

generate a gas that will push the paint out and cause blisters. The remedy consists in building up the surface on a substantial plan, namely, *elastic throughout*; but elasticity amounts to nothing if each coat is not perfectly dry. When blisters first make their appearance, by sticking a pin in them and letting the air out, they may be pressed back with the thumb. After blisters have made their appearance, scrape off the paint in the holes, make a few indentures with a brad-awl in the wood; then give a coat of shellac, and finish with about three puttyings, over as many coats of lead.

CRACKING is a sort of *half-brother to blistering*. The majority, if not all the cases of cracking, are caused by introducing non-elastic with elastic paint, except where joint cracks from not being well dried, or from using poor varnish; but these varnish cracks can be distinguished from paint-cracks, as they affect the varnish surface only. I firmly believe that if a job be painted elastic throughout, with the single exception of one non-elastic coat, *this one coat has the percentage in its favor of cracking all the rest.*

REMEDY.—Where care is taken to have the coats of paint uniform throughout and well dried, there need not be any fear of cracking. The above suggestion does not apply to impure paints containing barytes, but it is made on the supposition that all the ingredients are at par.

FATTY AND LIVERY PAINT.—There can be no doubt that fatty or livery paint is caused by oxidation. When paint becomes fatty, it may be remedied by adding turpentine and running it through the mill; but when it comes to the state known as "livery," it is done for, so far as turpentine, oil, or benzine is concerned, as it then becomes insoluble. It is, however, soluble in laudanum: but the cost of the cure would then be more objectionable than the disease. I think that this subject, as well as the remedy, belongs more properly to the chemists, for painters, as a class, have to work much and experiment but little. The only remedy, so far as I know, consists in grinding our own lakes, etc., and in grinding no more than is to be used at the time: or, if prepared colors are preferred, get them fresh by ordering a small stock at a time. A recent letter received by me from Charles Moser & Co., manufacturers of colors, gives the following facts in this connection:

"DEAR SIR: Yours of the 22nd inst. is received and contents noted. *Some of the lakes will naturally liver in a comparatively short time when ground in japan; or, in other words, when incorporated thoroughly with other chemicals.*"

FADING OF COLOURS.—Barytes or other adulterations in paint will cause it to fade.

BEING GRITTY is caused from not being thoroughly mixed or ground fine.

CLOUDING OF LAKES, ETC., is due to the fact that there is not enough varnish used, to dry with sufficient gloss.

CRAWLING AND DRAWING.—Paint and varnish will both crawl and draw on work that is cold, and, in some instances, in warm weather, where the surface has not been previously rubbed. Rubbing the places over with a damp chamois will obviate the difficulty, but the work must be gone over immediately. I will now refer to varnish troubles.

SWATING, GOING GREASY AND GLOSSY.—Varnish that is rubbed before it is dry will, in most cases, produce the above-named results.

GOING SANDY OR SEEDY.—Varnish that does not contain the oily qualities requisite for durability has a tendency to go sandy or seedy. This is especially true when turpentine is used for thinning purposes.

GOING-IN, SINKING-IN, OR SADDING-DOWN.—I believe I am safe in saying that *thirty per cent. of all the work painted in the United States results in sinking-in.* Green timber will produce it; but then, as most timber is dry, this would not make up the full thirty per cent. I think the cause lies in the foundation for the paint, which is not mixed with a sufficient degree of binding quality, for compactness of body after oxidation takes place. Paint, that does not contain these qualities, soon has its life and elasticity sucked up by the hungry wood. Then, in consequence, a draw is made on the varnish surface, for life to sustain the under-coats. The varnish, being insufficient to supply so many coats, must give way. *What is wanted is uniformity of coats throughout, all being made elastic, for by this means only can varnish be made to stand out well.*

PITTING.—The causes of pitting I am not able to point out in full, but I am satisfied that a damp current of air will produce pitting in some instances, and also an over-damp room.

CHIPPING AND FLAKING.—Is it not suggestive when I say that varnish will not chip or flake on an elastic surface?

EMPLOYERS TO BLAME.—Employers are, in many instances, to blame for the tricks of paint and varnish. Let us take the case of a painter working in the city, in an old-established shop, where they have ceased to buy goods of every commercial agent that happens in and claims his goods superior to all others. Experience is a dear school-teacher: they have found out that "all is not gold that glitters;" thus they buy their varnishes and paints from reliable firms, and of grades which they have tested and know to be good. The painter works with these classes of goods for years, and knows under just what circumstances and conditions they will act best. Now, place him in a country shop where he has, perhaps, *twenty brands of varnishes and japans* standing around in cans—each one is better than the other, and at every arrival of fast freight, new lots are added. He is told to help himself. He remonstrates, saying that he prefers using something he has tested, but is met with the reply that "the stock on hand must be used up first!" There is no alternative; but the long train of evils which follows is not unexpected by him.

PERISHING FROM AMMONIA.—In the cases of perishing by ammonia that have come under my notice, I have observed that the majority and the worst cases were painted with chemical paints, lakes, etc., while those that were painted with mineral paints withstood its action much better. About three months ago, a job came under my notice that had been painted with mauve or purple lake six months previously. The color was gone—that is, its original color had departed, leaving it the shade of a drab-yellow. The varnish hung to the surface in broken patches, and in passing my hand over the panels, it fell off almost entire, in the form of resinous dust. The gearing was painted black, and although the varnish gloss was gone, yet it showed no signs of flaking as the body did. I interested myself enough to go to the stable where this vehicle was kept, and found that it was in close proximity to the manure heap and horse-stalls, and that it had no floor, and there was an odour of dampness. There are two livery-stables within a hundred feet of our shop. In one, they keep their vehicles on a ground floor and close to a manure heap, and the consequence is that all their jobs soon lose their varnish lustre, and, also, I have noticed that they are not washed off after coming in from a trip, but are run into the house regardless of mud, etc. For this stable we built three piano-boxes last spring, and have repaired not a few, and to-day they look as though they were at least half-a-dozen years old, the varnish lustre having all gone. In the other stable, they keep their carriages on a plank floor, but close to the stalls; I have never known them to miss washing off their jobs after being out, and they also take great pains to chamois them dry. For this stable we built one piano-box and three light buggies last spring, besides repainting ten other jobs, and all of them to-day look as bright and fresh as the day when run out—felloes and scratches, of course, excepted.

A few remarks, and I will close. As regards perishing of varnish, it matters not whether in close proximity to ammonia fumes or not, if a carriage is kept in a damp house, not ventilated, and not washed often and well chamoised, it will lose its lustre, besides clouding and turning blue. The only remedy for this, where carriages must be kept in damp houses and stables, is frequent washing, and, more particularly, chamoising dry, together with as much exposure to the air as possible. If the carriage-making fraternity would air this subject a little more, they would, perhaps, come to understand that *varnish-makers and painters* ought hardly to be held responsible for the laws of nature.—*Boston Hub.*

JAPANNED WARE.—The important manufacture of japanned ware can claim a high antiquity, the art of japanning having been practiced in China and Japan for an indefinite period before our first intercourse with those countries. This beautiful lacquer or varnish not only preserves the iron from rust and gives it a cleanly surface, but at the same time affords opportunity for the most elaborate and varied ornamentation. Articles in this ware frequently owe by far the greater part of their value to the decorator's art. Japan painting is, in fact, a distinct artistic profession, and has in its time educated more artists than any other. More than one Royal Academician has graduated in the *japanner's atelier*. As with tin ware, the early productions of this class were, no doubt, clumsy and ugly enough, and for the same reason, that it was difficult to get iron that would bear bending and twisting, or that would be sure to keep a good even surface. The modeller and stamper has now free play, and the decorator has no reason to fear that his work will be spoiled. Tea trays, waiters, coal-vases, canisters, &c., are among the staples, and the