THE A B C OF CARRIAGE PAINTING.

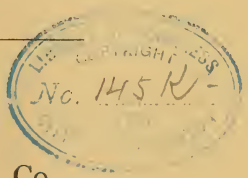
National Bank Note Co N.Y. Lithographed.

THE MURPHY

A,B,C, SYSTEM

OF

CARRIAGE PAINTING.



MURPHY & Co.,
VARNISH MAKERS,
Newark, N. J.
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1878.

CARRIAGE PAINTING.

Its Difficulties and Delays.

How few who contemplate the tempting surface of a coach panel realize the labor and responsibility of producing it. Of all the arts brought into play in the construction of a carriage, that of the Painter is by far the most important. To his care are consigned the results of the labor of all his associates. A poor joint in the woodwork, or a rough ironing job, may escape notice or be concealed by the paint and varnish, but every brush-mark or blemish in the painting is apparent to a child. The job is given to the painter to *finish*, or, in other words, to *perfect*. Let it be never so full of flaws, he is expected to cover and conceal them, every one. He must take care of the looks of the work, make everything right, and have it hold out right. And, strange to say, he oftentimes accomplishes this, too, notwithstanding the fact that he runs the gauntlet of innumerable and subtle adulterations in his materials,—any one of which may wholly spoil his work,—and must moreover contend with the possibly destructive influences of heat, cold, dust and moisture. Who, with his work beset with an equal

number and variety of hidden possibilities of disaster, acquits himself with greater credit?

Defective Materials.

But of all the difficulties which surround him, the most peculiar and trying are those, alluded to, growing out of the inherent obstinacies and deficiencies of his materials. Hence, while we give him all honor for triumphing so often over these dangers and defects, by patience, tact and persistence, is it not proper to ask whether a system should be perpetuated, which throws so much responsibility on one department, and many times gives so much power to one individual to make or mar the work of all? Can the Carriage Builder afford the time for his workmen to prepare their own materials? Can his business afford the delays incurred by humoring these primitive materials and processes. Has not the very general discontent with which the old time methods are regarded, a reasonable and sufficient cause? Are there not substantial business reasons for this discontent? Ought it to take six to eight weeks to paint a carriage? Ought it to be necessary that painters should be trained artists, in order to turn out perfect work? Can the Carriage business of to day, submit to this delay, or afford exclusively high priced labor? The prevailing system of Carriage Painting,—its materials and its methods, is pretty generally the same to-day that it was fifty years ago. Is it, therefore, too much to ask, if these anciently

respectable painting processes are not manifestly out of harmony with present necessities. And if other and better processes ought not to supercede them?

The Painter Controlled by His Materials.

Yet it is not the fault of the Carriage Painter that this state of affairs exists. No class of mechanics is more keenly alive to the growing demands on them for improvement, nor has any class of workmen put forward more earnest endeavors to adapt their methods and materials to the requirements of carriage building. The solution of the problem—"How can a carriage be painted quickly and yet durably?" has taxed the thought and enlisted the effort of every Carriage Painter in the land. To gain rapidity without sacrificing permanence and durability, to safely reduce the work of weeks into the work of days, to paint perfectly and yet with push; these were the results sought for. Rapidity alone was easily attainable by a liberal use of driers; but this proved prejudicial to durability. Experimental changes and variations of the old system have been tried, and sufficiently, it may be asserted, to fully demonstrate the impossibility of conjuring up speed and durability, with materials the very nature of which imposes slowness and prudence.

Where are the Ready-Made Primers?

If it be so evident then that all these annoyances are due to the materials, one would naturally ask, why is he

not supplied with better? In these days of organized manufacture, when every department waits upon every other, and is necessarily and properly limited to the supplying of some one particular thing for which it is specially equipped, it is certainly not unreasonable in the Carriage Painter to expect that he should find his materials ready prepared for use. In the other branches of carriage construction, the workmen have simply to acquire dexterity in the use of their tools. The smith finds his metals ready at hand, and has only to shape them. The body-maker finds his woods cut and seasoned, needing only to be fashioned and fitted. Neither, at all events finds it necessary to smelt his working materials from the ore, or procure them from the forest. Quite different is it with the painter; for not only must he be an artist in the use of his materials but a chemist as well to compound them from their crude ingredients. We might surely as soon expect to go back to the days when the woodworker hewed out his every hub, spoke and felloe, the smith hammered out his springs and other ironwork; as to continue in a system which allows the Painter to mix his colors and prepare his primers and roughstuffs. The era of ready-made wheels, and ready-made springs, calls for ready-compounded surfacers. And in no department, it seems to us, can the Carriage Manufacturer more wisely exercise a liberal encouragement than by supplying his Painters with the best materials. But who shall furnish them?

The Duty and the Privilege of the Varnish-Maker.

This seems to fall naturally within the province of the Varnish-Maker. It is not many years ago that even making and melting his varnishes was one of the many responsibilities of the Painter; but from this office as well as that of grinding his colors, he has happily been relieved. It is only within recent years that those engaged in the manufacture of varnish have awakened to the necessity of providing for that most important of all the materials used by the Painter, viz., his primers and roughstuffs, as they are commonly called, which constitute the foundation of all his work.

Attempts at Reform.

While allowing all credit to what has been done in this direction, we feel sure that the authors of these pioneer efforts themselves would scarcely consider that they had left their task completed, nor that their efforts have done much more than to pave the way for something more complete and more radical in its reform. So far these efforts have all been compromises, not resolute departures; and hence the failure of any single one of them to obtain recognition as a positive reform. A new system, to be better than an old one, should be able to overthrow and universally supplant it. Opportunities surely have not been denied the newer methods for accomplishing this result. They have been received with open arms by painters everywhere, and have been patiently investigated by craftsmen who, regard-

ing the old system as having long out-lived its day and generation, were only too glad to welcome any promised advance in the art. These attempts, however, have always fallen short of realizing the painter's hopes, for the reason of their being only half-hearted attacks at one or the other end of the old-time methods, and hence only partial successes, consisting, on the one hand, of some novel primer of a pitchy character needing to be followed by lead coats and roughstuffs, or else a ready-mixed roughstuff requiring to be preceded by the old system, lead and oil.

Genuine Progress.

Unlike all other attempts at improvement on the old order of painting, the A, B, C, System is an absolute departure and a radical and positive reform. It is not a compromise, but, instead, possesses an originality that is individual and distinct.

As to what the A, B, C, System is, we commend the reader to a careful perusal of the following pages. What it will accomplish in the way of supplying the deficiencies we have described, outside of such statements as we shall make as to its practical trial and approval, will best be judged—in fact, can only be judged—by actual trial. We can only say that the results we have aimed at, in its development and preparation (through some years of experience and investigation) have been to simplify the labors of the painter, to reduce the perplexities and un-

certainties which pertain to his work, and to make it possible for him to accomplish uniformly satisfactory results, with a rapidity heretofore unknown.

A REVIEW OF THE OLD SYSTEM.

Deviltries of Paint and Varnish.

We have intimated that the present materials used in procuring a surface to a carriage body or gear are radically and inherently defective. We presume that no one will dispute that they are so; indeed, these evils have been for years the subject of debate at painters' conventions, and of discussions in essays, etc., etc., but testimony is not needed to display a fact so patent to every painter's daily experience. These evils form a large part of the whole group of painters' trials known under the apt title of "deviltries of paint and varnish." We propose, therefore, as a preliminary to the unfolding of the reform proposed in the A, B, C, System, to discuss these evils in detail.

The Foundation Coat.

It is universally conceded by painters everywhere, that of all the coatings employed in the building up of a surface on either wood or iron, the priming coat is pre-eminently the most important. This coat is the foundation on which all subsequent coatings must depend. Render this foundation solid, substantial and secure, and your work is well begun. Does average mixture for lead and oil priming

accomplish this? Let the discouraging experience of painters generally make answer.

The Lead and Oil System.

With every experienced and observant painter of to-day, the fact that corroded lead cannot be absorbed by wood to the extent of becoming indissolubly incorporated into its grain or inseparably cemented on to its surface by means of *linseed oil alone*, is a positive conviction The difficulty is that there is a disintegrating influence behind; that is, underneath the lead and oil coating as well as outside of it, a fact which must not be disregarded. The interior dry and thirsty fibres of a well-seasoned piece of wood are bound to exert their utmost power of absorption to rob the lead of its oil, and atom by atom they will get it, too, for like Barkis, the oil "is willin'," and the lead thus drained becomes in time a brittle crust, liable to peel off, crack and flake. It cannot but be admitted, therefore, that the essential deficiency in a lead and oil filling, centres in the fact of its being the helpless victim of a wooden thief, capable of stealing away every whit and title of its adhesive property, and thus depriving it of all elasticity and power to endure.

Grain Showing.

Now to our mind the unsatisfied thirst of these interior fibres offers a ready solution to the puzzling problem known as grain showing. What painter has not many

times been greatly surprised to find that a carriage body, on which he expended extra care, and the surface of which, when the vehicle went out from his shop, was as smooth and solid as glass, has, in two or three months, come to exhibit a very bad case of grain showing? And what is the explanation of it? Why simply that the absorbing force of the interior fibres has wrought the change. It has gradually removed the oil which at first filled up the exterior cells of the wood, drawing it inward, and at the same time has given an opportunity for the lead coat, which is yet in a degree elastic, to yield to the inward movement and pack itself into the grain in such a way as to produce a delineation of the superficies of the grain, on its own outer self. Is any better evidence than this wanted, as a proof that wood is bound sooner or later to be master in the lead and oil process of surfacing?

Cracking, Blistering, etc., etc.

The same explanation holds for the whole series of disturbances in the surface, described by such terms as cracking, flaking, blistering, peeling off, etc., etc. However careful may be the after treatment and however perfect the pigment of color and varnish afterwards built up, the uneasy and unsteady foundation of lead and oil disturbs the whole subsequent fabric.

Will some good friend reply to this, that lead priming has endured for years? Admitted. So it has, and may yet be made to. Given the purest lead, the purest oil,

perfectly seasoned wood, and *time*, (much time) and oily coating, and lead will cling a good long while. But who can spare the necessary time for this result in these impatient days? Who will forswear Japans and driers, and spend two months or more in simply leading?

The Good Old Times.

This leads us then to the consideration of the slowness of the lead and oil process. What carriage builder or carriage painter of experience, and wanting a durable job, would give a lead and oil priming coat less than five days to dry, or would use less than three coats of lead? Here are nine days, we will say then, to be given to leading.

In some shops it is yet the custom to give eight to ten days drying time to a lead and oil priming, and to follow this with three coats of lead, each coat allowed several days to dry. And then comes on the roughstuff—four coats—and each of these several days, and three days, or perhaps a week, for putty drying. How is this for "quickness and dispatch?" Twenty days for leading, and quite six weeks in working up a surface.

Now there is no getting away from the fact that to thoroughly paint over a carriage body so many *separate times*, involves a considerable amount of work. It is hand work, too, and therefore expensive work.

Nor is this the worst feature consequent upon this inordinate loss of time. It very seriously prejudices the sale of carriages. A prominent Carriage Builder recently re-

marked to the writer, that if he could avoid the delays in his paint shop his business might be doubled. Carriages are no longer ordered a year in advance, or the painter given his own time. Ready made work is in great demand, and many jobs are ordered in the wood, and customers cannot be made to realize any adequate cause for delay, and are always liable to accept a hasty and consequently short-lived finish, which the eager salesman is only too prone to give him.

COMPARATIVE TIME SCHEDULE.

LEAD AND OIL SYSTEM.

Surfacing only.

BODY—AVERAGE JOB.

Priming and leading—three coats	9 days
Putty	1 day
Rough stuff—four coats	10 days
	20 days

GEAR—AVERAGE JOB.

Priming and leading—three coats	9 days
Putty	1 day
	10 days

A, B, C, SYSTEM.

Surfacing only.

BODY—BEST JOB.

Surfacer A—one coat	1 day
Surfacer B—one coat	1½ days
Putty	1 day
Surfacer C—three coats, one day each	3 days
	6½ days

GEAR—BEST JOB.

Surfacer A—one coat	1 day
Surfacer B—one coat	1½ days
Putty	1 day
Surfacer C—one coat	1 day
	4½ days

Please observe that this estimate is for the *best work* and *slowest* time; under favorable conditions, or on ordinary work this time can be considerably reduced, as all who practically investigate the new system will discover.

MAKING HASTE SLOWLY.

All sorts of experiments for hastening the old process, and for shortening the time required for oil to dry, have been attempted, but never yet without imperilling the durability of the work. As you *shorten* the drying, you *limit* the wear, at the same time endangering safety and success. Indeed *swiftness* is *not compatible* with *permanence* in the old process, and the nearer you approach the one, the farther you get from the other. So thoroughly is this fact grounded in the experience of painters everywhere, and so universally is its truth established, that to speak to a painter of a quickly finished job, is to invite him to regard it as short-lived.

LABOR AND EXPENSE OF THE LEAD AND OIL SYSTEM.

The great amount of labor necessary in the lead and oil method, as compared to the small amount of work re-

quired in the newer method herein advocated, will be noticeable to all. Labor is the expensive item in carriage painting, as it is in most of the mechanic arts, and to save labor, therefore, is to save money.

In the lead and oil system, the disproportion between the cost of the material used and the cost of the labor necessary to put the material to use, is very noticeable. Owing to this, not a few parties, both manufacturers and painters, are led to credit their stock with not costing them much. A shilling per pound for lead, seventy-five cents per gallon for oil, and fifty cents per gallon for spirits of turpentine, with perhaps fifty cents a quart for Japan, seem cheap enough certainly, but does the actual cost of these end with the price per pound and gallon paid? Has there not to be considerable labor, (and that the highest-priced labor in the shop, viz: that of the foreman), expended on each of these in putting them into shape for use, and is there not a pretty fair chance for a little wasting, too, in this work of preparation? The cost of any labor expended in compounding a mixture, or several mixtures, from raw materials, most certainly becomes a part of the cost of the mixture, and wastage resulting from many separate compoundings must be considered too. Obviously, therefore, any estimate on the cost of lead and oil surfacing stock must fail of being complete wherein these points are not fully considered.

Lack of Uniformity.

The many mixings and many proportionings necessary

to start and complete a new job through the priming, leveling and coloring coats are puzzling, to say the least.

There are almost as many methods of proportioning, too, as there are paint shops. It is the custom in too many shops indeed, to have no rule at all, other than to use a "*little*" of this, and a "*little*" of that, to "*some*" of the other, in compounding coatings which call for scrupulous exactness and regularity.

Mix, Mix, Mix.

Doubtless the inequality of paint stock, of lead, of oil, of Japan, have led to this inattention to fixed formulas, and perhaps it is not strange that a painter, after repeatedly trying carefully proportioned mixtures with no better result than to behold his most painstaking measurements set at naught by adulterated lead, impure oil, or a brittle Japan, should decide that fixed rules were of no particular advantage. But what is this but another argument against the continuance of a system which involves so many chances of ill luck? The fact is, our carriage painters should no longer find it necessary to make so many mixings. Why should a painter personally produce his working materials any more than a carriage trimmer should personally work up from the raw material his cloth and patent leather? It seems to us that the painting art is considerably behind other trades in freeing itself from its drudgeries. It has pretty much relinquished its paint and color grinding by hand, its oil boiling, Japan

making, and varnish making, but still holds on to its mixing, mixing, mixing.

If the painter can *trust* to buy ready-ground lead, and *chance* his oil, and *stake results* on average Japan, would he run any greater risk by making use of ready-mixed surfacers, needing no personal manipulation by himself whatever? Would he not rather reduce his risk as well as reduce his labor?

Lead and Oil Unhealthy.

The unwholesomeness of lead is such a patent fact that we have little need here to mention it. Its disagreeable, not to say dangerous effect on health, is fully understood. Had the old surfacing system no other bad point than this, not a few would think this point alone sufficient to condemn it.

What is a Carriage Surface?

Having discussed the evils of the present system, (if it can be called a system, seeing that scarcely any two painters agree in their method of following it), it now becomes us to consider, first, what is the inherent nature and character of that surface which should be the pride and glory of every carriage painter; and secondly, what should be the character of a true foundation for such a surface.

As to the nature of the surface of a carriage body. Is it the exterior portion of wood and iron filled *in*, sealed up, hardened, leveled and brought to a glass-like smooth-

ness? or is it a *crust* or *shell* created *upon* such exterior portion of wood or iron?

Ice is said to form upon the surface of water, but the ice is never called the water, nor is it properly the surface of the water. It is simply a crust upon the water. It is a strong crust at times, and is smooth, compact and solid, and seemingly secure enough to last forever; but it is, after all, only a crust, and its days are numbered. Something like this seems to us, is a so-called "surface" of lead and oil, and roughstuff, on a carriage body. A true surface should be, not superimposed *on* the wood, but should be *in* the wood and *of* the wood.

Is a True Primer Possible?

A priming composition, according to the latest and most advanced idea, should be penetrative, tenacious, elastic; should firmly hold the grain and afford complete protection against moisture.

Experiments have been made in priming with pitch-like compositions needing either to be heated, or if applied cold, requiring thin coats skillfully laid on, to be followed by laborious brushing in (a tattooing process, in fact,) and then to be rubbed off from the surface with rags. Doubtless these processes possess merit, but it is surely no unjust criticism to remark that the necessity of heating a primer in a paint shop is a serious inconvenience; and, moreover, the necessity of removing from the surface of the wood a composition left in the grain is a serious fault, it

being not unreasonable to suppose that a coating suitable for any part should be suitable for all parts, and should not impose the labor of rubbing off. Is there a primer possible which shall avoid all these drawbacks? which shall avoid lead with its attendant evils? avoid the necessity of driers? be simple, ready-prepared, easily applied and uniform in its results? free from anything affecting the health, from drudgery and waste? prompt, safe and reliable? Let the sequel show.

Roughstuff.

Next in importance to the priming coat is that which completes the surfacing process, and makes a perfect foundation for the color and varnish. This is the one commonly known as roughstuff.

There is so much to be said in disparagement of the average old system roughstuff, that we are puzzled to know how to *briefly* criticise it. Certain it is, that there is no composition with which the old-school painter has to deal that more thoroughly taxes his ingenuity and patience. Among a hundred painters, too, shall we not discover almost a hundred different rules for mixing it? Surely we need not enlarge on the need of improvement here. With most painters the necessity for a perfect roughstuff attains to an importance scarcely exceeded by that of a good primer. If the primer is the foundation, the roughstuff is the cap stone. In one of the most prominent carriage factories in New England so great is the import-

ance attached to the compounding of roughstuff that one of the proprietors makes it his special duty to personally mix every batch used in the establishment. The idea that "anything" will do for roughstuff is full of error. Obviously all that is vital to finish is resident in this coating, and not alone the finish of the job when just completed, but the later and permanent appearance as well. The surface must be here secured, and in proportion as the surface is perfect or imperfect will the job be rated. A poorly compounded roughstuff is liable to absorb water during the rubbing down process, and when this occurs, grain showing, blistering and cracking naturally follow. A roughstuff to be perfect should be homogeneous with the coatings which it covers. It should possess cohesiveness and a sufficiently elastic toughness to prevent its flaking or cracking, yet should be as hard as iron, and of a nature to cut down freely under pumice, and without clogging the stone. It should not absorb, but should yield a compact solid water-proof surface, over which varnish coats should stand out with permanent brilliancy.

Are Lead and Oil the Only Possibilities in Paint?

Do not painters generally cling too closely to the notion that the old system is the only system and the old materials the only materials? Why should lead and oil be considered the only possibilities in paints? Why could not a material, rubber-like in character, penetrating and tenacious, with an affinity for the oil stronger than that of the

wood, so that it would be held in permanent solution—why, we ask, is it not possible that such a primer might be devised? And then let us suppose that this were to be supplemented by another coat, tough and elastic, which would confirm and strengthen the mission of the first, and by loading and compacting the pores still further help toward an enduring foundation. Supposing that this could be followed by still a third—and all part of the same system—which should level and complete the foundation, putting a finish to the work of the two preceding, would not such a system be worthy of the examination of all painters?

The Claims of the A, B, C, System.

But not less than these are the virtues we claim for the A, B, C, System, and we have, therefore, no hesitation in declaring to the carriage painter that we have unseated his ancient discouragement, and have put in its place something as much better as system is better than chaos and science than guess-work. A working material more in harmony with the requirements of the present age; more economical as to *time;* more reliable as to *results;* necessitating less *labor*, and altogether more *enduring.* Its compositions are far superior to anything heretofore employed. They are quick drying, water proof and weather proof, and their adaptation to surfacing is complete and perfect. It is not the old system improved, but it is a decided improvement on the old system.

We are well aware that we may seem to be making large claims for our new method, but a little reflection will show it is either all we claim for it or nothing. A system which proposes to do away entirely with the old method, must either be a splendid success or a miserable failure. We have so thoroughly convinced ourselves of its success, that we do not hesitate to ask a trial for it, knowing full well that a practical demonstration of the claims of our system is the only thing that will inspire confidence in it. We ask, therefore, a careful attention to the description of our process, and if what we claim seems to have any advantage in it, we should like to have it put to the proof.

PROGRESS IN THE PAINT SHOP.

Description of the A, B, C, System.

The fundamental characteristics of the A, B, C, System Surfacers may be described as follows: 1st, Penetrativeness; 2d, Tenacity; 3d, Coherency; 4th, Elasticity; 5th, Solidity. It bases its claims of superiority over other systems of surfacing on the following special qualities, viz Durability; Quickness; Uniform Results; Easy Working Quality; Simplicity and Method. Its progressive character consists in its aim to supply to the painter three separate and ready-compounded surface mixtures, embracing and constituting all the material necessary for starting with a job in the wood, and carrying the same forward into a condition for receiving color coats. Each of these compositions, too, is sent out in a newly invented Surfacer Mixing Can, by means of which it is kept in constant readiness for use. No additions are needed. Each Surfacer is perfect in itself and ready for the brush as it comes from the can. Labor is economized. Time is saved. Waste is avoided. Uniform success is assured. The components of the A, B, C, Surfacers are necessarily a private and proprietary matter, but their many new and

superior qualities will be made sufficiently apparent in this description to enable every intelligent painter to perceive their perfect adaptation to the work.

Adaptability of the A, B, C, System.

The adaptability of the A, B, C, Surfacers, to each and every variety of Carriage Surfacing, and to both old and new jobs, is thorough and complete. Everything that can be done with the old system can be done with the new, and done more durably and more rapidly, too.

The A, B, C, Surfacers are also adaptable to all grades of work, from the Finest Coach Body Work to the Painting of ordinary Wagons. We mean by this that the working process of the new system, like its material, is "Elastic," and that it is therefore susceptible of such modifications as may be necessary to suit it to the grade of work wanted.

We claim that the nature of the A, B, C. System Material guarantees durability in every case. A single coat of our Surfacer A even, will insure the protection of the wood, and hence if durability *only* was thought of, and filling up and finish *not considered*, color and varnishes could follow at once. This we do not advise, but state the fact to indicate that the expensiveness or cheapness of any job will depend entirely on the disposition of the painter to make it one or the other.

Arrangement and Application.

The arrangement and method of application of the new system is not essentially dissimilar to the order and

process of the old system, it having been a special study with us while organizing the A, B, C, System to avoid any unnecessary innovation of processes with which the Carriage Painter is already familiar.

SURFACER A.

This Surfacer is the priming or foundation coat applied directly to the wood. It penetrates the pores of the latter, seals them up and renders it permanently waterproof. A piece of whitewood, poplar, oak, ash or hickory coated with Surfacer A may be soaked in water for weeks or boiled for hours without swelling. A body or gear primed with one coat of this Surfacer may be exposed to the weather for months without the grain of the wood being raised. Being free from lead, there is no possibility of that metallic residue which is so liable to disturb the whole subsequent fabric of color and varnish, and which time and the weather will soon proclaim. A job primed with Surfacer A cannot possibly crack, blister or peel off.

SURFACER B

supplements Surfacer A, uniting with and strengthening that Surfacer, thereby loading the pores more thoroughly and building up the surface preparatory to its completion in Surfacer C.

SURFACER C

should not be confounded with the "roughstuff" of the

old system. Its office is necessarily similar, but its composition is by no means the same. It takes its place in the system as the leveling coat which confirms the work of Surfacers A and B, and completes the foundation for the color and varnish. It flows out smoothly, holding no brush-marks; rubs down with little labor; absorbs no moisture, and is therefore never unsteady in "holding out" the varnish. It retains its elasticity, hence neither flakes or cracks. Fewer coatings of it are required than of roughstuff, and it can be used more rapidly.

STAIN OR GUIDE-COAT.

In furtherance of the purpose of including in a system all parts of the process of preparing the surface for the colors, and thereby relieving the painter of the drudgery and responsibility of mixing and compounding, we have included in the A, B, C, System a ready-mixed stain for use as a safe guide-coat in scouring.

Care is always called for in scouring. The stain-coat greatly facilitates the work, and should never be omitted. As the A, B, C, System proposes to leave little or no accumulation of material *upon* the wood, but to obtain the surface practically *in* the wood and *of* the wood, close attention should be given to the rubbing down, and it should be done without too much haste. Too heavy pressure upon the pumice block, with a view to quicken the work, can scarcely be approved of.

THE SURFACING COMPLETED.

The work of Surfacing, properly speaking, starts with a job in the wood and brings it to a condition of readiness for coloring. This is what the A, B, C, System essays to accomplish, and hence when the latter point is reached, the mission of A, B, C, has been practically fulfilled. Surfacer A has supplied an enduring foundation; Surfacer B has loaded the grain; Surfacer C, when rubbed down, has produced a surface solid, level and smooth. Our claim is that it has been done quicker, better and more durable than is possible by the old way, even under the most favorable circumstances.

COLORONE.

It is not within the province of the A, B, C, System of Surfacers to supply the painter with colors, nor indeed, is there any need for it to do so. Our prominent color manufacturers are keenly alive to the wants of the Carriage Painter, as well as conscientiously painstaking and enterprising in their endeavors to satisfy the same. Notwithstanding, however, the quality or the colors furnished, our carriage painters still find their use attended by many perplexing results; but, to our mind, these accidents may less properly be charged to the colors than to what the painter *puts into the colors* while making them ready for use. Inferior Japans, not always to be detected by price or appearance, impure oil and "benzinated" turpentine, may not be wholly "without sin" in this connection.

With a view to assisting the painter in avoiding these dangers, the A, B, C, System offers to him the new and carefully prepared compound to be known as "COLORONE," or Color Insurer, in place of Oil, Japan and Varnish in Color mixing, and the use of which substitutes for the labor and risk of mixing his own colors something prepared under a system and in such quantities and with such equipment as to insure uniformity.

DETAILED DIRECTIONS

FOR THE USE OF THE

A, B, C, SYSTEM OF SURFACERS.

BODY PROCESS.

First, Surfacer A. One Coat. 24 hours to dry.
Second, Putty imperfections, nail-holes, &c., &c. Puttying may be done 24 hours after A is applied.
Third, Surfacer B. One Coat. 36 hours to dry.
Fourth, Surfacer C. For Bodies, two to five Coats. 24 hours apart.
Fifth, Stain. One Coat. 6 hours.
Sixth, Rub down with block pumice.
Seventh, Color. Use Colorone in colors.

Follow on with Murphy's Rubbing and Finishing Varnishes.

GEAR PROCESS.

First, Surfacer A. One Coat. 24 hours to dry. When dry the job may go to be ironed, and when back from the smith be sandpapered.
Second, Surfacer B. One Coat (over wood and iron* alike). 36 hours to dry.

*Iron will not rust after one coat of Surfacer B. Give your Springs a thin coat.

Third, Surfacer C. For Gears, One Coat. 24 hours to dry.

Fourth, Putty, and when thoroughly dry sandpaper for Color.

Fifth, Color with Colorone.

Follow on with Murphy's Rubbing and Finishing Varnishes.

All directions for the use of the A, B, C, Surfacers, and especially those as to time for drying, must necessarily be quite general in character. When the Surfacers are thoroughly dry it is always safe to proceed. We have in all cases given outside figures, leaving the possibilities of the System for quick work to be discovered by trial.

DIRECTIONS FOR REPAIR WORK AND REPAINTING.

Burnt-off Jobs.—With "burnt-off" jobs proceed precisely as in new work.

Renewing Over Old Paint.—In the diversity of conditions in jobs to be renewed, it is, of course, impossible to lay down specific directions. The judgment of the painter will best guide him in such work. The A, B, C, Surfacers will not entirely obliterate old cracks, but they will seal them up so that they cannot reopen.

To Paint a Panel or Spoke in a Few Hours.—Use Surfacer B. only, and apply one coat. Immediately rub same into the wood with a piece of soft leather, and continue rubbing for about five minutes; follow at once with a coat of color. When dry, sandpaper, and apply a second coat of color. When again dry, stripe and varnish.

WORKING SETS.

A carriage shop working set of the A, B, C, Surfacers is made up of four A, B, C, Mixing Cans. (See illustration on page). These cans vary in capacity from one gallon to ten gallons, but the set of five gallon mixers is probably best suited to the average carriage paint shop. Each paint-shop should retain four of these mixing cans permanently for use as receptacles and draught cans for the A, B, C, material, which will be regularly supplied to the painter in square tin shipping cans, for which no charge is made. On receiving one, two or five gallons of either A, B, C, or C, for Gears in a square tin shipping can, the painter has but to cut open the top of the shipping can and pour its contents into its appropriate mixing can, whence he may afterward draw it to suit his needs. The mixing can being air-tight, its contents are perfectly protected from change. No charge is made for any cans, except Surfacer Mixing Cans, and this will be refunded at any time that parties choose to return the cans, if, of course, in perfect order. The Surfacers are supplied separately or in sets, as may be desired.

TRIAL SETS.

Sample quantities of the New System Surfacers, sufficient to paint a single body or gear, may be had by those desirous of practically testing, the A, B, C, System on a single job. We pack these trial sets separately, viz: a Body set and a Gear set, either or both of which will be

promptly forwarded on application. No charge is made for Trial sets to parties in good standing who send for them with the intention of adopting the system if the trial prove satisfactory.

WHAT THE A, B, C, METHOD HAS DONE.

This pamphlet, substantially as now presented, was issued by us about a year ago, in the Fall of '77. At that time we had little else than our own tests and our own experience to offer as justifying our faith in the method. But a year has passed, and the question may fairly be asked: What has the year done? To this question we can answer, that it has taken the A, B, C, System out of the region of the experimental, and made it one of the regular parts of our business. To our own experiments and faith we can now add the trial and approval of a large number of carriage paint shops throughout the country.

Many others who have not as yet fully adopted the System are testing it. It appeals to the common sense of every intelligent carriage builder in its shorter time and increased durability, and when to this is added the fact—for it is a fact—that its durability is greater than is possible under the old way, we do not think we overstate the matter when we say its advantages are such that its very general adoption must be only a question of time.

PRICE LIST

OF THE

A, B, C, SURFACERS.

SURFACER A, ... $4 00

Priming Surfacer.

This article is superior to anything heretofore offered as a Primer, for filling the pores of the wood into which it penetrates and which it permanently preserves. When once dry it is unsusceptible of further absorption by the wood, and it is impossible to cause it to cleave off, crack, flake or peel. It should be followed by Surfacer B.

SURFACER B, ... 4 00

Loading Surfacer.

The composition of Surfacer B is to all intents and purposes identical with that of Surfacer A over which it is to be laid, except that it possesses additions adapting it to its place in the System, and which makes it somewhat more cement like. It should be followed with Surfacer C.

SURFACER C, FOR BODIES, . . . 3 50

Leveling Surfacer

This composition of Surfacer C is thoroughly homogeneous with Surfacer B, over which it is to be laid, and its office is that of a leveler. It replaces the ordinary roughstuff, but it is in every way superior to that article. Two or three coats should be used according to the quality of the work.

SURFACER C, FOR GEARS, . . . 3 50

Smoothing Surfacer.

This article is a distinct composition from surfacer C for Bodies, and is intended as a Smoothing Surfacer for Gears, for use with Sand-paper.

SURFACER C, FOR BODIES . . . $3 50

For White Work.

This article is similar except in color to our regular Surfacer C for Bodies, but is intended for use, principally among Railway companies, where the finish being light it is desirable to have a light ground.

SURFACER C, FOR GEARS, . . . 3 50

For White Work.

This article is similar except in color to our regular Surfacer C for Gears, but is intended for use on such Gears as are to be finished in light colors.

SASH SURFACER 4 00

For Inside Car Work.

This article is adapted to the filling up of all varieties of natural wood work. It is peculiarly well suited to Inside Car Surfacing. It has simply to be applied with a brush in the ordinary way, allowed to dry and then sandpapered. Two coats thus treated will fill the most open grain.

COLORONE, ... 4 00

For Use with Colors.

This article is a substitute for Oil, Japan and Varnish in color mixing. Its use insures the free working of the colors, and is a sure preventive against any tendency to peel, crack or flake. It increases the durability of the color and is superior to anything of the kind yet manufactured.

STAIN (Black) 1 50

For Guide Coat in Scouring.

This is a ready mixed stain for use as a safe guide coat in scouring, which if done with care, will be greatly facilitated by its use.

SURFACER MIXING CANS.

No. 1. One gallon each..... 1 00
No. 2. Two gallons each..... 1 50
No. 3. Five gallons each..... 2 00
No. 4. Ten gallons each. 3 00

THE MURPHY CARRIAGE VARNISHES.

VARNISHES FOR FINISHING COATS.

PER GALLON

PALEST DURABLE BODY VARNISH . . . $6 00

For Finishing Coats on Best Work.

This Varnish is for final coats on best work; is very nearly colorless, flows freely, sets slowly and is eminently durable. It will dry over night and may be safely run out in three days, and with the utmost skill at command, extreme care and favorable conditions will produce the most brilliant results. One coat of it is sufficient over our Hard Drying Body Varnish.

MEDIUM DRYING BODY VARNISH 6 00

For Finishing Coats on Bodies.

This is the same Varnish as our Palest Durable Body, except that it hardens more quickly, and is therefore a desirable substitute on all jobs not requiring the extreme nicety of finish, or allowing the same time or otherwise offering less favorable conditions, and is especially useful during the summer months or in shops where it is not possible to keep a uniform temperature

PALE DURABLE CARRIAGE VARNISH . . . 5 00

For Finishing Coats on Fine Running Parts.

This Varnish being designed for running parts, is not so delicate as that for bodies, but it is made with a special view to toughness and elasticity. It is our most brilliant Gear Varnish, however, and should only be used for final coats on best work. In body and flowing properties it is similar to the two foregoing varnishes.

HARD DRYING CARRIAGE VARNISH . . . 4 50

For Finishing Running Parts with one Coat.

This Varnish hardens quicker and is heavier bodied than the foregoing, and is designed for that class of work when one coat only is practicable or can be afforded. It contains all the requisite points for finishing running parts with one coat over striping. It dries well over night and hardens thoroughly through.

No. 1 CARRIAGE VARNISH 4 00

For Finishing Running Parts of Ordinary Work.

This Varnish is similar to our Hard Drying Carriage in body and working properities, but is intended for a cheaper class of work or repairs. It hardens a little quicker than the foregoing, and is, by some, preferred on that account.

VARNISHES FOR UNDER COATS.

HARD DRYING BODY VARNISH, ... 5 00

For Under Coats on Best Work.

This Varnish is intended for use on Under Coats, to prepare a fine and durable surface for our finishing Varnishes. It dries hard over night and can be rubbed in from four to five days. Where the time can be given, the use of this Varnish is strongly recommended, as the results obtained by its use are much more satisfactory than when a quicker Varnish is employed.

RUBBING BODY VARNISH, ... 4 00

For Under Coats on Bodies.

This Varnish is sufficiently pale to permit its employment over any light colors, and free enough in its working properties for the largest panels. It dries hard over night and rubs nicely, without the slightest tendency to sweat, in about three days. In view of its perfect rubbing properties, and the certainty of its results, this grade has been one of the most popular Varnishes of late years.

QUICK RUBBING VARNISH, ... 4 00

For Under Coats on Hurried Work.

This Varnish is similar to our Rubbing Body, but is intended for use where dispatch is imperative. It is especially serviceable on old work, and has met with much favor as a Rubbing Varnish for wheels and under parts of Carriages. It dries hard over night, and can be rubbed in twenty-four to thirty-six hours.

BLACK RUBBING VARNISH, ... 4 00

For Under Coats on Bodies or Running Parts.

This Varnish will be found denser in color, and superior in working and covering properties to any article of the kind now on the market. On best work, two coats should be applied over a black ground. For use on old or repair work it is invaluable, as it covers nicely with one coat, flows out perfectly, and dries with a brilliant lustre.

NOTE.—Our Rubbing Varnishes are alike in their entire freedom from all liability to sweat out. In this most important point they are unexcelled. The different grades mentioned above, furnish suitable qualities for all classes of work. The continued increase in the sale of our Black Rubbing, makes the success of that article remarkable. It is by all odds the best thing of the kind ever offered the Carriage Maker. It is convenient and economical, and once in use is never abandoned.

JAPANS, ETC.

ENAMEL TOP VARNISH, ... 4 00

For Refinishing Old Carriage Tops.

This is an elastic Varnish of intense black color, for renovating old Carriage Tops. It possesses the very great advantage of keeping the leather soft. In bright weather it will dry in one day exposed to the sun. The tops should be carefully cleaned before using.

JAPAN GOLD SIZE, ... 3 50

For Binding and Drying Colors.

This is a light colored drier for mixing with paints to aid their drying, binding and hardening through. Its superior binding properties are especially noticeable, and on account of its paleness it is particularly useful with light colors. It is also a desirable quick-size for gilding.

COACH MAKERS' JAPAN, ... 2 00

For Binding and Drying Colors.

This is a very superior article for drying paints and colors. It is made from the finest materials and with especial care. It mixes perfectly free with oil, and is a good binder as well as drier. It is in extensive use by most of the prominent color grinders, and is the acknowledged standard among Carriage Makers, and in uniformity and certainty of results is without an equal.

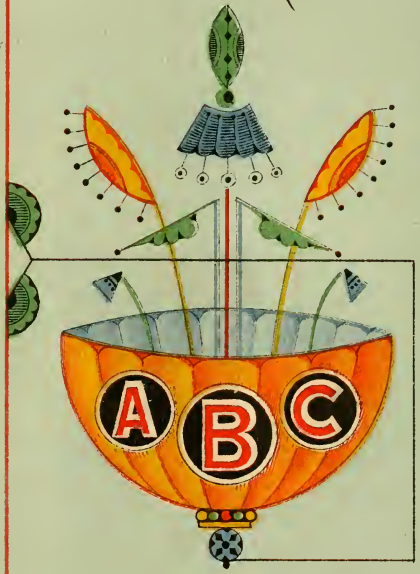
PALE DRYING JAPAN, ... 1 75

For Binding and Drying Paints.

This is a very superior Drier for paints and colors. It is quite pale in color, will mix freely with oil, and will be found entirely reliable in every way. It is superior to anything of its kind now on the market, except our own Coach Makers' Japan.

MURPHY & CO.

Newark, N.J.



MURPHY, SHERWIN & CO.

Cleveland, O.