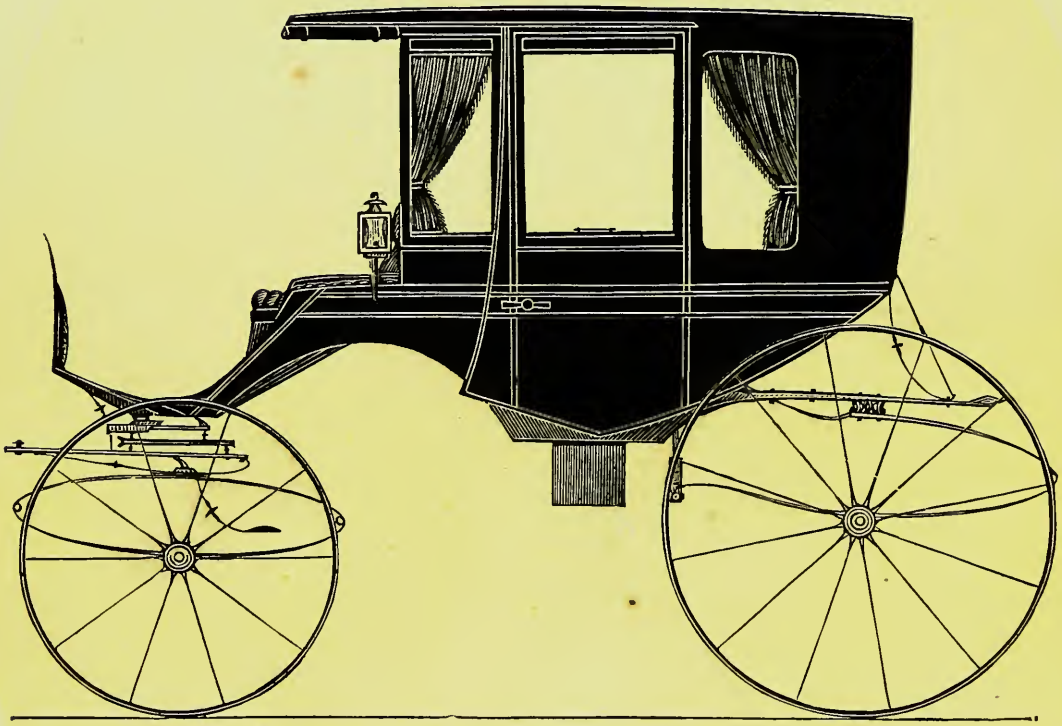
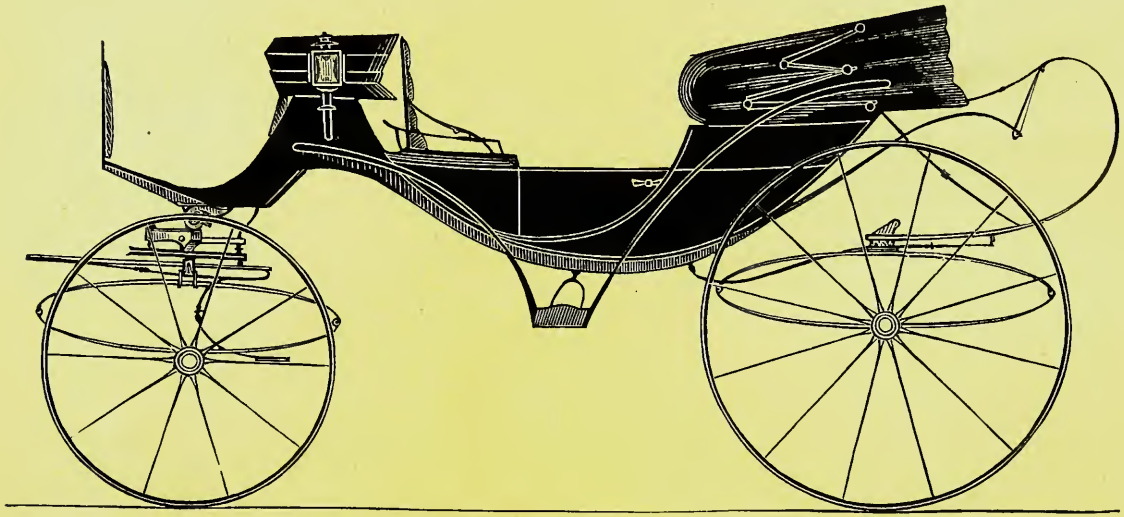


SIX-SEAT CHARIOTEE.—½ IN. SCALE.

Designed expressly for the New York Coach-maker's Magazine.

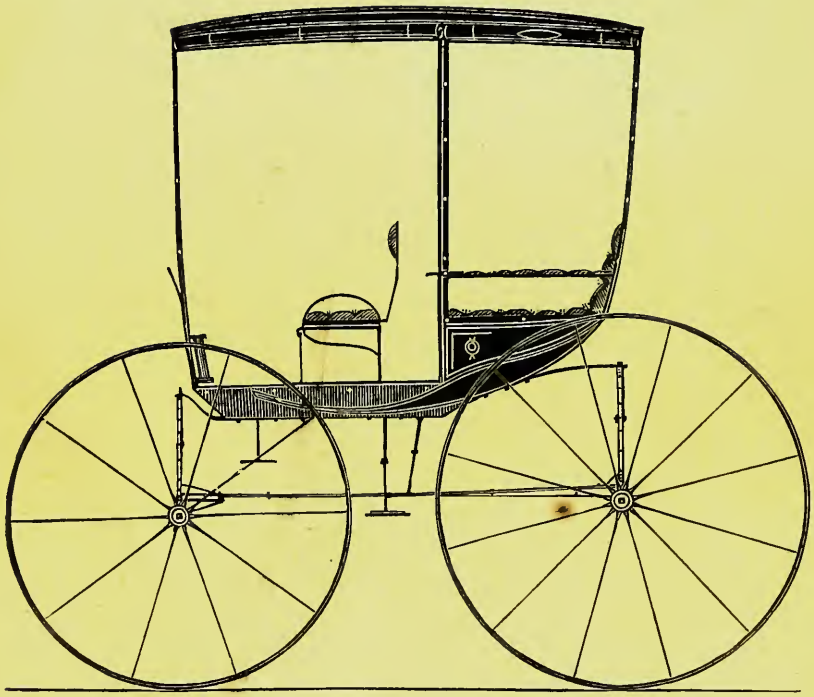
Explained on page 6.



C-SPRING CALECHE.—½ IN. SCALE.

Engraved expressly for the New York Coach-maker's Magazine.

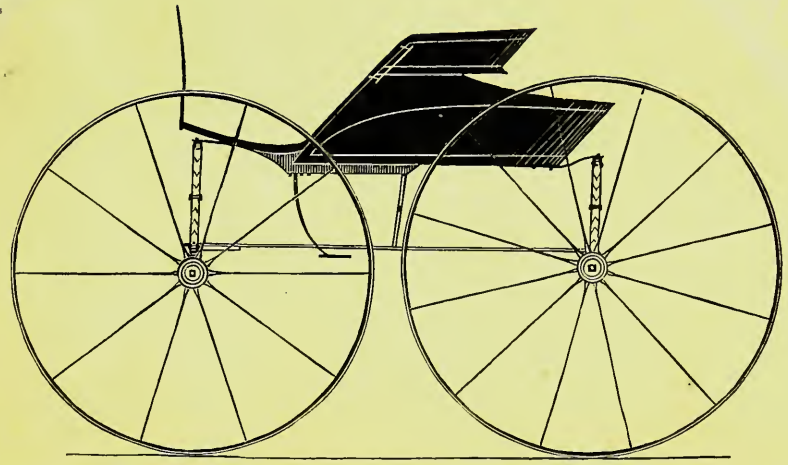
Explained on page 6.



TURN-OVER SEAT ROCKAWAY.—½ IN. SCALE.

Designed expressly for the New York Coach-maker's Magazine.

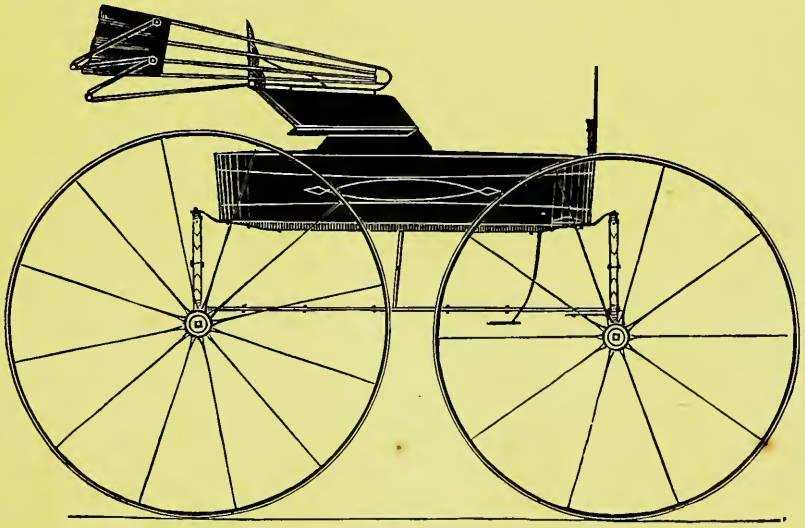
Explained on page 7.



TROTTING COAL-BOX BUGGY.—½ IN. SCALE.

Designed expressly for the New York Coach-maker's Magazine.

Explained on page 7.



PIANO-BOX ROAD BUGGY.—½ IN. SCALE.

Designed expressly for the New York Coach-maker's Magazine.

Explained on page 7.

THE NEW YORK
CARRIAGE MAKER'S MAGAZINE

DEVOTED TO THE LITERARY, SOCIAL, AND MECHANICAL INTERESTS OF THE CRAFT.

Vol. XII. NEW YORK, JUNE, 1870. No. 1.

Mechanical Literature.

TREATISE ON THE WOODWORK OF CARRIAGES.

(*Continued from page* 178, *Volume XI.*)

CHAPTER SECOND.

THE ART OF TRACING.—OPERATIONS ON UPRIGHTS AND PLANE SURFACES.—LXVIII.—The two chapters that contain the first part of this work, have each a distinct object. The first, treating of the representation of bodies in a general point of view, is addressed to the artist, who, having conceived the form of a body with all its dimensions, the mode of generation of all its sides or surfaces, these furnish him the means wherewith exactly to represent on the planes of projection, all the projections of intersections of those surfaces, or of their apparent form. The second aims at, also in a general point of view, the exact execution of the conceptions of the first; it gives the methods for the precise determination of the dimensions of all the pieces of which a body is composed, the size of the faces of all the frames, the plane angles that the lines of construction for all the intersections, and all the connections, form with each other. The intersections of curved surfaces, of which the mode of generation will be discussed in the second part, will not be treated in this chapter.

Suppose a body is wanted to be constructed, on a given plane, containing only the projection of the intersections of surfaces, as on figure 47. A commencement is made constructing all the plane surfaces in their sizes, as will be treated hereafter; then on each surface trace the respective position of each frame of which it is composed. After which execute each separate surface of the frames according to the dimensions and the forms designated on the plane.*

LXIX. The elements, the use of which is the most simple and easy, and at the same time offer the greatest precision for the exact transfer of the operations on to the planes, are plane surfaces and straight lines. This one observation suffices to indicate the order to be observed, and also to stretch or lay out the frames and to reproduce the operations made on the planes. If, therefore, a frame is composed of plane and curved surfaces, a commencement must be made by executing the plane surfaces. If the frame is composed of several plane surfaces, the largest must be taken in hand first, as they offer greater facility to be executed with precision. In the same manner, where the frame is composed of several curved surfaces, the simplest should be executed first. The most complicated should always be executed the last.

There are frames of bodies, that, when finished, are wholly composed of curved surfaces. But when these frames are mixed with others, in order to trace the direction of the connections with precision, a plane surface must first be formed on one of the faces. After all the operations are traced, the frame on that face is given the desired form; the supports of all swelled bodies are included in this theory. An exception is made only in cases of minor importance, such as bulges or curvings added when the woodwork is finished, and then plane surfaces can be dispensed with. Moreover, these frames, generally connected by jags at the extremities, are traced without any precision.

The operations made on the planes are necessarily brought over on to the frames in the order according to the connections. The lines traced for the joints are the intersections of the surfaces. The connections are not traced until the frames are joined at least on three faces.

The connections follow the order mentioned above: the operations referring to them are brought over on to the frames, first on the plane surfaces and then on the plainest curved surfaces; and as these are mostly created by horizontal uprights like those defined (art. 66); the direction of the connections on those surfaces, as regards the straight cross joints that connect the sides of the bodies, are the creators of the surface.

The above explanation will suffice to explain the importance of plane surfaces and plane lines employed in the art of tracing.

It must here be remarked, that a point taken on a frame always indicates the solid angle of several faces in

* The planes of projection, usually employed by carriage builders, are generally confounded one with the other. That is to say, the horizontal and lateral projections are made on a vertical plane. The tables used for the execution of the tracings rarely have more than the length and the height of the body. Firstly, in order to avoid encumbering the work shops; secondly, in order to be always at hand to trace lines of construction and to raise the structure without getting on the tables, which would have to be done, were the projections separated as we here present them. But this does not prevent the operations being exactly traced; there is only a confusion of lines, which we must necessarily avoid. However, in the second part, we will execute the projections on the same plane, like the carpenters, in order to explain the manner of applying our operations.

the same manner as the line generally indicates the intersection of two surfaces. If, therefore, a line is individually taken into consideration, in order to determine the length or the form, it is merely in order to determine the size or form of a surface to which that line belongs.

LXX. We have seen (art. 52, 53, and 55) that when a straight line, a curve, or a plane surface in space is parallel to one of the planes of projection, its projection on that plane is equal and parallel. In all other cases, when the lines or plane surfaces are inclined in any manner whatever in respect to the plans of projection, their projections on those plans are always less in size. In carriage carpentry there are many pieces that are inclined in respect to the plans of projection. If, therefore, those pieces were executed according to the size expressed by their projection on a single plan, serious errors would be committed; and the result would be, if the case were to occur, that all the pieces were equally inclined and of equal length, the body would be merely executed according to more reduced dimensions than those prescribed in the conception. Then, again, if some of the pieces composing a body were more inclined than others in the same length, then the execution on a single projection would be rendered impossible.

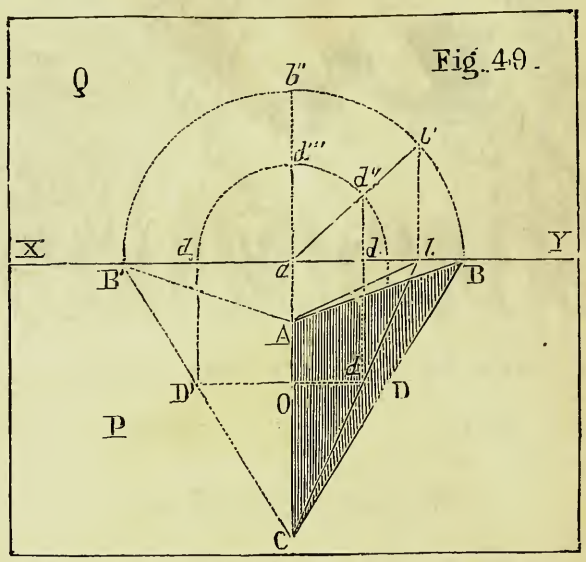
The methods explained in this chapter, with the foreknowledge of the projections of all the uprights, and all the plane surfaces, inclined in any manner whatever in respect to the plans of projection, purport to determine: 1st. The size of those uprights and those plane surfaces; 2d. The dihedral angle formed by two contiguous plane surfaces.

LXXI. In order to solve each of these questions, three different systems are employed, as follows: rotations, deploying, and varying the plans of projection. Although these three systems lead to the same result, their manner of being operated is not indifferent; each one, in certain cases, can present more simple and easy modes of construction, according to the position of the surface in question in respect to the plans of projection. The examples given of their operation, will, however, sufficiently indicate the method that is preferable to follow in each case.

Each of the methods above-mentioned are, for the purpose of reproducing the surface in question, either parallel to one of the plans of projection in order to carry out the projection in its full size; or in one of the plans of projection, then the surface and its new projection become incorporated upon that plan. In the two cases, the operation always consists in the transfer of the inclined surface into a position either horizontal or vertical, as it must coincide or be parallel to one of the plans of projection that has such direction.

It is not merely in order to determine the size of an inclined surface that it is brought either to a vertical or a horizontal position, but for the purpose of exactly representing all the lines of construction connected with it, on that surface and in the new position it occupies. It also determines all the intersections of surfaces, all the levels of component parts of the frame composing it, in fact all lines that only can rigorously be determined on the deployed surface or projected in full size.

In order to fix the mind on the use of rotation, deploying, and varying the plan of projections, we will first make the application on a triangle that we will suppose in all its possible positions.



LXXII. Suppose A B C (fig. 49) to be the triangle in question, formed in such a manner that one of its sides A C is directed in a perpendicular sense to the vertical plane Q. The triangle A B C, being actually given on the horizontal plane P, confuses itself on that plane with its projection, and the vertical projection is carried out along the ground line *a* B. Now suppose the triangle to be turned around its side A C, which is the same as the pivot of a hinge, and from whatever position it may occupy in space, determine its new projection on the planes P and Q.†

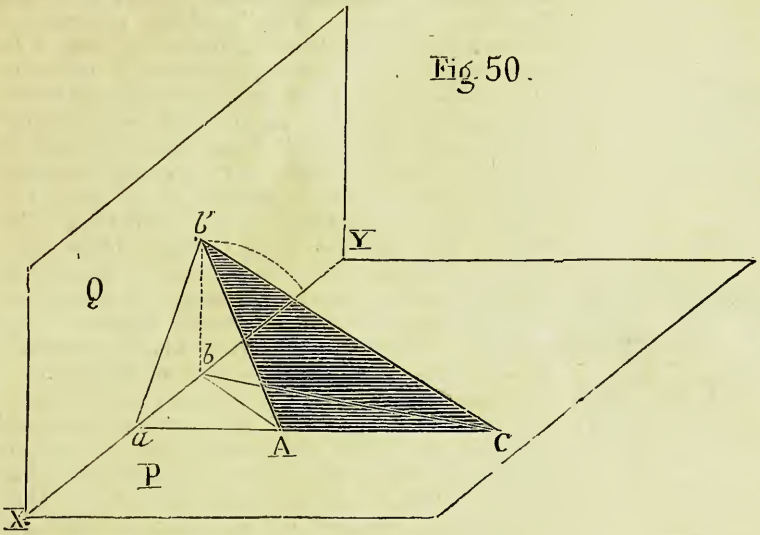
In its movement of rotation around the axis A C, which latter remains fixed, each point of the triangle, being always at the same distance from the axis, describes the circumference of a circle, the plane of which is perpendicular to the axis, the centre of which is found at point of intersection of that plane and the axis (art. 32.)

The circumference of the circle of each point is therefore projected on the horizontal plane where the axis is given by a line perpendicular to that axis, and in its full size on the vertical plane.

In order to demonstrate that proposition, suppose point D in any part of the triangle A B C. Lower from point D a perpendicular O D on to the axis A C, the line O D will be the radius of the circumference described by the point D in the rotary movement of the triangle around A C, and the point O will be the center of that circumference. It is quite evident that, during the movement of the triangle, the distance O D from the point D to the axis, will always be the same, and when the triangle will have made a half turn, the point D will be at D′, at a distance of O D′ from the axis, equal to O D, and on the prolongation of that line. Now as the radius O D remains constantly perpendicular to the axis, it will project itself on the horizontal plan, in all its positions, by the line D D′, which illustrates all the projections of the point D in its movement round A C.

The axis A C, being by construction perpendicular to

* It is well to remind the reader, that in order to read all the operations, the planes, P and Q, must be supposed to occupy their natural positions; the first horizontal and the second raised vertically on the common intersection, X Y, as represented by fig. 50, in perspective.



the vertical plane Q, the half circle described by the radius O D is parallel to that plane, and is projected in its full size (art. 55). Therefore, in order to construct that projection, it will be remarked that the center O of the circle is projected in *a* on the ground line, on the prolongation of the axis; from that point taken as center, with O D as radius, the half circumference $d' d'' d''' d_0$ will be described, which will contain the required projection.

The lines $a\, d'\, a\, d''\, a\, d'''\, a\, d_0$ are, on the vertical plane, the successive projections of the radius O D, and the half circumference $d'\, d''\, d'''\, d_0$ comprises on that plane, all the projections of the point D. From this it results, that in order to obtain the horizontal projection of the point D from any one of its positions in space, for instance, when it is projected in d'' on the vertical plane, it suffices to lower from that point a line perpendicular to the ground line until it meets the line D' D, in point *d*, which last point will be the desired projection.

(*To be continued.*)

ESSEDAS.

TRANSLATED FROM THE GERMAN OF GINZROT.

The description which Ossian gives of the battle wagons, called Essedas, is too interesting to be omitted. True, some modern *savants* have doubted the genuineness of Ossian's old Gaelic poems, because he not even mentions the common battle wagons, and only describes those of the chiefs. He says that the wagon of Cuchullin, together with the horses, were very plainly ornamented, and gives this description as applicable to all these vehicles. Adelung tells us that this kind of wagons look more like a Parisian phaeton, suspended on straps and springs, than a British battle wagon. This might, likewise, sarcastically be said of the chariot of Juno, described by Homer.

Ossian, in his Gaelic text, says nothing that leads us to suspect that his battle wagons were not Essedas, such as the natives of Britain employed. It is likewise indisputable, that not only the chiefs had wagons, but that their usage was general in accordance with the condition of the uneven and mountainous territory of Caledonia; for what would be the meaning of Ossian's mentioning "a number of wagons," if there had only been a few of them in use. The engraving here given was drawn by the author [Ginzrot] in accordance with the interesting descriptions which have come down to us of the Essedas, and which read as follows:—

The entire wagon consisted of the axle, the two wheels, the pole, and the body or chair, "which was curved behind," and attached to the axle, like the Greek Diphras, by means of iron loops or nails. The pole was made of the yew-tree wood, which was very common in Scotland, and is very tough and flexible. The outside of the body is covered with polished plates or squares of bone —this served both as an ornament, matching the glaring and shining stones of the edges, and as a protection against spears.

The seat in these wagons appears to have been superfluous; it only could impede the movements of the warrior, who certainly did not fight whilst sitting.

Ossian says further of the body: "Keeper, the spears, shields, and swords of the heroes." Egyptian battle wagons already were encircled with rows of spears, and in Homer's Iliad we find many similar passages of the Diphron; so in Statiu's Thebaid, "around him in the battle wagon shivered a forest of spears." Ossian's Esseda is drawn by two horses, called Sithfad and Dubhsrongheal, a custom with the most ancient nations, and among the excellent qualities which he praises in these war-horses he does not forget to mention the crashing sound and the strength of their hoofs.

We have examples where women mounted the battle wagons as heroines. Dio Cassius narrates that at a battle when Suetonius led a Roman army against 230,000 Britons, the latter felt so sure of victory, that their wives followed in wagons to the battle field to witness the contest; the immense number of wagons inclosed the scene like a fortified wall, but ultimately the Romans were the victors, and eighty thousand dead covered the field, the crowd of wagons confusing the British ranks. During the battle, the queen Boadicea, with her two daughters, standing in an Esseda, incited her men to the fight. Tacitus says of this queen, that she soon after destroyed herself with poison.

Not all Essedas were used for war purposes only. In Brittannia, they were also the usual two-wheel *open* vehicle for traveling and promenading. Cicero writes to Trebatius (Lib. vii. Ep. 7): In Britain, I am told, there is neither gold nor silver. If this is the case, I would advise you to take the first Esseda and hasten to us. Propertius, Lib. iv., calls the Essedum the *painted* wagon. The Gauls were the first to ornament Essedas, which they used in town and for traveling, with all kinds of embossed brass work, which in many instances were so artistically finished and plated, that the mountings looked like pure silver. Pliny says this is a Gallic invention, and the town of Alesia (modern name, Alise or Bourgogne) was renowned for this branch of work. There also were made mountings for saddles, yokes and harness;

ESSEDAS, AFTER GINZROT.

the Biturigies (now Berry in France) also dealt largely in these articles, which they gilded in fire.

The Romans soon introduced this new luxury in Italy. Pliny descants thereupon: "It is to be regretted that such artistic work, worthy of admiration in the palaces of the great, is now put on Essedas and drawn through dust and mud." This luxury afterward grew to such an extent in Rome, that (Suetonius, chap. 16) when a new Essedum, of silver, was exposed for sale in Sigillaria street, in Rome, which was extremely showy and costly, Claudius, then public censor, had it seized, paid for, and cut to pieces, in order to arrest so corruptible a luxury. The most distinguished persons in Rome used this light and commodious vehicle for pleasure drives. Like the cisium it had room for several persons, and was the Roman cabriolet.

Emperors and other high dignitaries could use the Esseda while traveling, or in the country, but it was not so stately a vehicle that they could have used it, even when highly finished, without detriment to their exalted rank, on public occasions. Cicero, in the Second Philippic, censures Antonius for using them, thus: "Has ever been heard any thing so shameful and mean? A Tribune of the people rides in an Essedum, preceded by Lictors with wreaths of laurels." Cicero don't censure Antonius for using the Esseda, but for doing so on a public occasion, and because he was preceded by the Lictors with wreathed heads.

CHINESE VEHICLES.

BY BISHOP KINGSLEY.

THE vehicles used for the journey are carts, one to each man; and each cart drawn by two mules. The hubs of the carts, although designed to carry but one man and the driver, are as large as those of our strongest drays in the United States, and the wheels as strong and full of rivets as the wheels in Ezekiel's vision were of eyes. Through these ponderous hubs the axles project for a distance of seven inches, being three inches in diameter where they come through. What good this projection of the axle does, except to hit against every thing in the way, belongs to Chinese civilization to determine. On to these axles, which are very heavy and strong, are attached heavy frames, made of two scantlings, running from the mules' heads across the axle, to which the frame is made fast by strong bands and bolts of iron. There is nothing in the shape of a spring, or thorough-brace, or any such thing. The Chinese have not got along to these things yet in their civilization. On to this frame is fastened the thing to which you are to be imprisoned during your trip to the capital of the Celestial Empire. It is only large enough for one person, who is expected to sit with crossed legs on the bottom of the machine.

This strange cage is a kind of a cross between a hen-coop and a dog-kennel. It is made of hard wood, and very strong, the sides being made to resemble the windows in a penitentiary, the checkered bars being of hard, strong wood instead of iron. There is no seat of any kind, nor any thing on which you can lay hold to steady yourself, as a protection against the terrible jerks you suddenly get from side to side as your cart drops into the ruts of ages, and is jerked out again by mule-power. Your prison somewhat resembles an old-fashioned Pennsylvania or Kentucky freight wagon, bating the size, only the ribs of your enclosure are much nearer together and stronger. Then over all is placed a covering of strong, blue cotton muslin, to prevent the rain or dust from coming in, or you from seeing out except in front. This cover is made to come down in front of you, so that you must crouch to see out even in front, like a dog looking out of his kennel, or a chicken looking out from under the old hen on a rainy day. You must first get on to the shaft, and then crawl backward through this hole to your quarters. Bed and bed-clothes, carpet-sacks and shawls are packed away in this little cramped concern, and you endeavor to adjust them so that your bones may escape being broken against the rough sides of your narrow cage. But the roof is so low that if you put in enough to make anything like a comfortable seat, your head will hit against the top, and if your head barely escapes the top of the roof in the middle, it will be sure to hit the sloping sides as soon as the lateral motion begins, and that is the moment the cart gets under way.

GEOMETRICAL EXERCISE.

BY P. B. J.

(*Continued from Page* 181, *Volume Eleven.*)

As before promised, I here give the method to bisect a given line, or divide it into two equal parts. Let this given line be A B, which it is required to bisect or divide into equal parts. From A, with any spread of the compasses greater than the half of A B, describe the portion of a circle as C F D, then by the same operation, making B the center, describe the arc C G D,—cutting the former arc in C and D. Join the points C and D, by the line C E D; then is A E equal to E B, and the line A B bisected as required; for joining A C, C D, B D, and B A we shall have a parallelogram whose sides are all equal to

each other, thereby forming a complete square without the aid of that tool, as shown. The radius with which the arcs are described, and which are A B and C D, bisect each other, and therefore A E is equal to E B. Moreover C D is perpendicular or square to A B, for the triangles A C E are D C E are identical, or have their angles as well as their sides, equal to the other; that is, A E is equal to B E, and A C equal to B C, and C E, having a common side to both triangles; therefore the angle A E C is equal to B E C. The angle A E C, added to the angle B E C, is equal to 180 degrees, or two right angles. As these angles are proved equal to each other, they must be equal to ninety or the half of one hundred and eighty degrees, as C E is perpendicular to A B, and the line C E continued to D, D E is also perpendicular or square to A B. Hence, also, we have another method of drawing a square line from any given point, for if E is made the given point, we need only set off E A equal to E B, and draw two arcs, crossing each other as at C and D. Then joining C and D, we have the square line desired, and given through the given point E.

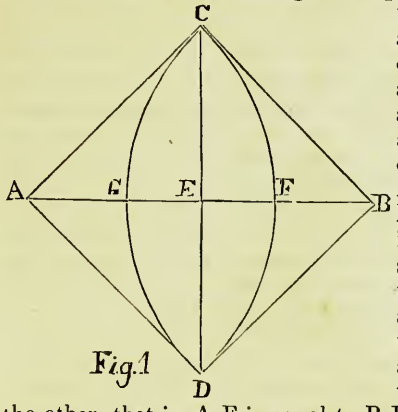


Fig. 1

Before closing this article we will illustrate another mode of obtaining a square line from a given point. If from the center of any circle a radius be drawn to the circumference, bisecting any chord, it will be square to the chord. Let A B be a cord to be bisected or divided into two equal parts, in the point E. Then, if from the centre C, we draw a line or radius to the circumference at D, passing through the centre of E, the radius C D will be square to the chord.

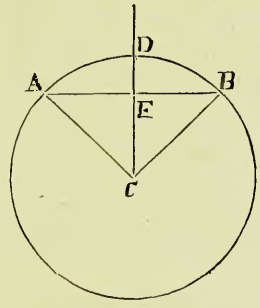


Fig. 2

THE KIMBALL CAR AND CARRIAGE MANUFACTURING COMPANY OF SAN FRANCISCO.

This company, whose works are located on the corner of Fourth and Bryant streets, is thus spoken of in the *Alta California*, of a recent date:

Peeping through the glass door separating the sample show-room down stairs, we saw a sight that gladdened our hearts, and we forthwith pushed our way into the

SMITH'S SHOP,

extending two hundred and fifty feet, with a line of eighteen forges in active operation; the sparks flying from the red hot iron as the hammers and heavy sledges came down upon it, swung by the lusty arms of the strikers or helpers, as they are called; the forges being supplied with air by one of Root's patent blowers, run by steam power, thus dispensing with the old fashioned bellows. Piled about the forges were wagon gears of all descriptions, from the eleven-passenger coach to the delicate trotter of 125 pounds weight, undergoing the process of ironing, which is done by piece work or job, at so much per wagon, by the lot of from 26 to 50 wagons of a kind, a system adopted almost entirely throughout the establishment in all other parts; thus the men working the wheels are paid so much a set, the wood makers so much per gear, the body makers, per body, the trimming and painting being also done by contract, thus simplifying and bringing the whole to a perfect system, and relieving the proprietors from dealing directly with so many employees, each department, having its head, who is held responsible for the quality of work done. At the extreme end of the smith's shop are turning lathes; an immense trip-hammer, that in a few minutes converts a piece of iron into a step, shaped, and, with a little more labor, ready to go on to the wagon. On the left of the shop is a 50-horse power engine, of Booth & Company's make, with Scott & Eckert's patent cut-off. Overhead, the long line of shafting and pullies, having been supplied by the Vulcan Foundry. This engine, running so smoothly that scarce a sound is heard, supplies the power for the various machines throughout the establishment. On the left of the smith's shop, as you enter from the street, is the foreman's office; the room for containing the stock of bolts, nuts, and small pieces used in the iron department; adjoining is the forge and bench of the silver plater, who was deftly and rapidly hand-plating dash rails, seat handles, etc., a large pile of which lay before him ready for plating. Continuing on, we entered the

WOOD MACHINERY SHOP,

where saws were hissing, and the vicious hum of the planer throwing its chips into the air, made us shudder at the thought of the speedy amputation of a finger, or if one of those hissing cylindrical saws should fly in pieces, how keenly the fragments would divide one's body. Here we encounter all the machinery necessary to the business, such as jig saws, circular saws in variety, heavy planers, serpentine planers, moulding machines, hub borers, turning lathes, and a huge machine for boring and mortising railroad car sills and frames; passing on we enter

THE REPOSITORY,

comprising the entire second floor, over the blacksmith shop, fifty feet wide and two hundred and seventy-five feet long, we find filled with vehicles of every description, from the elegant clarence and barouch to the tiniest little trotter of a feather weight, on the celebrated wood C-spring, which is a speciality with the Kimball Company, being their own invention, for which they have a patent, as well as three other patents on other parts of their wagon. The wood spring and perch combined, is too familiar to the California eye to need any description, comprising as they do the majority seemingly of the wagons used here; it is found to be the lightest, most durable wagon ever made, and the fact that this factory has turned out and sold over twelve hundred within the last eighteen months, and are still hard at work at them, selling three to one of any other description of wagon in their repository, speaks for itself; and the fame of the wagon having spread far and wide, they are getting orders from the east, west, north, and south; they have sent them on

orders to Chicago, New York, Poughkeepsie, Concord, N. H., Baltimore, New Orleans, Hong Kong, Yokohama, Calcutta, Liverpool, and Paris, and expect to scatter them over the entire globe. They are now establishing branch agencies in all the eastern cities, and a company is about organizing to build the wagons in New York, for the eastern demand. In Chicago, the Coane & Ten Brooke Manufactory have commenced to work on them, and they may be seen with fast nags before them, making the sand fly on the avenues out of that city. But now we step on a steam elevator and are whisked up to the upper story, or the

WOOD WORKERS' SHOP,

the part of which is devoted to making the bodies of light work; next to that the shop for double wagon bodies—six-seat wood springs, phaetons, etc.; then came an immense room filled with benches, where the work on the wood parts is done, and here we find the more delicate machinery for tenoning and mortising light work, polishing, etc., all very interesting to observe in operation; overhead is a maze of hubs, suspended to season, wheels, etc.; we proceed to the east wing again, where we find the leather.

THOROUGHBRACE SHOP,

where all the thoroughbraces for stage and wood spring wagons are made of leather manufactured in California, it being cheaper and better than eastern. Continuing on we come to a large room, fifty by one hundred and fifty, devoted to use as a

TRIMMERS' SHOP,

where the wagons are all trimmed by contract, under management of Mr. C. Crego, who employs about twenty men. In the course of our peregrinations we encountered a huge monster, which at first looked like a chariot for Gog and Magog, it being made to represent a monster dragon, with his high crest, breathing fire and destruction, and his scaly tail writhing in anticipation of a delicate feast on a few tender mortals; enough to scare the senses of the timid and nervous. This vehicle we learned is for the Great Overland Circus and Menagerie, now organizing, and will contain the band. It will be hung on thoroughbraces and the wood spring, showing with what facility the principle can be adapted to any sized vehicle. It will be the lightest yet most substantial wagon ever built to carry the weight. It is intended to carry a band of sixteen and their instruments, and will weigh two thousand pounds—less than any band wagon of its capacity ever built. As the circus will go east eventually, the mechanics of the other States will have an opportunity of seeing what California can produce in the way of workmanship and originality.

WIND HARPS.

BY CARRIE M. WHITNEY.

O MOURNFULLY sad are the measures
That sweep o'er the wind-harps to-night,
Faintly trembling back echoes of pleasures
Which forever have taken their flight.

'Tis midnight—and through my lone dwelling
The ghosts of the past tread the floors;
While without that wild music is swelling
Like tones from invisible shores.

I am wakeful—for fancy is busy;
In vain do I try to win sleep;
Fond memories turn my brain dizzy,
And the winds their sad symphonies sweep.

The loved and the lost are returning—
Unreal—though real they seem,
And my soul in its passionate yearning
Sobs out for the "*what might have been.*"

Ah! to-night the sad winds harp a story
Of friendships forever gone by,
And whisper that earth-loves' bright glory
Is fading like tints from the sky.

O winds, mournful winds! cease your harping!
Your music is laden with tears;
Each chord is a minor, and waking
No hope in the slow-tolling years.

Pen Illustrations of the Drafts.

SIX-SEAT CHARIOTEE.

Illustrated on Plate I.

THIS design, with a few slight alterations, has been kindly sent us for publication in THE NEW YORK COACH-MAKER'S MAGAZINE, by Mr. Charles Hertzog, of West Philadelphia, Pa., who will please accept our thanks for the favor. As may be seen, the design has some original points in its composition, worth the attention of carriage-manufacturers. Width of body, fifty inches; axles, one and one-fourth inches; wheels, three feet four inches, and four feet one inch; hubs, four and one-fourth by seven inches; spokes, one and one-eighth inches; rims, one and one-fourth inches deep; tires, three-eighth by one and one-eighth inches.

Painting—English patent black for body and carriage part, striped with broad line blue, split with fine line white.

Trimming—Half and half morocco, with satin lining.

Price for building the body, $75; for making the under-carriage, $22; manufacturers' price, about $1,200.

C-SPRING CALECHE.

Illustrated on Plate II.

WE are indebted to the courtesy of Messrs. Miner & Stevens for this drawing, those gentlemen having kindly permitted our artist to take it from a carriage made by the firm. Width of body between the arm-rails, fifty inches; wheels, three feet and four feet high; hubs, four and one-fourth by seven inches; spokes, one and one-eighth inches; rims, one and one-fourth inches deep; steel tires, five-eighth by one inch.

Workman's price for making the body, $75; for under-carriage, $20; manufacturers' price for the caleche, nicely finished, $1,200.

NEW YORK CHARGES FOR REPAIRING.— *Wood-work:* new hub in wheel, $5; new spoke, $1; new rimming, the set, $20; half-rim only, $2.75; drafting wheels, $1; carved spring-bed, $10; bolster, $8; carved spring-bar back, $8; *Iron-work*, tire bolts, each, 25 cents; carriage bolts, each, 30 cents; new tires and bolts, $34; setting old tires, $8. *Trimming:* Head-lining, $55; leather top, $55. *Painting:* Burning off old paint, repainting body and carriage-part, $150 to $200; coloring, painting, striping, and varnishing old carriage, $100.

TURN-OVER SEAT ROCKAWAY.

Illustrated on Plate III.

OUR Rockaway this month is from a design drawn expressly for this Magazine by one of our own artists, with the front seat contrived so as to turn forward to admit of ready entrance for the passengers occupying the back seat. The body is of a kind easily made. The tinted portion of the side may be formed of plank, and the gig-quarter worked out in the solid from white-wood, and screwed to the rocker from the inside. This avoids plugging over the screw-heads from the outside, which in that case are apt to show through the paint soon after being used. No amount of care when painting will effectually prevent it. The body should be about forty-six inches wide on the seat between the door pillars; wheels three feet eight inches and three feet eleven inches high; hubs, four by six and one-half inches; spokes, one and one-sixteenth inches; rims one and one-eighth inches; tires, one by three-sixteenths inches, steel.

Painting.—Body black, carriage-part brown, striped claret.

Trimming.—Blue-black broadcloth.

Workman's charges for building body, $50; manufacturer's price for Rockaway complete, $600.

TROTTING COAL-BOX BUGGY.

Illustrated on Plate IV.

WE give on the above-named plate a very pretty design for a trotting Buggy, by an artist who has often contributed to the Magazine in its earlier days, and who now, shaving resumed his labors, we trust will favor us very often with the productions of his pencil. Height of wheels, 4 feet and 3 feet 10 inches; hubs, 3¼ by 6½ inches; spokes, ⅞ inches; rims, 1 inch; steel tires, ⅛ by ⅞ inches; manufacturer's charge for the buggy, $310.

Workman's charge for building the body, $18; carriage part, $8; wheels, $10; shafts, $3.50; spring-bars, $3.

NEW YORK CHARGES FOR REPAIRING.— *Wood-work:* New set of wheels, $75; hub, $5; spoke, 75 cents; new rims, $16; drafting wheels, $1; new shaft, $4; shaft-bar, $2; spring-bar, $2; axle-bed, $4; perch, $5; head-block, $3. *Iron-work:* New ties and bolts, $20; re-setting ties, $8; tire-bolts, 25 cents; carriage-bolts, 30 cents; fifth wheel, $5; resetting two axles, $6. *Painting:* Touching-up and varnishing, $35; re-painting, $75. *Trimming:* Recovering dash, $12; body-lining, $40; leathering shafts, $7; whip socket, including pat. fastenings, $3; check-straps, $1.50; oil-cloth carpet, $2; velvet carpet, $4.

PIANO-BOX ROAD BUGGY.

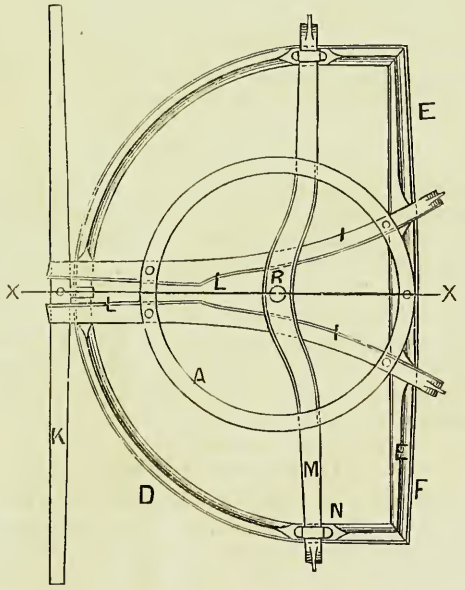
Illustrated on Pla'e IV.

PUBLIC favor makes this description of buggy always salable, and therefore a safe vehicle to have on hand in the repository for callers. Width of seat, 36 inches; wheels, 3 feet 11 inches and 4 feet 1 inch high, with other proportions; the costs of making the parts, and the prices for repairs, about the same as for the coal-box given on the same plate. Manufacturer's price for buggy, $465.

Sparks from the Anvil.

HEIDEN'S IMPROVEMENT IN THE FORE-CARRIAGES OF VEHICLES.

THIS improvement, for which a patent was obtained by John Heiden, of New York city, February 2d, 1869, has for its object, the construction of such fore-carriages as are used in vehicles running without a perch, whereby the same may be made much lighter, cheaper and stronger than heretofore done.



BIRD'S-EYE VIEW OF HEIDEN'S PATENT FORE-CARRIAGE.

In the diagram, A shows the fifth-wheel; M the furchell-bed, with the place for the king-bolt at B; I I the furchells; K the the draw-bar, and D the semicircular bow, which, with the traverse bar E, constitute the chief features of this improvement. It will thus be seen

that the platform D E constitutes the chief support of the superstructure A M I, and therefore these parts will be equally as strong when made much lighter than when made after the old plan, besides doing away entirely with the furchell stays of iron usually employed, essentially lessening the expense of building. The manner in which this platform is secured to the front springs may be seen at N. The platform joint at E is joined by a tenon and mortise, and the entire platform afterwards encircled with iron in the same way wheels are hooped, by heating and shrinking, thereby rendering the whole compact and solid. To make the work still stronger the furchells may be plated with iron as represented at L L, and applied angularly to the line *x x*.

For light carriages, the patentee proposes, in many cases, to dispense with the band F, as when the bow D and bar E are made of hard and tough wood, the platform will be of sufficient strength without it, and in that case, instead of connecting the ends of the bow and bar as previously described, the patentee prefers to have the bar E pass over the end of the bow, and be secured thereto by bolts and clips, allowing the ends of each to project sufficiently to admit of finishing them ornamentally, as by carvings, scrolls, or other designs thereon.

In some instances, especially for stages, when the body is supported on an arrangement of three springs, as well as in other cases, the position of the platform D E may be reversed, and the bar F placed in front, for the connection of the draw-bar K, two of the said springs being connected by shackles to the bar E, and a cross-spring connected to the centre of the rear part of the platform by clips.

The inventor, John Heiden, of 54 Marion street, New York city, is a practical carriage-maker, who has for some time used this improvement in building coaches with success. He is now disposed to grant the privilege to others wishing to purchase the right. Application should be made, by mail or otherwise, to the above address, when terms, which are liberal, will be made known.

CARRIAGE SPRINGS.

CARRIAGE springs should never be put into use without first thoroughly testing them; this may be done by a lever, or by standing on them. A spring that will not stand the test of being sprung together is not fit to be put under a wagon. Oil tempered springs are the most durable, besides being more quick and lively in their action. The 1 3-8 inch spring is the best size for light carriages, although they are not made by many spring manufacturers unless they are ordered. A well-made spring should not settle more than one-fourth of an inch by testing.

HEATING TIRES.

A GOOD place in which to heat tires is a fire-place; one four feet wide between the walls, and of sufficient height to allow room for the largest tire, and made to close at the front by an iron door. By placing the tires in this place, and building a good fire of shavings, the tires may be heated sufficiently in five to ten minutes. A still better method is by the "Gas Heater," one of which is employed in Brewster & Co.'s factory. This heater is supplied with fifty gas jets, arranged circularly around the tire, and by it a steel tire can be expanded and fixed to the rim in a very few minutes.

Paint Room.

BLACK PIGMENTS.

THE bones of animals when reduced to charcoal produce a good black color, but the best of all blacks is made from ivory shavings burned in a closed crucible and afterwards ground very fine. This is our *ivory-black*. It may be freed from all impurity by washing in muriatic acid, or a weak solution of ammonia, and it is then very rich and intense in color. Being costly, its use is generally confined to the best work, while for the commoner class of work, a vegetable black is used.

The soot collected by holding a plate over the flame of a candle is *lamp-black*, and it is obtained on a large scale from the burning of resinous woods. It is used more than any other black in common painting, and is cheap and plentiful. It serves to modify the brightness of the tints of other colors, and is very useful in the composition of such colors as result from mixtures. It is of so fine a body, that, if tempered with linseed oil, it will often be suitable to work without grinding. As this color contains a kind of greasy nature which makes it long in drying, it is well to add two parts of drying oil, or "gold size," with the linseed oil in mixing it.

The best *charcoal black* is made by subjecting wood, inclosed air-tight in an iron cylinder, to a strong fire until the cylinder becomes red-hot, and being cooled and the gases removed, the charcoal is ground ready for use. Birch wood and the grape vine furnish the best charcoal black, the former yielding a bluish, and the latter a grayish shade of black.

Peach black is manufactured from peach stones, burned in a closed vessel, and *Spanish black* from burnt ash. The latter has a brownish tinge.

CARE OF BRUSHES.

BRUSHES used for applying finishing varnishes should be cared for with the utmost pains, as good work depends much upon the good condition of the brushes. A good way to keep them is to suspend them by the handles in a covered can, keeping the points at least half an inch from the bottom, and apart from each other. The can should be filled with slow drying varnish up to a line about a sixteenth of an inch above the bristles or hair. The can should then be kept in a close cupboard, or in a box fitted for the purpose.

As wiping a brush on a sharp edge of tin will gradually split the bristles, cause them to curl backward and eventually ruin the brush, the top of the can should have a wire soldered along the edge, or the edge of the tin turned over, in order to prevent injury. Finishing brushes should not be cleansed in turpentine, except in extreme cases. When taken from the can, prepare them for use by working them out in varnish, and before replacing them cleanse the handles and binding with turpentine.

GOLD BRONZE.—For cheap work, a pretty good imitation of a gold stripe may be produced, without laying on a size, by mixing fine gold bronze with "gold size," and thinning with turpentine. While using, it should be stirred frequently to prevent its settling.

COLORS OBTAINED FROM COPPER.

BY PROF. H. DUSSAUCE, CHEMIST.

Copper gives the three simple colors, yellow, red, and blue. Besides, we have some white salts of copper, others are black, some are green, several are violet, and others orange. From all these colored compounds three only are employed in painting; as *greens*, the carbonate of copper, the sub-acetates, and the arsenites; as *blues*, the carbonate; as *red*, the protoxyd, especially for painting on china and glass.

Green of Copper.—The carbonate of copper, used as a green color, is the malachite, a natural compound which is met in the mountains of the Ural, in Siberia. It is artificially prepared by precipitating two parts of sulphate of copper by four of crystallized carbonate of soda. The temperature of the dissolution must be from 140° to 158°; the precipitate, well washed with warm water, is dried in the open air.

A bluish-green can be obtained by substituting the carbonate of soda, or its equivalent of caustic alkali. This peculiar green is called *Bremen green;* it is a bad color.

Arsenic and copper can form three different colors by their shade and composition: the Scheele green, the Schweinfurt green, and the Mittis green. The Scheele green has received the name of its illustrious inventor; it is obtained by precipitating the sulphate of copper by the arsenite of potash.

The *Schweinfurt green* has received its name from a Bavarian town, where it was manufactured for the first time by Rusz and Sattler. The analysis and preparation of that color have been given by MM. Liebig and Braunnot. The processes of the two chemists, while very different in appearance, arrive at the same end, and the products obtained are identical. The Schweinfurt green can be considered as a combination of acetate of copper with the above.

The yellow shades of those colors, made to suppose that their rational formula ought to admit at the same time the coppric arsenite and the copprous arseniate, the yellow being the color of the hydrate of protoxyd of copper. To prepare the Schweinfurt green, the arsenious acid is made to react directly on the acetate of copper, in presence of an excess of acetic acid. When the green is formed a yellowish tint can be given to it by addition of carbonate of potash.

There are many recipes to make it, and the following by M. Wiegans is one of the best:—Dissolve 20 lbs. of arsenious acid in 38 gallons of water, add 20 lbs. of acetate of copper, and precipitate by one pound of potash; stir well, let it settle, decant on a cloth, and dry.

The *Mittis green* (indicated by M. Mittis, of Vienna) is an arseniate of copper, which is obtained directly by precipitating the sulphate of copper by the arseniate of potash. Oftenest that precipitation is made in presence of sulphate of baryta, which then is dyed green, and furnishes a cheap product. The *Paul Veronese green* is also an aseniate of copper.

Whatever be the brightness of these colors of copper, they ought to be rejected, as they are very poisonous by their acid and their base. Numerous facts have shown that the use of green papers with arsenic was the cause of some diseases, the origin of which was unknown, and which often ended fatally.

Several combinations of acetic acid and oxyd of copper are employed in painting; the verdigris is a tri-basic acetate of copper. It is obtained by exposing copper to the simultaneous influence of the atmospheric oxygen and the acetic acid. At Montpellier they employ directly the residuum of grapes, which, after fermenting and the transformation of the alcohol into acetic acid, disengages acid vapors. At Grenoble they use vinegar, in which copper is immersed from time to time. In Sweden they wrap the metal with flannels impregnated with vinegar, and expose the whole to the air.

The operation is conducted as follows at Montpellier, which is the principal center of that fabrication:—The copper is in thin laminæ; it is rubbed with vinegar, or with a weak solution of acetate of copper, and it is placed in warm boxes. The residuum of grapes is deposited in barrels kept in a dry and aerated place. When the residuum is properly prepared—that is, when it has fermented and taken the odor of vinegar—dispose in brick ditches a layer of that residuum, then a layer of copper, then a layer of residuum, and thus alternately the residuum and the copper; the last layer is residuum, and the whole is closed with boards. Repeat that operation, the time of which is variable; it is achieved when the residuum has become white. Then take the laminæ, and while damp expose them to the air; then carry them to the oven, and dip them in cold water. Expose to the air, and repeat the immersion and exposure to the air as much as necessary (six or seven times and more), until the coating of verdigris is sufficiently thick; then scrape the plates and begin again the operation.

When the plate of copper has been rubbed with vinegar, or a dissolution of acetate of copper, the manufacturer is sure that by provoking a slight oxydation, uniform on all its parts, no part of the copper will escape the reaction. The first coating of oxyd has been rendered adherent by the desiccation under the influence of the air and of the acetic acid developed by the residuum of grapes; with the help of a favorable temperature the acetate of copper has been produced. The evaporation to the air has begun. The desiccation of that coating little adherent, that the evaporation to the oven has fixed more intimately. The immersion in water has placed the acetate of copper in condition of dampness necessary to permit the air to continue the oxydation, which, without that, would stop as soon as the coating is dried.

The verdigris dissolved in vinegar gives fine crystals of neutral acetate, *verdet*, or crystals of Venus. This product is used in dyeing, and properly speaking it is not a color.

Copper Blue.—To obtain the blue ashes prepare nitrate of copper, as little acid as possible; add to the dissolution of that salt milk of lime, keeping the nitrate of copper in excess; wash the precipitate and drain it; then treat the substance by a little powered quicklime. The mixture is done in a mortar.

The color corresponds to the mountain blue which constitutes the natural blue ashes. The product manufactured in England is the finest and most esteemed.

M. Peligot, in his interesting work on the action that atmospheric oxygen exercises when in contact with ammonia on copper shavings, has made known a new blue color that he obtains in different ways; principally by pouring a dissolution of potash or soda in a solution of a salt of copper mixed with an ammoniacal salt. The fine

blue substance formed in those conditions is an oxyd of copper, CuO, HO, insoluble in water, resisting a temperature of 212°, absorbing the carbonic acid from the air.

ENGLISH RUBBING-STONE.

ENGLISH rubbing-stone is preferred to pumice by many painters. As it furnishes its own grit and cuts very rapidly, it is well to do the main part of the rubbing with it and then to complete the work with pumice. Another advantage is its soft nature, whereby it adapts itself more easily to the shape of the moldings than pumice stone would, and on account of the greater rapidity with which it cuts, it is decidedly the most economical for cutting down old work. When not in use, it should be kept in a damp place.

TO STRAIGHTEN PENCILS.

To straighten a striping pencil which has been bent out of shape. Some painters recommend greasing the pencil and drawing it over a piece of warm iron. A better way is to dip a piece of brown paper in turpentine, place it on hot iron, and while held there draw the pencil through it a few times.

TO MIX LAMPBLACK so as to apply a coat per day, grind stiff in "gold size," and thin with turpentine to the necessary consistency.

Trimming Room.

TRIMMING AND PAINTING.

To finish a fine coach in the most tasteful manner, great care should be taken in seeing that the colors employed in trimming and painting are not only pleasing in themselves, but that they are *harmonious*. For instance, if the inside linings of a coach are of brown satin, the painting should in a measure follow this color, or be of a color which harmonizes well with the shade of brown. In England the coach-builders generally observe this rule in reference to colors: *The base of the painting is determined by the color of the trimming, and the striping by the laces.*

THE STYLE OF TRIMMINGS.

FOR linings of open carriages, moroccos are now most popular, and the best of these are for the most part imported direct from French and German manufacturers. For coaches and close carriages, satins and terries are most in vogue, except in broughams, where moroccos are used almost exclusively.

HARNESS BLACKING.

IT is important that harness manufacturers should always keep on hand a good quality of harness blacking, not only for their own use, but to supply their customers, as their own reputation often suffers from using an inferior quality. There are several kinds in the market, but that known as the French blacking is considered the best, and is more used than any other by manufacturers of fine work. Harness blacking may be classed among the patent medicines, and the country is flooded with quack compounds that will sooner or later ruin the leather and destroy the reputation of any harness manufacturer that uses them. Two methods are adopted in order to dispose of these worse than useless compounds: one is to give it some high-sounding name and sell very cheap, "in order that all may be benefited by it;" the other is to put it up in small quantities, and charge a large price, under the plea that "the ingredients used are very costly and scarce." Both ways meet with success, and as the article is either inefficient or its injurious effects are not immediately apparent, years will pass before the public become aware of its worthlessness. The fact that circulars advertising these mixtures contain the names of many prominent men is not always a proof of their merit. It is best, therefore, that harness-makers purchase only of those kinds that have been long before the public and have earned a reputation, or that they manufacture their own blacking. The latter course is much the cheapest.

A good blacking is made of 4 ounces of hog's lard, 16 ounces of neat's-foot oil, 4 ounces of yellow wax, 20 ounces of ivory black, 16 ounces of brown sugar, and 16 ounces of water. Heat the whole to boiling, and stir it until it becomes cool enough to handle, then roll it into balls about two inches in diameter.

A cheap and good blacking can be made as follows: Soften two pounds of glue in one pint of water, dissolve two pounds of soap (castile is the best, but the most expensive) in one part of warm water; after the glue has become thoroughly soaked, cook it in a glue-kettle, and then turn it into a large pot; place the pot over a hot fire, and pour in the soap-water, slowly stirring until all is well mixed; then add a half pound of yellow wax cut in slices. Let the mass boil until the wax becomes melted, then add half a pint of neat's-foot oil and a sufficient quantity of lampblack to give it color; let it boil a few minutes, and it will be fit for use.

When a harness has become soiled, it can be restored by the use of the French polish. The ingredients are 4½ pounds stearine, 6¾ pounds turpentine, and 3 ounces of coloring or ivory black. Beat the stearine out to thin sheets with a mallet, then mix it with the turpentine, and subject it to a water bath. While heating, it must be stirred continually; the coloring matter is thrown in after the mass has become thoroughly heated. It is thrown into another pot and stirred until it is cool and thick; if not stirred, the mass will crystallize and the parts become separated. When used, it must be warmed, and a small quantity rubbed on the leather with a cloth; use but a little at a time and put on very thin.

After it has partially dried, rub with a silk cloth, and a polish will be produced equal to that of newly varnished leather. This polish is also good for carriage-tops, straps, etc., and will in no case injure the leather.—*Manufacturer and Builder.*

STUFFING CUSHIONS, LININGS, ETC.

INSTEAD of hair or moss, prepared sponge cut up into small pieces are now used, to some extent, for stuffing cushions, etc. Some contend that it is preferable to hair, as it will retain its elasticity longer.

Editor's Work-bench.

TO THE FRIENDS OF THIS MAGAZINE.

There are periods in the lives of individuals when it is profitable to take a retrospective view of the past, in connection with a contemplative view of the future, which is our position to-day. This publication came into existence twelve years ago, at a time when all business was very much depressed, and times unusually dull with the craft, throughout the country. Notwithstanding that such was the fact, from the very start the Magazine has been on the whole a success. It is true that we took two years, during our late "unpleasantness," to produce a volume, but this "change of base" proved our security against loss, and accounts for our just entering upon the twelfth volume at the end of twelve years; but had we not done so, probably ours would not have been a *live institution* to-day. Many periodicals that began when the Magazine did, have long since been numbered with the things that were. We cannot but conclude that had it not been for our warm-hearted personal friends scattered all over the country, whose interest in the Magazine has never wavered, it, too, would have long since ceased to exist. In view of these facts, we feel called upon to return our hearty thanks for such unalloyed kindness in the past, trusting that in the future we shall continue to receive the patronage of all lovers of a free press, including all right-thinking minds. If at times we have proved somewhat radical on certain questions of the day; or expressed our ideas in language so positively earnest as to have given offense to a certain class of readers, we can only now regret it, since to have acted otherwise would have rendered us unfaithful to our honest convictions of what we deemed just, and placed us before the world in a false light. Thus much about the past.

For the future we have to say, that our efforts will not flag in the endeavor to make this Magazine, what it has always been, the most reliable and practical work devoted to coach-making that has yet appeared. With this end in view, we invite the co-operation of such literary mechanics as have a practical knowledge of the trade to which this work is devoted. Articles sent to us and not used will be returned, when requested; if accepted, will be paid for according to their value. We have long since discovered that there is much practical knowledge among the craft, that only requires a little effort to bring it to light, and is only now hidden because the mechanic is too modest or diffident to place his thoughts on paper. This should not be so. Editors are the most generous fellows in the world. They scarcely, if ever, lay an article under the table, where practical ideas abound, and will work a long time at correction rather than have their friends placed in a ridiculous light before the public, simply on account of a little imperfection in the language. We therefore hope *our* friends will not hesitate, but send along their favors, pledging ourselves to put their productions in proper shape, should such require revision.

Notwithstanding the hard times among the carriage-makers generally, we are satisfied that something may yet be done to increase our subscription lists. The club rates of this Magazine are extremely low in price, and a very little effort will render them available. As incentives to exertion, we offer as a premium to any club got up according to the rates named in the cover to this number, any chart we have published and have on hand when it is received at this office. This will give the manufacturer, in addition to a copy of the Magazine at a cheap rate, a fine chart designed expressly for his office, worth at least $1, free. Our friends will please be careful, and send all remittances in postal orders, or drafts on New York, to our order. We do not want individual checks on distant banks, the collection of such being too expensive for our purpose. It is much preferable to draw the money yourselves, and send it in registered letters by mail, should no other opportunity offer. Trusting to hear from our old friends at an early day, we close this article.

COACH-MAKERS' CONVENTION.

The matter of holding a convention of coach-makers has been under discussion by the trade journals during the past few months, and the plan appears to be warmly approved by the leading coach builders of this city. We have talked with many of them, and the general feeling seems to be that a convention of this sort is just what has been long needed, and that it cannot fail to be productive of great good to the trade, and that if it were organized and properly managed, a similar convention held once a year would soon become an institution which every carriage-builder would consider an indispensable auxiliary to the business. The carriage-making interest is a great one in the United States, and it has made great progress within the past twenty-five years, but the time is surely coming when it will be much vaster and better organized, and in

that growth which is sure to take place, there is need of co-operation. We know of no agency which will help to bring about this co-operation so effectually as a convention, and we heartily approve of the plan as a most important step in progress.

Our cotemporary, *The Hub*, opened the question by announcing in its January number that a movement was on foot among the leading carriage-builders of New York and vicinity, calling a trade convention to be held in February in that city, and offered its columns to the discussion of the subject and to practical suggestions. In the following issue it continued the subject, stating that the plans were developing, and that many letters of approval had been received from leading builders in all parts of the country. In its March number appeared the following announcement:

"The project of assembling a convention of coach-makers still progresses. It continues to meet with the unqualified approbation of all who hear of it, and many letters of approval and congratulation have been received from influential parties by the gentlemen who are interesting themselves in the matter. Notice has been forwarded us that the original plans have changed somewhat, in order to insure the more general accommodation of all concerned, and instead of calling the convention together in the spring, as was first intended, it has been decided to defer the conference until the autumn. This has been done at the earnest request of many carriage-builders in the West, who write that it would be very inconvenient for them to leave at present, while in the fall it would be a pleasant duty, as at that time many of them make their yearly visit to New York."

Thus the matter stands at present, and it seems probable that in the autumn we shall see the consummation. In the meantime, we stand ready to assist the undertaking in any way within our power. We believe that the first guarantee of success will be to have the matter thoroughly understood by all parties before the convention takes place. It is very likely that at first there may be some who will not favor the project, who will think it unnecessary, or who will fear that individual interests will run the risk of being sacrificed to the public good. But we feel certain that it is only necessary for such to consider the subject deeply and in all its bearings, and they cannot fail to conclude, as we have done, that the influence of such a convention would be valuable beyond all estimate, and that its good influence would extend to every individual in the United States connected with carriage-building.

In conclusion, we make a few extracts from a long and excellent article on this subject which appeared in the *Harness Journal:*

"Carriage-making has grown to its present capacity, in this country, not through any concerted action of those interested in the business, but because of the demand from consumers who have forced the trade up to its present standing. To the lack of mutual understanding among the different branches may be traced many of the errors that now exist. In England the carriage trade is looked upon as among the most elevated of manufactures, and it has not been without an organization for two hundred years. On May 31, 1669, Charles II. granted a charter to a company of coach and coach harness makers, and it still exists, and is known as the "Worshipful Company of Coach and Coach Harness Makers." The Society of Arts has also always taken great interest in these trades, and has awarded valuable prizes for meritorious designs, carriage drawings, models of carriages, and other improvements. It is through this means that coach-making has reached its present high standing in England and on the Continent, and however distasteful it may be to the American pride, the truth is that we have borrowed a great majority of our models for medium and heavy work from our fellow-craftsmen across the water.

"Aside from the general interests involved, there are many special considerations that should secure the united attention of the trade. Prominent among these is the present tariff and taxes now imposed on the manufacturer and importer of carriages. Nominally the tariff is heavy enough to satisfy the most zealous protectionist, it being 35 per cent.; but this fails to present the subject in its true light, for, while the duty on the manufactured article is 35 per cent., the duties on the raw material, together with the taxes paid to the Government by our manufacturers, aggregate at the lowest estimate 50 per cent.; some even place it as high as 80 per cent. on the cost of production. But assuming the lowest figure to be correct, the home manufacturer even then pays more than the importer, and the so-called protection is no protection at all. In its present form, it tends to cripple the trade, besides rendering it impossible to compete successfully in the foreign market. Another evil that is a growing one, is the present unjust discrimination in not charging any duty where a carriage is imported ostensibly for the owner's private use. Under the present working of the law, a carriage can be purchased in London or Paris, driven about for a few hours, and then shipped to this country, as personal property, and free of duty; if imported regularly, the charge would be, for a landau or other carriage of like value, from $400 to $500, thus not only injuring the importer, but almost barring competition by the manufacturer, besides defrauding the Government. The extent to which this mode of importing is carried on, may be inferred from the fact that the total of carriages that have passed through the Custom House of New York, during the last three months upon which duties have been paid, is five, valued at $3,082, while those who are conversant with the trade, assert that there has been no time in many years, if ever, when there was so great a number of foreign vehicles brought into the country as during the time we have mentioned. To correct this evil, and to adjust the tariff and taxes, that we may not only defy competition at home, but become formidable rivals for the trade of those countries that do not possess the requisite skill or material for the production of carriages, is one of the most important matters that should be acted upon in a convention such as is proposed.

"The question of carriage patents could be thoroughly dissected, and some means be devised whereby the real inventor and the manufacturer may be protected from the

charlatans who now flood the country with patents, many of which are useless.

"The trouble now arising from a multiplicity of 'tracks,' the causes, if any, why they should exist, could be thoroughly analyzed and steps be taken to secure a uniform 'track,' in all parts of the country, for light and family carriages. The question of broad tires on road and team wagons, the advantages that the different widths possess, both as to their effects on the roads and the power required to propel them, would be well worthy of attention.

"Innumerable other questions could be introduced. The experience of manufacturers with varnishes, American and English; the effects of them upon climate and temperature; the time required to produce a good serviceable coat of paint; the relative merits of steel and iron for the iron work of carriages; malleable iron and composition metals for mountings; with other important questions, would form fruitful themes for debate, and a fund of information be obtained that would tend to improve and elevate, not only the craft, but the individual members thereof.

"This, too, would be a good opportunity to arrange for the holding of a Journeymen's Industrial Exhibition, similar to that held in London in 1865. A fair of this kind, if properly conducted, could not fail to be of profit and interest to the trade and the community. No manufacturer need hesitate to expose his method of working, through fear of his neighbor taking advantage of it, for no new carriage or harness is out of the workshop one month before its improved points are all known and copied. It is not what has been made, but what is being made, that decides the reputation of the manufacturer, and he who has kept ahead one year may keep ahead the next if he will, and, just in proportion as he strives to excel, so will be his success, and the rivalry produced will be but an impetus to his further efforts."

REVIEW OF TRADE.

When we took a look at trade in February last, it had a gloomy aspect; but that was in the winter season, when good times are seldom expected by the coach-maker. Under such circumstances the manufacturer can only nurse his ambition with the hope that as the season advances times must necessarily improve; and supported by this hope, he toils on, knowing that should he relax his efforts, and times change, unless he has the stock he cannot reap the advantages better days present. Thus inspired, our capitalists in the trade—and some without much capital—kept on manufacturing carriages, until now there is a larger stock on hand than can be advantageously disposed of. A visit to the city manufactories shows that, with a few exceptions, trade continues unusually dull for the spring. A warm day or two may encourage visitors to call at the repositories, but such spasmodic customers seldom prove profitable. The scarcity of money and the general lack of confidence among business men seem to be the obstacles which stand in the way of healthy trade.

Although we consider judicious advertising a paying investment at all times, still, when we find every body at the business, we are forced to the conclusion that times must be deranged in some manner. In looking over the pages of a daily city paper, we find no less than three columns in small type devoted to "Horses, Carriages, etc.," among which appear some of our most popular carriage-builders—a thing never known before within our recollection. The prices, too, at which some of these vehicles are offered, are much less than the expense of producing will warrant, having very much the color of an attempt at forced sales.

Outside of this city, where trade finds employment from local surroundings, business is a little more active—in a few of the Eastern cities, for instance; but on the whole, it is unusually dull for this season of the year, generally supposed to be the coach-maker's harvest-time. Nor can it reasonably be expected to improve until our finances exhibit a more encouraging state, the stringency in the money market being such that it is next to impossible to make collections.

The Western trade, which during the war gave an impulse to business in the East, is now supplied nearer home by its own mechanics, who have since made great improvement in their designs, assisted by the monthly visits of a publication devoted to their special business. We trust that they will still further improve by continuing to patronize this Magazine; and, if they understand their own interest, we have no doubt they will.

VANDALISM.

On Sunday, the third day of April, some miscreants, "on evil bent," visited the carriage repository of the Collings Brothers, on Arch street, Philadelphia, and hacked and cut in a deplorable manner some forty or fifty new carriages, embracing barouches, phaetons, buggies, and no-top wagons. It would seem as though there was more than one person engaged in this despicable business, and that whilst one was using a sharp knife of some kind, another handled a keen hatchet, and both walking, first up one aisle, then down another, without passing by a single vehicle, cut into ribbons every cushion, curtain, top, and dash, making large holes in the side, front, and back panels, besides shivering to atoms the most elegant lamps on the carriages. Indeed it appears to have been the aim of the perpetrators of this vandalism to make thorough work of it, and put the firm to the greatest possible loss. It is said the proprietors have not the slightest clue to the perpetrators of the outrage, and can assign no motive for the transaction.

[This article would have appeared in the May number of the Magazine, but, although already in type, was crowded out. Although rather late, we publish it as an item in the history of events.]

PHOTOGRAPHS FROM CENTRAL PARK.

EVERYBODY at all familiar with the history of New York City, is aware that its Central Park is the life and soul of carriage making there. Since its organization, vehicles have not only more than doubled in number, but have likewise greatly improved in the design. In addition to many original points adopted from abroad, we have invented many improvements of our own, so that now, those who have been in Europe and seen for themselves, tell us that we are far ahead in every essential particular relating to good taste in carriage building. That ours excel them in lightness and grace can be seen by any one interested in the subject, who will take the trouble on any pleasant afternoon, between four and six o'clock, to visit the grand entrance to the carriage drive, on Fifth Avenue, as we have recently done. The moving "World on wheels," in that locality presents the looker-on with one of the finest panoramas of city life to be found anywhere outside of Longchamps in the gayest city of Europe. No picture yet drawn on canvas has exceeded it in interest. As fact is more strange than fiction, so is the *real* here, in interest, far in advance of the artist's *ideal*. But to our photographs.

The first idea the visitor gets of the moving picture is, that it is largely made up of the buggy class of vehicles. These are painted with almost every shade of coloring ever discovered, red generally prevailing. Some of these are of very rude design, built at least fifteen or twenty years ago, *rolling* witnesses of the fact that though we do build our carriages very light, yet after all, they wear so long that it would appear more creditable to art did time demolish them much sooner.

The square or piano-box form of buggy seems to be the most numerous as well as popular, although there is still a respectable sprinkling of the coal-box and canoe assortment still observable. Many of these are driven with two horses, but the greater number in true plebian style are hitched to a single horse, we suppose because the greater proportion of pleasure seekers in this country are found among the middle classes.

Some of the later designs for what is denominated heavy work, are beautiful. Among them we may make special mention of the Landaus and Clarences, which have lately taken the places exclusively of coaches in this country. Park phætons, contrary to our expectations, were not numerous on the day of our visit, but dog-carts—some of them driven tandem, with footmen in *bootee* array, were there in good profusion, occasionally being so *Englishly* high, that it would seem to require a ladder to mount them. We noticed that several of the Victoria and Poney Phaetons had the "rumble" attachment, with servants filling them in true European style, many evidently imported expressly for the purpose.

Among the coupês we saw many of French manufacture, all of which, guaged by an American standard, were faulty in design and clumsily constructed. These were so strikingly different in contrast with ours that they could without difficulty be distinguished at a great distance. Some of these foreign-made vehicles had a rattling about the axles which, to one familiar with the fame attached to the Collinge, seems almost incredible. Whether this has been engendered by age, or sprung from some other cause, we know not, but the fact remains, as any one may learn for himself who takes the trouble to observe.

It is becoming more and more fashionable every day for ladies to drive in what is known as the Poney Phæton, made extremely light and hung very low. This, too, is an European custom, which our American ladies are very loth to adopt. They take to any other recreation more readily than this, although we look upon it as one of the most healthy out-door exercises in which they can *properly* engage. The Rockaway, purely an "American institution," rarely shows itself in the Park, probably because it does not allow of unobstructed vision over the grounds. Many of the darker shaded carriages were striped gilt or with red.

WHO WANTS OFFICE CHARTS?

WE have still a few copies left of the charts, numbers 5, 6, and 7 (all of the earlier ones being sold), which we offer at the low rate of 50 cents each—$1.50 for three. To get them at the price named the money must be sent direct to us by mail. The three charts—which are all uniform in size, so that when framed they match—contain about seventy-five designs of Buggies, Rockaways, Phaetons, Dog-carts, Clarences, etc.—light work prevailing—and are superior in design to any published elsewhere, and will not fail to give general satisfaction to the manufacturer of carriages who wishes to produce a good variety for his repository. These charts are not only handsome ornaments for the office, but will prove useful auxiliaries in obtaining special orders from customers, who, being ignorant of technical terms, without the picture before them, would find it extremely difficult to make themselves fully understood. With these charts, the difficulty is overcome. Application is often made for charts entirely filled with designs for hearses. We take this opportunity to say to the public that we have no charts of this kind, and consequently cannot supply them. We have, however, at different times, published original and other designs of hearses in the MAGAZINE, most of which can be had at 50 cents each number.

AN extensive carriage and buggy factory is in process of erection in Raleigh, N. C.

LITERARY NOTICES.

The attention of our readers is particularly directed to an advertisement of *The Hub*, published in Boston by Messrs. Valentine & Co., the celebrated varnish manufacturers, and proprietors of the Permanent Wood-filling which is now attracting considerable attention in this country. This monthly, furnished at 50 cents a year, contains many things profitable for the carriage and car-shop.

Every Saturday, published by Messrs. Fields, Osgood & Co., Boston, continues to furnish the public with entertaining reading matter, as well as some of the best illustrations published in this country, all for the small sum of $5 a year.

The contents of *The Atlantic* for May, published by the same house, are—Joseph and his Friend; Lost Art; Signs and Show Cases in New York; The Channel Islands; My Secretaryship; May Grown A-cold; The English Governess at the Siamese Court; The Lauson Tragedy; A May-time Pastoral; Among the Isles of Shoals; The Legend of Jubal; A Week at Duluth; Aspromonte; Our Money Problem; The Duel of the Spanish Bourbons, and Reviews and Literary Notices.

Just as we go to press we are put in possession of the *Trans-Continental*, a daily paper, printed by a party of Bostonians in the Pullman palace cars, bound for San Francisco, over the Union Pacific Railway, the motto of which is, "Let every step be in advance." It consists of four pages, each about 8 by 12 inches. The first copy is dated from Niagara Falls, May 24th, which we received the day following. Thanks to the sender.

EDITORIAL CHIPS AND SHAVINGS.

Hubs.—Hubs should never be turned out of the green log, but they should first be blocked out and bored, and then allowed to season. Soon after turning they should be mortised and stored away to dry. The mortise should never be made the full size required, as the seasoning of the hub, or the springing of the chisel, will render it necessary for the mortise to be trued before the spoke is driven into it.

M. Corbett, of the firm of Corbett & Scharch, of 25th Street, New York, has recently returned from Florida, where he spent several months.

The Carriage of the Period.—A leading carriage-maker of New York has given this title to the pony phaeton, the popularity of which continues to increase.

M'Lear & Kendall, of Wilmington, Delaware, have recently added a new Corlies engine of twenty-horse power to their factory.

In Rahway the carriage trade is generally dull.

Wm. M'Cann, of Baltimore, has given up carriage-building, and has opened a repository for the sale of work.

Wm. Bowers, of Philadelphia, has been in the carriage business for twenty years.

In 1550, there were only three carriages in Paris.

Callow & Son are the great London whip-makers.

Coach Lamps.—Silver-lined lamps are taking the place of the gold-lined, for the finest coaches. The former are less showy, and are therefore considered neater and more tasteful.

Clean Paint Previous to Varnishing.—Provide a plate, with some of the best whiting to be found in the market, and have some clean, warm water and a piece of flannel, which dip into the water and squeeze nearly dry; then take as much whiting as will adhere to it, apply it to the painted surface, when a little rubbing will instantly remove any dirt or grease; after which wash the part well with clean water, rubbing it dry with a soft cloth or chamois. Paint thus cleaned looks as well as when first laid on, without any injury to the most delicate colors. It is far better than cleaning it with soap, and does not require more than half the time usually employed in cleaning with that article.

Carriage Items.—B. Hickley & Co., carriage-makers in Lee, Mass., have dissolved partnership, and A. J. Miller has now succeeded them in the business.

Joseph Beckhaus, of Philadelphia, has been in the carriage business in this country for seventeen years. He employs 60 men, and turns out in the course of the year about 150 carriages, mostly heavy, and builds some of the most elegant and costly hearses used in this country. Before the retiring of his partner, the firm name was Beckhaus & Allgaier.

The Piotoowski Method of painting carriages seems to be steadily gaining in favor, as is evident in New York, where it is seen in practical use in *nearly all, if not every*, leading carriage factory. It certainly possesses many advantages over the old method of lead painting.

Nature Transformed.—Bishop Kingsley, writing from Singapore, says: "It is perfectly marvelous how, in this moist climate, certain kinds of trees can be made to take all forms of things animate and inanimate. In a rich Chinaman's garden are trees the exact resemblance of lions, dogs panting for breath, with mouths widely extended; *horses attached to carts, in which every thing, including wheels and shafts and cover, are perfect;* pitchers and urns; deer, with wide-spreading antlers; storks, with long, slim legs and beaks; peacocks, strutting with expanding tails, with many other things which cannot here be enumerated, are imitated in a manner surpassing belief until seen."

Hitching Three Horses Abreast to a Wagon.—J. F. Pond, of Ohio, recently asked the N. Y. Farmer's Club to tell him the best way to hitch three horses abreast to a wagon, so that they will work well. Finds that he cannot do it in the same way he does it to a plow. He says: "The best way I know of to attach three horses abreast to a wagon, is to hitch two in the ordinary way of driving two horses, then place the third horse on the off side, attach a chain to his whiffletree, pass it back outside of the fore wheel, and hitch to the center of the third axletree. A cross-bar should be fastened across the under side of the box, just back of where the wheel strikes, to hold up the chain. This should project out about sixteen inches, and have a ring near the end for the chain to pass through; the end of the cross-bar should crook down six or eight inches, to give low draft. Hitch the tie-rein of No. 3 to hame ring of off-wheel horse, or, if a Dutchman, use a jockey stick. This plan works very well, but has its objections. Can the wise ones of the Club give me a better plan?" Dr. Trimble asked why it would not be best to put the center horse in shafts. Mr. Curtis recommended that he carry lighter loads and use two horses.

CURRENT PRICES FOR CARRIAGE MATERIALS.

CORRECTED MONTHLY FOR THE NEW YORK COACH-MAKER'S MAGAZINE.

NEW YORK, MAY 30, 1870.

Apron hooks and rings, per gross, $1 *a* $1.50.
Axle-clips, according to length, per dozen, 50c. to 80c.
Axles, common (long stock), per lb. 7 c.
Axles, plain taper, 1 in. and under, $5.00; 1⅛, $6.00; 1¼, $7.00; 1⅜, $9.00; 1½, $10.00.
Do. Swelled taper, 1 in. and under, $6.50; 1⅛, $7.00; 1¼, $8.00; 1⅜, $10.00; 1½, $13.00.
Do. Half pat., 1 in. $9; 1⅛, $10; 1¼, $12; 1⅜, $15.00; 1½, $18.00.
Do. do. Homogeneous steel, ⅝ in., $10.00; ¾, $10; ⅞, $11.00; long drafts, $2.50 extra.
☞ These are prices for first-class axles. Inferior class sold from $1 to $3 less.
Bands, plated rim, 3 in., $1.75; 3 in., $2; larger sizes proportionate.
Do. Mail patent, $3.00 *a* $5.00.
Do. galvanized, 3½ in. and under, $1; larger, $1 *a* $2.
Bent poles, each $1.00 to $1.50.
Do. rims, extra hickory, $2.75 to $3.50.
Do. seat rails, 50c. each, or $5.50 per doz.
Do. shafts, $6 to $9 per bundle of 6 pairs.
Bolts, Philadelphia, list. 45 off.
Do. T, per 100, $3 *a* $3.50.
Bows, per set, light, $1.00; heavy, $2.00.
Buckles, per grs. ½ in., $1; ⅝, $1.12; ¾, $1.25; ⅞, $1 75; 1, $2.00.
Buckram, per yard, 16 *a* 20c.
Burlap, per yard, 10 *a* 12c.
Buttons, japanned, per paper, 20c.; per large gross, $2.25.
Carriage-parts, buggy, carved, $4.50 *a* $6.
Carpets, Bruss., $1.75 *a* $2; velvet, $2.50 *a* $3.50; oil-cloth, 40 *a* 70c.
Castings, malleable iron, per lb. 15c.
Chapman rubber, $1.25, doz. pr.
Clip-kingbolts, each, 40c., or $4.50 per dozen.
Cloths, body, $3.50 *a* $5; lining, $2.50 *a* $3. (See *Enameled.*)
Cord, seaming, per lb. 35c.; netting, per yard, 8c.
Cotelines, per yard, $4 *a* $8.
Curtain frames, per dozen, $1.25 *a* $2.50.
Do. rollers, each, $1.50.
Damask, German cotton, double width, per piece, $12 *a* $16.
Dashes, buggy, $1.75.
Door-handles, stiff, $1 *a* $3; coach drop, per pair, $3 *a* $4.
Drugget, felt, $1.25.
Enameled cloth, muslin, 5-4, 32c.; 6-4, 50c.
Enameled Drills, 45 in., 45c.; 5-4, 40c.
Do. Ducks, 50 in., 65c.; 5-4, 60c.; 6-4, 80c.
☞ No quotations for other enameled goods.
Felloe plates, wrought, per lb., all sizes, 15 to 18c.
Felloes (Rims), $1.50 *a* $3.
Fifth-wheels, wrought, $1.25 *a* $1.50.
Fringes, festoon, per piece, $2; narrow, per yard, 18c.
☞ For a buggy-top two pieces are required, and sometimes three.
Do. silk bullion, per yard, 50c. *a* $1.
Do. worsted bullion, 4 in., 35c.
Do. worsted carpet, per yard, 8c. *a* 15c.
Frogs, 50c. *a* $1 per pair.
Glue, per lb. 25c. *a* 30c.
Hair, picked, per lb. 40c. to 65c.
Hubs, light, mortised, $1.20; unmortised, $1. Coach, mortised, $2.
Japan, per gal., $1.75.
Knobs, English, $1.40 *a* $1.50 per gross.
Laces, broad, silk, per yard, 60c. *a* $1.25; narrow, 10c. to 16c.
Do. broad, worsted, per yard, 40c. *a* 50c.
Lamps, coach, $10 *a* $30 per pair.
Lazy backs, $9 per doz.
Leather, collar, 23c.; railing do. 20c.; soft dash, No. 1, 14c.; do., No. 2, 10c.; hard dash, 15c.; split do., 15c.; No. 1, top, 23c.; enameled top, No. 1, 23c., do., No. 2, 20c.; enameled trimming, 20c.; harness, per lb., 50c.; flap, per foot, 25c.
Moss, per bale, 8c. *a* 15c.
Mouldings, plated, per foot, ¼ in. 12c.; ⅜, 13c. *a* 16c.; ½, lead, door, per piece, 30c.
Nails, lining, silver, per paper, 7c.; ivory, per gross, 50c.
Name-plates, $5 for 25, $8 for 50.
Oils, boiled, per gal., $1.20.
Paints. White lead, extra, $12.00, pure, $13.00 per 100 lbs.; Eng. pat. black, 20 to 25c.
Permanent wood-filling, $6 per gallon.
Poles, $1.25 *a* $2 each,
Pole-crabs, silver, $5 *a* $12; tips, $1.25 *a* $1.50.
Pole-eyes, (S) No. 1, $2.25; No. 2, $2.40; No. 3, $2.65; No. 4, $4.50 per pr.
Sand-paper, per ream, under Nos. 2½ and under, $4.50.
Screws, gimlet, manufacturer's, 40 per cent. off printed lists.
Do. ivory headed, per dozen, 50c. per gross, $5.50.
Scrims (for canvassing), 16c. *a* 22c.
Seats (carriage), $2 *a* $2.75 each.
Seat-rails, 75c. per doz.
Seat-risers, Linton's Patent, $2 per pair.
Seats, buggy, pieced rails, $1.75; solid rails, $2.50.
Shafts, $12 to $18 per doz.
Shaft-jacks (M. S. & S.'s), No. 1, $2.40; 2, $2.60; 3, $3.00.
Shaft-jacks, common, $1 *a* $1.35 per pair.
Do. tips, extra plated, per pair, 25c. *a* 50c.
Silk, curtain, per yard, $2 *a* $3.50.
Slat-irons, wrought, 4 bow, 75c. *a* 90c.; 5 bow, $1.00 per set.
Slides, ivory, white and black, per doz., $12; bone, per doz., $1.50 *a* $2.25; No. 18, $2.75 per doz.
Speaking tubes, each, $10.
Spindles, seat, per 100, $1.50 *a* $2.50.
Spring-bars, carved, per pair, $1.75.
Springs, black, 13c.; bright, 15c.; English (tempered), 18c.; Swedes (tempered), 26c.; 1¼ in., 1c. per lb. extra.
If under 34 in., 2c. per lb. additional.
☞ Two springs for a buggy weigh about 28 lbs. If both 4 plate, 34 to 40 lbs.
Spokes (Best Elizabethport), buggy, ⅞, 1 and 1⅛ in. 9½c. each; 1¼ and 1½ in. 9c. each; 1½ in. 10c. each. 10 off cash.
☞ For extra hickory the charges are 10c. *a* 12½c. each.
Steel, Farist Steel Co.'s Homogeneous Tire (net prices): 1 x 3–16, and 1 x 1-4, 20 cts.; 7-8 x 1-8 and 7-8 x 3-16, 23 cts.; 3-4 x 1-8, 25 cts.; 3-4 x 1-16, 28 cts.
Steel Tire—best Bessemer—net prices: 1-4 x 1 1-8, 12c.; 1-4 x 1, 12c.; 3-16 x 1 1-8, 13c.; 3-16 x 1, 13c.; 3-16 x 7-8, 14c.; 3-16 x 3-4, 17; 1-8 x 7-8, 20; 1-8 x 3-4; 1-16 x. 3-4 23c.
Stump-joints, per dozen, $1.40 *a* $2.
Tacks, 7c. and upwards.
Tassels, holder, per pair, $1 *a* $2; inside, per dozen, $5 *a* $12: acorn trigger, per dozen, $2.25.
Thread, linen, No. 25, $1.75; 30, $1.85; 35, $1.80.
Do. stitching, No. 10, $1.00; 3, $1.20; 12, $1.35.
Do. Marshall's Machine, 432, $3.25; 532, $3.75; 632, $4, gold.
Top-props, Thos. Pat, wrought, per set 80c.; capped complete, $1.50.
Do. common, per set, 40c. Do. close-plated nuts and rivets, 75*a*80c.
Tufts, common flat, worsted, per gross, 15c.
Do. heavy black corded, worsted, per gross, $1.
Do. do. do. silk, per gross, $2 Do. ball, $1.
Turned collars, $1.25 *a* $3 per doz.
Turpentine, pr gl., 50c.
Twine, tufting, pr ball, 50c.; per lb. 85c. *a* $1.
Varnishes (Amer.), crown coach-body, $5.00; nonpareil, $5.25.
Do. English, $6.25 to $7.50 in gold, or equivalent in currency.
Webbing, per piece, 65c.; per gross of 4 pieces, $2.40.
Wheels, $12 to $22.
Whiffle-trees, coach, turned, each, 50c.; per dozen, $4.50.
Whiffle-tree spring hooks, $4.50 per doz.
Whip-sockets, flexible rubber, $4.50 *a* $6 per dozen; hard rubber, $9 to $10 per doz.; leather imitation English, $5 per doz. common American, $3.50 *a* $4 per doz.
Window lifter plates, per dozen, $1.50.
Yokes, pole, 50c.; per doz, $5.50.
Yoke-tips, ext. plated, $1.50 pair.

TO CORRESPONDENTS.

A. T. of C.—You will see from our present number, that we publish three charts, all uniform in price, at 50 cents a copy—send money in letter and order.

R. S. of S. C.—Our Southern friends—among which we include our correspondent—will see from this number that the rumor is not true. We have never faltered during the late war, and are still alive.

T. A. of Pa.—Read the catalogue of back volumes, to which prices are affixed, in this issue.

O. B. of N. Y.—You will find your suggestions carried out in this number.