retard subsequent coats in hardening process. The best results can only be obtained by allowing as much time as is practicable between coats.

Third: Surfaces vary in their porosity. In their ability to absorb the liquid and to some extent the solid portions of paint. This would not occasion much trouble if the porosity of a surface remained were the same all over. Unfortunately, wood and particularly plaster vary in porosity from place to place and when painted the more porous spots appear flatter than the rest of the surface. If time and expense did not stand in the way the painter could continue to apply additional coats

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of paint until the suction of the porous spots was completely satisfied, and he would then obtain a perfectly uniform finish. This is not always practicable and special means must be devised for the securing of more uniform finishes, with relatively few coats on uniformly porous surfaces. This result may be obtained by the use of suitable size, as they are called.

Fourth: Porous surfaces, such as wood and particularly plaster, vary considerably in their moisture contents. In the case of wood, as it dries out it shrinks in a direction at right angles to the grain. If the wood is not thoroughly dry before painting, this shrinkage will take place after the paint is applied and a cracking of the paint will take place, as may often be seen at the edges of the panels of doors. In the case of plaster, if the moisture content is high the paint may not be able to penetrate and ungrains with the plaster. There may be even a tendency on the part of the paint to peel, due to this lack of intergration. It is necessary, in the painting of plaster, to secure at least a certain degree of dryness of surface. Just what is this desirable degree is hard to state, but it may be said that the drier the plaster the better, so far as painting results are concerned; or, what is the same thing, the older the plaster the better, for then it will be drier.

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Fifth: All linseed oil paints if acted on by strong alkalis are converted into soaps. Plaster made from hydrated or slacked lime, concrete, or cement contains, just when finished, a certain amount of free alkali or its equivalent. If this amount is too great, that is, if there is too much free alkali present, it will saponify the linseed oil and render it, to a certain extent, non-drying. It may also bleach out certain colors. If the plaster that contains much free alkali is allowed to stand, it will mature through the absorption of carbonic dioxide from the air, the carbon dioxide neutralizing the free alkali, and no fading of the colors will result.

Painting Wood

In the painting of wood there is not really very much difficulty except that some woods are more porous than others and the more porous woods must have their pores thoroughly saturated with paint. We refer to the open grain woods. Cypress requires no special treatment, as the pores tend to prevent linseed oil paints from hardening. If cypress receives a coating of thin liquid drier before the paint is applied, this trouble is corrected.

Painting Plaster

Most interior walls are of plaster. This plaster is sometimes applied on wood or

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met the fact, but in our larger buildings it is applied almost directly upon brick or building steel. Practically speaking, plaster consists of the under portion or rough coat, which is made of lime, sand, and water or some equivalent mixture, and a finish, which is principally hydrated lime. In some cases the hydrated lime is also mixed by slacking lime on the premises, but the more modern method is to use a hydrated lime packed at the factory and in which it is only necessary to add water to use. The lime finish is applied with a trowel and is smoothed off by outside time. This being done by a number of workers, there is no means of securing uniformity of plaster. Some spots are more porous than others. These spots are more porous than others. The plaster will describe as "hot spots." In some places the finishing plaster is thinner than in other places, so the rough stuff underneath is not always of an even surface. In some cases the plaster or the rough stuff may contain soluble salts which force their way to the surface and appear as an efflorescence (a flower-like soft crystal growth) which is called salt-pen. Sometimes this efflorescence will wash and thus painted coatings. In order to secure proper results in the painting of plaster within a reasonable time after the plaster is finished, it is often necessary to use what are known as

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Size in General

Some painters will not use size, and other painters claim that they are necessary. We believe that in some cases size is necessary, in view of the particular demands of building owners and their unwillingness to allow plastered surfaces to mature properly. In addition to porous places in plaster which can be corrected by size, a plaster often shows fine, hair-like cracks. Sometimes, no matter what the age of the plaster is, it becomes almost impossible to paint over these hair cracks without their showing thru. Hair cracks are sometimes referred to as "fine cracks."

There are different kinds of size, but we are not prepared to say which is to be preferred. All of them have given good and bad results, the good results being obtained by those who have used them properly and the bad results have been obtained by those who have used them improperly. We offer here suggestions based upon the practical experience which we have elicited from many painters.

Glue Sizes

Glue sizes are mostly used over priming coats of paint. Sometimes, if walls are known to be very porous glue size may be used directly upon the plaster. When applied over the priming coat the glue solution should be very thin and should be

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well brushed out. Whenever trouble has been experienced in the use of glue size it has been due probably to the application of too heavy glue coatings. The purpose of the glue size is to stop the surface. If the priming coat shows no porous spots or hair cracks, it is safe to apply subsequent coats without the use of the size. It is important that good glue be used, i.e. glue that has not become decomposed thru standing around, and it should be perfectly clean and well strained.

Varnish Sizes

Varnish sizes are mostly proprietary articles and vary greatly in quality. A good varnish size should dry to a hard film after flowing on glass. If the film does not harden so as to be slightly brittle in three days it should not be used, as the possibilities are that it will not give a sufficiently hard foundation for painting. Shellac is a good spirit varnish size, but is rather expensive. Boiled linseed oil thinned with turpentine may be considered in the varnish-size class and gives very satisfactory results, especially if mixed with a requisite amount of white-lead.

Other Treatments

In a different class are the chemical methods of treating plaster walls for the neutralization of the alkali and to some extent for the sealing of the surface.

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Twenty to fifty per cent solutions of zinc sulphate in water, depending upon condition of plaster and amount of free alkali present, have been recommended for this purpose. The free lime combines with sulphuric acid in the zinc sulphate and liberates the zinc hydroxide, which is not alkaline, relatively speaking. Sulphate of aluminum and sulphate of iron have also been used. Sulphate of iron, however, discolors the plaster and makes it more difficult to hide with paint. The practice of neutralizing the free lime in the plaster is a good one, but it should not be resorted to unless necessary, as it involves additional expense and a great deal of work. This applies as well to the use of sizes.

When to Apply Sizes

Some walls require no sizes, but it is hard to tell whether sizes are necessary until the work has been commenced. It is therefore the practice of many painters to first apply their priming coat to plaster walls, after which they are in a position to know whether to apply a size over it or not. Zinc sulphate solutions, if used, must, however, be applied to the unpainted plaster. Usually varnish sizes are applied to the plaster, although some painters claim to use a varnish size over the priming coat.

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Purpose of Stain

It should be borne in mind that stain is of use only for the purpose of enabling the painter to produce uniform finishing so that hair cracks and porous spots will be covered over. This, however, does not preclude the possibility of plaster cracking subsequent to painting, the cracks extending through the paint film. It is seldom that this cracking takes place until months after the work is finished. This cracking may be due to a continued spring of the plaster or to the contraction and expansion with the change of temperature.

Fabric Coverings

The only way to avoid this is to cover the plaster with muslin or a specially prepared fabric of some kind, the edges being burred closely together after careful trimming. This method of treatment, if the owner will stand the expense, is the surest method for securing a permanent surface. Fabrics applied in much the same way as wall paper can, when dry, be painted so that they will be indistinguishable from ordinary painted plaster, except that they will be more permanently free from cracks. Fabrics applied in this way also protect the plaster from mechanical injury.

Painting Iron and Steel

It is unnecessary to say more here than that iron and steel should first be thoroughly

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cleaned and receive a coating of pure red-lead and oil, after which no trouble will be experienced in getting good painting results over the red-lead coating.

Painting Brick

Brick varies very much in its porosity. All that has been said with regard to plaster applies to brick, except that the best practice is to paint first with boiled linseed oil and white-lead paint properly tinted and to some extent thinned with turpentine to get proper penetration.

Painting Stone

There is usually no difficulty in painting stone, as it is ordinarily only slightly porous, and a boiled linseed oil and white-lead paint thinned with turpentine is usually satisfactory.

Stippling

Altho Dutch Boy flattening oil is primarily intended for the production of suitable finishing paints, it has been found also to be extremely satisfactory in the preparation of some of the paints used for undercoating. This will be noted in specifications in the back of this booklet. Considering it, however, in connection with finishing paints, the composition of the paint and the method of application vary according to the kind of finish desired. Paint, may, after it has been brushed on, be left finished in that condition or it

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may be stippled. The advantage of stippling is that it gives a more uniform surface and a certain texture often very desirable. Furthermore, a paint that is to be stippled does not require so much attention in the brushing out, as inequalities caused in the application by the brush are corrected by the stippling.

Paints that are to be stippled may be somewhat stiffer than those that are not to be stippled, and they may vary in stiffness according to the degree of stippling that is desired. The stippling brush brings little points of paint out on the brush leaves the surface, and these points of paint tend to flow back more completely with stiff paints. Thin paints are of course produced by the use of more Dutch Boy flattening oil with the white-lead, and stiff paints are produced by the use of less flattening oil with the white-lead. Glazing colors can be applied over stippled surfaces if desired.

Glazing

It will be found that Dutch Boy flattening oil makes an excellent glazing material for Tiffany blends and all other work requiring a glazed finish. Use the oil just as it comes in the can, applying a very thin coat.

Care of Oil

Dutch Boy flattening oil contains oil varnish, so that if the flattening oil is exposed

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to the air it tends to absorb oxygen, and the oil varnish contained in it may, if the exposure is long enough, become insoluble in the volatile thinners present. It is therefore important to keep air away from Dutch Boy flattening oil. In other words, the containers in which it is kept should at all times be kept closely stoppered and sealed. A certain amount of oxidation can take place without impairment of the oil, but if the oxidation goes too far the oil becomes worthless.

Tinting

In making paint from white-lead and Dutch Boy flattening oil, follow the same practice as in making paint from white-lead and linseed oil. Add the oil a little at a time. Stir constantly. Tint early with high-grade colors-in-oil or the best Japan colors, thinning the colors before adding them, so spreading consistency with Dutch Boy flattening oil. If the colors used are rich in oil and a large amount of colors is required, some of the oil should be drawn off before the colors are added to the paint. Drier is sometimes needed where colors rich in oil are used.

Formulas

The formulas on the following pages represent what we believe to be the best painting practice in most average conditions. These formulas, however, are merely given as guides and the experi-

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exceed painter can at his discretion change the formulae to suit the particular needs of the job in hand.

Be sure to allow plenty of time for each coat to dry. Twenty-four hours should be allowed between coats and forty-eight hours will make a better job. Of course, there are many times when modern rush requires that the second coat go on sooner and it may be said that paint made of Dutch Boy plating oil and white-lead stands up in these emergencies remarkably well.

New Plaster Walls (Inside)

Priming Coat

100 pounds (2.55 gals.) Dutch Boy white-lead
7 gallons pure bottle-brushed linseed oil
1 gallon pure turpentine

(This formula makes about 11 gallons of paint and will cover about 1,200 square feet, one coat.)

75 bottle-brushed linseed oil, 7 gallons pure turpentine, and 100 pounds Dutch Boy white-lead will make a good second coat. However, and will often eliminate trouble with unsatisfactory results. In such cases as the above and previous ones, contrary to the belief of many, bottle-brushed oil can be used.

How far any paint will spread depends a good deal on the smoothness of the surface and also on the workman. The figures

DUTCH BOY PLASTING OIL

given here are at best, therefore, only approximations, but as all the estimates are based on practical tests, they will be found to be a fair average.

In dealing with porous or "fat" walls, it is often desirable to modify the priming coat formula by replacing some of the linseed oil with varnish. Use a good Klean gum varnish and not a resin varnish.

When an impervious varnish or glaze coat has been used, an priming coat is required.

If the priming coat does not properly fill and seal the wall surface, the body coat formula should be altered by replacing some of the linseed oil with raw linseed oil and letting enough dry to dry the linseed oil.

Body Coat

100 pounds (2.55 gals.) Dutch Boy white-lead
2 to 3 gallons Dutch Boy plating oil

(This formula makes from 9 to 4 gallons of paint and will cover from 1,000 to 4,000 square feet, one coat.)

Finishing Coat—Flat

100 pounds (2.55 gals.) Dutch Boy white-lead
2 to 3 gallons Dutch Boy plating oil

(This formula makes from 1 to 4 gallons of paint and will cover from 1,000 to 4,000 square feet, one coat.)

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DUTCH BOY FLATTING OIL

Finishing Coat—Eggshell Gloss
100 pounds (2.55 gals.) Dutch Boy
whitewash
1/2 gallon 1st enamel varnish
1/4 to 2 gallons Dutch Boy flattening
oil

(This formula makes from 5 to 5 1/2 gallons of
put and will cover from 1,000 to 4,000 square
feet, one coat.)

Two-Coat Work

Three-coat work is recommended for all
interior painting. Not infrequently now-
adays, however, the painter is called
upon for a two-coat job. In such cases,
use the priming and finishing coats given
above, omitting the body coat. To make
two coats cover better, the first coat
should be made a little darker than the
second coat.

Two coats on new work cannot be
expected to cover as well as three, nor to
give as fine a finish. In fact, it is not
considered the best practice to use only
two coats on new work. Experience has
shown that three coats are necessary for
entirely satisfactory results and it is best
therefore to play safe always by using
three coats.

Special Finishes for Wood (Inside)

White (Flat or Eggshell Gloss)
For flat or eggshell gloss finish over a
suitable undercoating on woodwork, use

DUTCH BOY FLATTING OIL

Scrape formula for finishing coat to give
under "New Plaster Walls (Inside)."

Irony Finish

For every finish, the last coat with
suitable undercoating to give desired shade.

Flat Finish for Brick (Outside)

For flat masonry finish for outside
brick, stone, or concrete, over a suitable
undercoating, the formula for Finishing
Coat—Flat, given under "New Plaster
Walls (Inside)," makes a paint which is
superior to a tar-based flat paint. The
paint is improved by the addition of a
suitable quantity of new linseed oil and
the necessary color.

Brick-Red Finish

For flat brick-red finish for outside brick
over a suitable undercoating, the color
thinned with Dutch Boy flattening oil makes
a better paint than when thinned with
turpentine.

Repainting Plaster Walls (Inside)

Before repainting, walls should be care-
fully cleaned and smoothed. If the work
is to be done over old paint having a high
gloss, the surface should first be rough-
ened with sandpaper.

No priming coat is necessary in re-
painting. For body and finishing coats,
see the more formulae for "New Plaster
Walls (Inside)."

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