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Mechanical Literature.

THE ADVENTURES OF THREE JOURS.

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Chapter IX.

Helena is a small town of not over fifteen hundred inhabitants. No sooner had I landed from the ferryboat than I started out to hunt for a job. No carriage shop in the place, they told me, but there was a wagon shop, where they did a good deal of work. I soon found it, a dilapidated old shanty, and, on entering, I saw a man painting a wagon, while in the back end of the shop stood an old buggy body, and near it the running part. After bidding him good morning, I gave him the valuable information that it was a fine day, the assertion of which he seemed to doubt, as he immediately expressed a belief that it was "goin' to rain." I soon learned that the aforesaid buggy had been sent in for repairs, but as he could not trim it, why he had only agreed to fit up the iron and woodwork, and give it a coat of paint. I then found out the owner, and before night I had the material in the shop to trim it with, having made a bargain to do the work for fifteen dollars. Stirling, too, was equally fortunate, as he got a job to make a vest at a tailor shop, for four dollars, which I thought pretty good. Finding our friend, the overseer, I informed him of my good luck, and bade him good-by. when we sought a boarding-house. Board was only five dollars a week at the hotel, but as we plead poverty pretty strong, the landlord finally concluded to take us for a couple of weeks or so for four.

Next morning I went to work. I had made my calculations to trim that job in five days, if I had good luck, and in six at most. The second day I felt badly. A very peculiar sensation would shoot through my bones, together with an irresistible disposition to yawn and stretch, so that finally I had to quit work. Going to the boss, I told him how I felt, when he cried, "Oh, that's nothin', only a chill. You'll feel all right to-morrow." I did have a chill, sure enough, for before I reached my hotel my teeth were chattering, and I was shaking with an ague at a great rate. Of course, it was succeeded by a high fever, so that next morning I felt bad enough, but yet I went to work. When I went home at night, I found Stirling had had a chill, too. The next day I had another, and so it continued for a week, when I told my boss that I wanted him to get some medicines, and I would pay him as soon as I got my job done. He got me a lot of quinine, part of which I took, and it broke my chill. Yet I felt far from well. The balance I gave to Stirling, on whom it had the same effect. Yet, as I could manage to work, I felt in a good deal better spirits. Instead of six days to finish my job, it took thirteen, from the time I commenced, owing to my sickness, and it took Stirling nearly as long to make his vest, so that when I drew my money, paid for my medicine, and settled up with our washerwoman and landlord—of course I had to pay Stirling's board for one week—why I had only two dollars left, and no more work.

We determined, however, to reach Vicksburg, and so the next boat that came along we went aboard. Going to the captain, I told him my story, and he finally concluded to let us keep aboard, we promising to pay him fifty cents for all the meals we ate. As we were neither of us very well, we did not feel much like eating, so we made the trip very cheaply. Just before reaching Vicksburg, Stirling had another chill, and when we rounded to and lay beside the wharf boat, I left him to hunt for a job and a boarding-house, in a condition not unlike the boy, who, digging for a woodchuck, when asked if he thought he'd get him, replied, "Get him! why, I must get him, for dad's out o' meat!"

Of course you've heard of Sheppard's carriage shop, at Vicksburg. Well, I went there as fast and as direct as I could go, kicked the boss for a job, and was told that he did not care about a trimmer just then, but probably would want one when the spring opened. Very gravely informed him that "one bird in the hand was worth two in the bush," which seemed to have some effect on him, for, after a moment's silence, he said, "Well, I've got one job that needs trimming—am in no hurry for it, yet let's know what you'll do it for, and we'll see what we can do for you."

After half an hour's talk we struck a bargain, and then I went to hunt up a boarding-house. Now, boarding-houses are plenty in Vicksburg, but somehow they all wanted cash in advance, or enough baggage to secure the debt, and as I had neither, why I found a hard job before me. Finally, I came across a tailor, who offered to board us, and give Stirling a job, so I returned to the boat and had

him removed there. Going to Sheppard's, I commenced work, and when night came I drew two dollars, which I spent at the nearest drug store for medicines, as Stirling was really bad off. In a few days I had chills again, but as ours was a desperate case, I kept on at work, until I finished my job. Drew all my wages, paid my board-bill, and just then the boss received two letters, one from Port Gibson and one from Yazoo City, inquiring for a trimmer. As Stirling had now got about well, I concluded to start out again, so I gave him a couple of dollars—for he was working for his board and washing only—and prepared for my departure. Just then he received a letter from his mother in New Orleans, inclosing twenty-five dollars, so he determined to take the next boat down; and when I hinted that the two dollars I had just let him have a few hours before, as well as other money loaned him, would be very acceptable, he coolly informed me that he did not have more than enough to take him home. With this very impressive lesson of "man's ingratitude to man" on my mind, I started for Yazoo City, and with my usual luck I arrived there just one day too late, as they had a trimmer from Marsh & Denman's of New Orleans. Was introduced to that trimmer, a dandy young fellow, who informed me that he was getting one hundred dollars per month and board, which of course was very agreeable information to me. The shop he was working at, however, was not the only one in the city, so to the opposition establishment I went and succeeded in getting a job, at seventy-five dollars per month and board. I now began to see a little better times, the only difficulty being that, instead of money, I received orders on different stores, but as I was sadly in need of clothing, I took them, and worked on with a pretty good heart. At the end of two months I thought forbearance ceased to be a virtue, so I demanded a settlement, and I found the boss owed me one hundred dollars, but the only way he could pay it was by his note. Took it, of course; and after trying every body in the place, I finally sold it to our blacksmith for twenty-five dollars and an old clock. As I had no idea of turning to a Yankee clock peddler, I gave the timepiece to my washerwoman, and then packed up to start out again. The New Orleans trimmer advised me to go to Carrolton, sixty miles off, as a carriage-maker there had written to him and offered him good wages and a steady job. Concluded to try it, so I secured a seat in the stage and started. Half way is a pleasant little town called Lexington, where the stage stopped for an hour or two to change horses, while the passengers took supper. There was a very good wagon and repairing shop in the place, the boss of which happened to be at the hotel, and learning that I was a trimmer offered me a job. I asked him one hundred dollars per month, which he thought rather high, but finally said he would give eighty. Told him I had to go to Carrolton any way, but to hold the job until he heard from me, and so left him. Arriving at Carrolton, I went to the carriage-shop there, and telling the proprietor that I came from Yazoo City to trim for him, he asked me what I would work for by the month, and board in his family.

"One hundred dollars," I replied.

"One hundred dollars, whew! why, that's more than I make myself. Couldn't begin to think of giving such wages. Will give you forty-five, however."

Then I echoed back, "couldn't think of such a thing," and turning left him. Returning to Lexington by next stage, I found the job still open for me, so I went to work. On Saturday night the boss came to my bench, and exclaimed, "I suppose you want a little change, as you've been on a pretty good tramp," and he threw down a twenty dollar gold piece. It was very acceptable, I assure you, and that night I felt better satisfied than I had been for a long time.

The six weeks I worked there I had a fine time. The place was small but very sociable, and, as the boss paid up pretty well, I got along finely. But at the end of that time work gave out, so I settled up and started for Canton. Got a job there which lasted for two weeks, at two-and-a-half a day. Did not like the place at all, as it was too aristocratic to suit my plain republican principles, and as my Lexington boss wrote me to return and he would give me another job, I did so. My job gave out, and the small-pox broke out in the place at the same time, so I left for Yazoo City. No work to be had, therefore I took an excursion trip on a little steamboat, called the "Troy," for Grenada, on the Yallabusha River. As the boat was to be gone a week, and the fare was only three dollars for the round trip, I concluded it was about as cheap as boarding. When we reached Grenada I found my funds very low again, and I concluded to remain there and look for a job. Could find none at the carriage-shop, so I got work on some stages at the livery stable. Worked for two weeks, and found that I had not made a dollar, consequently I concluded to strike out again. Decided on Hillsboro', in Scott county. Knowing the drivers of the stages pretty well, I managed to get through without much expense.

You are getting weary, I see, pass over those cigars, and each of you take one. It will surprise you how much more interest you will take in my varied adventures while puffing a genuine *Habana*. I was satisfied with a three-center at the time of which I speak, yet, when I did have money, I spent it like a prince. That will do, thank you! You were in clover, while I was in the swamps of Mississippi.

As I was saying, I decided to go to Hillsboro'. Well, I went there, and reached that place about broke. Inquired if there was a carriage shop in town. "No! but a splendid saddler shop," said the landlord. "Be'ant you a saddler?" "Well I could make such things, I suppose," I replied. "Then let's go round and see the boss," put in the landlord, and nothing must do, but I had to go. Reached the shop, and I was introduced as a tip-top saddler looking for a job. "Glad to hear it," put in the boss, "for I want a jour, terrible bad, what'll you work for?" Told him I scarcely knew, did not care much about a job, but would think about it until next morning, and so left him.

Well, the next morning bright and early, the saddler came to my hotel, and begged me to go to work, offering me ten dollars per week, and board, cash every Saturday night. Finally, I concluded to try it, and staid there until the middle of May.

"And your work?" queried Loring.

"Beat the boss's to death. Why the old planters round there were getting so they would have no saddles unless I made them, so out of sympathy for the boss I quit him, and started out to Marion, in Lauderdale county. There I got a job at trimming and painting, with good wages, or to be more explicit, three dollars per day and board. Soon worked myself out of a job, how-

ever, and leaving the place, proceeded up to Macon, a small but very wealthy town, situated right in the heart of the prairie or canebrake region of Mississippi. Calling at the only carriage shop in town, the boss told me he had a full set of hands, and consequently could not give me a job. Wandering about the place, I met an old planter, and telling him what I was, he proposed to buy the material and have me go out home with him, and trim his old buggy and Jersey wagon, which I told him was the very best thing he could do. So he bought a lot of enamel cloth and damask, and taking the vacant seat beside him, while his little darkey occupied the opera board, we started for home.

When we were fairly out of town, the old gentlemen turned to me, and exclaimed, "By the way, what's your name?"

"Margrave, sir!"

"Margrave, hey, well, Mr. Margrave, do you ever drink any thing?"

"Occasionally, sir."

"Jim, you little rascal, where's that bottle I gave you in town?"

"I put it under de seat, mas'r."

"Under the seat, hey, well, let's get at it then, for I'm very thirsty, and this is a terrible hot day, you know."

The bottle was got out, and after I touched it lightly, the old gentleman took a pretty heavy pull at it, which he repeated several times during our journey, so that by the time we reached his home, he was pretty well corned. It was a large old fashioned, rambling house, and as we drove up, the old gentleman turned to the little darky, and exclaimed, "Jim, you rascal you, tell your Missus I'll not be at supper to night, tell 'er I've got a gentleman from—where did you say you was from, Mr. Graves?"

"From St. Louis!" I replied.

"Yes, tell your Missus from St. Louis—business of greatest importance—then, Jim, tell Aunt Mary to send our supper in this gentleman's room, do you hear?"

Another servant taking the horses round to the stable, I helped my new made friend in the room designated, where we soon had a very good supper served us, after partaking of which, the old gentleman kept me up the greater part of the night listening to his nonsensical absurdities, nor could I get him to bed until he had drained the last drop of whisky in the bottle.

The next day we made a bargain, I agreeing to trim his jobs for two dollars a day and board, and as I took it pretty easy, and had good living, I found it rather pleasant.

At the end of two months I finished my work, and after settling up, I returned to Macon, and put up at the only hotel in the place. For several days I had not felt well, and that night I was taken sick; indeed, so sick that I roused the landlord, who immediately sent for a doctor, and it was four or five days before I was able to leave my room; just long enough, by the way, to take every dollar I had to pay for medicine, the doctor's bill, and my board. When I did get out, I proceeded to the carriage shop, and as there was a pretty clever set of fellows working there, they interested themselves in my behalf, and soon learned that I could get a job at Columbus, some twenty-five miles above there, so they raised a purse of five dollars, which I received as a loan and started out. Reaching Columbus, I got a job at Atwater's, when I wrote to you, which letter you received, and for the first time since I left you at Memphis, I heard where you were, and as I had seen enough of Mississippi for one season, I immediately threw up my job, and here I am."

"And you are not sorry I should suppose, after all those up's and down's," said Gloner.

"Particularly the downs," put in Loring.

"Not at all sorry, I do assure you, and henceforth I propose to keep in sight of you if possible, and see if my luck won't change. Messrs. Lawer & Fountaine can count on me for their trimmer as long as there is any trimming to be done. But I am rather sleepy after my long story, and I propose that we retire to the "sylvan shades of blissful sleep," as my old friend Thomson says.

(*To be continued.*)

TREATISE ON THE WOODWORK OF CARRIAGES.

Continued from page 117.

The two sides of the body, being similar in symmetry, the demonstrations made on one can be applied to the other. Therefore, with the exception of some figures expressly given in order to define the generation of surfaces, all the bodies will be represented in half. We shall always suppose the bottom part of the body placed on the horizontal plane; the vertical plane or elevation passing the longitudinal axis, and the auxiliary plane generally to the right on the prolongation of the vertical plane. Fig. 47, that conveys a drawing of the body of a phaeton, represented in half on the scale of one-tenth, is constructed in that hypothesis, and in a similar manner to Fig. 28. The only difference that exists between the two figures is, that one being in perspective, shows the points, the lines, and the surfaces in space, that are indicated by capital letters, whereas in Fig. 47 the same points, the same lines, and the same surfaces are brought over upon the planes by projections indicated by italics.

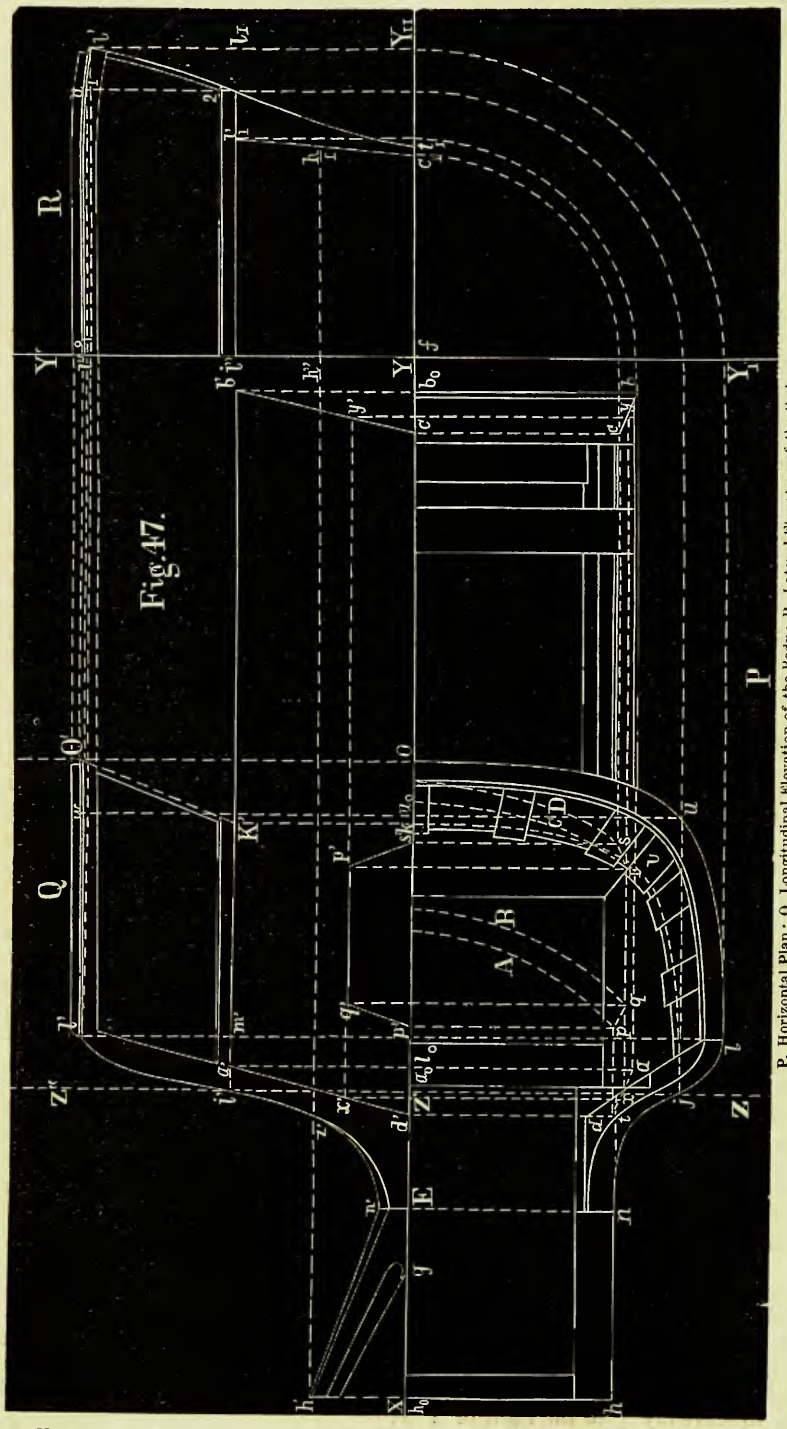
The underneath part of the bottom (Fig. 47), being placed on the horizontal plane, would project itself along the ground lines from g to c' on the vertical plane, consequently all the other points of the same body would project themselves in that plane above the ground line.

In the same manner the axis of the body, being located in the vertical plane, all the points belonging to that axis would project themselves in the horizontal plane along the ground line from h_0 to b_0. All the other points under consideration, being supposed in front of the vertical plane, will project themselves in the horizontal plane below the ground line.

It will be the same with the auxiliary plane; all the points belonging below the bottom of the body will project themselves on the ground line from f to c, and all the points of the axis on Y' Y from i to f. All the other points under consideration of the body will be projected to the right of Y' Y.

This arranged, we will then indicate the manner of proceeding for the execution of the projections on each plane. As the object here is the execution, we will suppose the three planes united on the same plane surface.

The instruments to be employed are the rule and the compasses. The joints or fittings called the segments, made use of in other manufactures for tracing curves, are not employed in carriage woodwork; they are replaced by calibers, which name we shall employ, as it is more gen-



P, Horizontal Plan; Q, Longitudinal Elevation of the Body; R, Lateral Elevation of the Body.

erally used. In order to draw the curves, a sketch is first made on the drawing; then they are copied by means of transparent paper, in order to transfer them on to a slab of wood, intended for the purpose of making the calibers; the calibers are then cut out with the saw, and they are finished by a molding plane.

The paper preferred for plans on a large scale is black waxed paper, because the tracings generally made with white chalk can be washed off by a damp sponge. Whatever paper is used for plans to working size, or for plans reduced to any scale, should be perfectly stretched on a plane surface. For this purpose, wet the paper all over its surface with a damp sponge, then secure it around the edges by slips of wood, fastened down by nails at distances of every two or three inches apart; or, if the drawings are small, the paper can be gummed or secured by any other process. Card board or bristol board, being too thick for the water to penetrate equally, it is used dry.

Small drawings are generally executed on a surface laying horizontally, or a little inclined, as desks are commonly made; but to execute large plans it is preferable to work on a vertical surface, because it is necessary in order to overlook the whole at a single glance, to view the draft from some distance.

To begin, draw on the board an angle composed of the bottom line, X Y, and another straight line, Z Z′ Z″. The board is divided by these two straight lines in the way that line X Y determines the horizontal and vertical plan, and that line Z Z′ Z″ passes at one of the points j', where the dimensions of the body are usually given. Starting from these two lines all the other dimensions are set down.

Commence first with the vertical projections and with the principal parts. For a phaeton body proceed as follows: Carry the height of the box, which in this instance forms the main part of the body, from Z′ to j'; the bottom line of the body, being parallel, and run through j' parallel to X Y, —length being indefinite, we call it $j'b'$; mark on this line the length of body from j' to b'; the straight line thus obtained is the lower projection of the body in elevation.

Next, indicate the depth of the round seat, from j' to K′, width of the front pillar from j' to a'; through point a' carry line $l'd'$, giving the projection of hind pillar; next indicate height of round seat from m' to l', height of pillar from h_0 to h'; also the distance from j' to h'. Finally, show the remaining vertical projections, such as the curve $l'j'n'$ of front pillar, lines $h'n'$ under the footboard, the moldings, the round seat, the footboard, and the straight lines O′K′ and $b'c'$, of which the first forms the intersection of the vertical plane and of the middle of the round seat, and the other the projection of the rear side of the body. The inclination of the straight lines $l'd'$, O′K′ and $b'c'$, is governed by no other law than the taste of the day. Draw also the projection $x'y'$, under the wheelhouse; but the projections $p'q'r's'$, can only be determined after they correspond with the same points of the horizontal plan. With the exception of the projections of the wheelhouse all others can be given on

the vertical plan, without the assistance of the two other plans of projection. The projections of the vertical plan (Q) furnish two dimensions of the body, length and height; consequently we have yet to determine the dimensions of the width. The body-maker begins with showing them on the auxiliary plan (R) as follows: Through the principal points of the body, such as l' j', whereof the dimensions are generally given, carry lines for operating upon, l' l_1, j' j_1 parallel to X Y. Mark on these lines on the auxiliary plan, commencing at Y' Y, the half widths of the body, first half width of round seat, l'' l_1 or j'' j_1 according to where the dimension is fixed, then half width of body j' b_1, f c_1; carry from c_1 the distance c_1 t_1 an inch or so for the projection of pillar from the body. Joining then the points thus obtained through the straight lines j'' b_1 b_1 c_1, curve l_1 j_1 t_1, and tracing the molding at the bottom of round seat over j' j_1, and also the widening 1 2 of panel, there will be all the projections of the auxiliary plan with the exception of the molding on top of round seat, the projection of which can only be formed with accuracy by the aid of the two other plans of projection. The form of curve, l_1 j_1 t_1, and the inclination of the straight line, b_1 c_1, change according to the taste of the day.

To construct the projections of the horizontal plan, it is first necessary to lay down the dimensions of length and width, as fixed on the two other plans of projection. Commence with running down from all the points, h', n', j', l', a', b', c', d', O', K' of plan Q, straight auxiliary lines, h' h, n' n, j' j, l' l, a' a, b' b, c' c, d' d, O' o, K' k, perpendicular to X Y, as sufficiently prolonged in plan P; carry on these lines, parting from X Y the corresponding widths, as determined on plan R; for instance, h'' h_1 from h_0 to h; j'' j_1 from Z' to j; l' l_1 from l_0 to l; j'' b_1 from b_0 to b', and from a_0 to a; f c_1 from c' to c, and from d' to d; joining, then, by the straight lines h_0 h, c' c, b_0 b, b c, b a, a d, t h, and by the curve l j n, the points so obtained, we will have, on the horizontal plan, the projections already laid out on the two other plans.

The four curves A, B, C, D, which give the projections of the wheelhouse, are circles described from point E as axis of the fifth-wheel of the front gearing, and of which we will speak in the second part, treating of the cut-under for the passage of the wheels. The intersections of these curves and of the side of box, have their projections on the horizontal plan, at points p, q, r, s. We obtain the vertical projections by conducting through these points auxiliary lines p p', q q', r r', s s', perpendicular to X Y. The points p' q' r' s' at their intersection with the lower part of wheelhouse and bottom, give the same projections in elevation. Joining, also, p' q', q' r', r' s', we find the projection of the wheelhouse on the side of the body.

The projection of the lower part of the round seat has also been stated on plan P by two of the points l, o, taken on the outside of the upper molding; curve l u o is shaped voluntarily, but the other, j v k, indicating the exterior projection at the bottom of the round seat, is formed out of the first, in the way which we will show in the second part. (*To be continued.*)

Effects of Competition.—A healthy competition is waged by two opposition stage lines in Wisconsin. One line carries for nothing and gives a dinner to each passenger; the other carries for nothing and gives each passenger a dinner and a pair of buckskin gloves.

A GOOD HACK.

(*Concluded from page* 134.)

A perfect cover hack should be able to walk nearly five miles (toward home), trot at least twelve miles, and gallop twenty miles, within the hour, with ease to himself and comfort to his rider. But there are famous hacks that only canter and gallop, and one of the best and handsomest we ever knew could walk five miles and trot seventeen miles an hour (like oil); but galloped like a camel, rolling and laboring every yard. She was bred between a Welsh pony and a thoroughbred horse.

Pace is essential, because those who ride cover hacks are sure to be late and in a hurry; but easy, elastic action, —only to be found in well-shaped, well-bred animals,— is equally essential, because you desire to arrive as fresh as possible, after your bustle, to cover-side, and above all, to enjoy the change from a tired hunter to a fresh hack, and *glide*, as it were, towards home.

A perfect cover hack can jump pretty well, especially stiff timber, creep through cramped places, and lead over impossible places, and then he is quite equal to a dog with harriers, or to carry your eldest hope to foxhounds.

The luxury of the age in horse flesh is the Park hack, ridden daily for pleasure only, capable, if perfect, of doing a long day's journey well; but that is not essential, as he is seldom required to go more than five or six hours at a moderate pace. The true Park hack must be handsome in a picturesque point of view, which is quite different from the handsomeness of a hunter—as different as the ideal form of Mars and Apollo—easy in every motion and pace, full of courage, yet with the sweetest temper, silky, elastic, graceful. Mares are admitted among perfect hacks, and are often more beautiful, though less to be depended on, than geldings. The latter are, all other things being equal, preferred.

The statesman, the great lawyer, the surgeon of European reputation, the capitalist on whose signature miles of railroads and acres of docks all over the world are constructed—the journalist, whose brains are to him both capital and power—all the hard workers whose means permit and tastes allow—all the army of pleasure-seekers who work hard at amusement—all the gatherers and distributors of wealth may find in a perfect Park hack a luxury, a rest, a healthy excitement, a pleasant fatigue, a medium for grave or serious converse, for light, lively gossip, for making love, for making friends, for patching up quarrels, for selling bargains, or arranging political combinations, which the old-fashioned squire, the provincial manufacturer, and the turf man who never rides, and who looks on horses as mere machines for betting on, cannot understand, and therefore despise. A fine form and elegant manners are indispensable in the Park hack. A hunter may have a plain head and a rat tail, may be a stumbling slug on the road, or a hard puller in the field, but if he fence brilliantly, and can gallop, and live through a first-class run in a first-class country, he will command a long price, because all minor faults are forgiven in consideration of his perfection in his trade.

The following sketch of the Park hack is from the pen of one of the most fashionable dealers and finest horsemen of Piccadilly:—The Park hack should have, with perfection of graceful form, graceful action, an exquisite mouth, and perfect manners. He must be intelligent; and amongst horses, senseless brutes are legion, for without intelligence, even with fine form and action, he never

can be pleasant to ride. Thoroughbred is to be preferred; and if not quite, as nearly thoroughbred as possible, of any color except mealy or foul marked. White marks often much improve, sometimes quite disfigure a horse. The height may be usually taken at from fourteen hands to fifteen hands two inches; but tall horsemen and women look best on tall horses. That most thoroughbred hack, Fire King, purchased for the Emperor of the French, at the Agricultural Hall, in May last, was full fifteen hands three inches.

The head should be of the finest Arab type. The neck well arched, but not too long. The shoulders, light at the points, long, and grown well into the back. The loins should be accurately arched, and the quarters level and nicely rounded, not drooping toward the tail (like many capital hunters, famous race-horses, and useful road hacks). The mane and tail should be full, straight, without the least suspicion of a curl, and every hair as soft as silk, four clean, well-shaped, well-placed legs, the fetlocks rather longer than would be chosen for a hunter, and from such a form action may be confidently expected, pleasant to the rider, and a pleasure for even the commonest observer to follow.

The walk of a Park hack should be perfection—fast, springy; the legs moving apparently independently of the body without apparent exertion, with all certainty of machinery, the head carried in its right place, the neck bent, and the tail displaying a full flag gracefully keeping time with the footfalls. From the walk he should be able to bound into any pace, in perfectly balanced action, that the rider may require.

Those who remember the warrior Marquis of Anglesea on his Pearl, will be able to realize this sketch. But a survey of Rotten-row in the season will always present some pictures of life and motion, fire, courage, and docility to which no painter could do perfect justice.

Perfection can only be obtained by fortunate and wealthy purchasers who know how to choose, or who allow those who do know to choose for them. Such horses have been sold at four hundred and even five hundred guineas. The ordinary price of a park hack may range from eighty guineas to two hundred pounds.

Although more beautiful riding horses may be seen in Hyde Park than in any other city in the world, there are also more discreditable brutes to be seen there than elsewhere. Besides screws of all kinds, the well-worn ci-devants of riding-schools, immortalized by John Leech, and the many useful animals whose owners neither deserve nor desire observation, there are all the eccentricities of a city of three millions of inhabitants. Every thing odd in color, in shape, and in training; huge men on ponies bending under their weight; little men on giraffes. The perfect horseman on the perfect hack, is jostled by the lout with no qualification but the pluck of ignorance, on a star-gazing wretch that has only received the rudiments of a polite education.

"There should," observes the correspondent already quoted, "be as much etiquette in riding in Rotten-row as in the ball-room of a palace. That, however, is a part of national education in which there is much room for improvement."

But the Londoners are not the only comic or dangerous riders. Sometimes country gentlemen bring their stale snaffle-bridle hunters, lumbering along terribly out of place; others indulge themselves in riding cross-made animals of their own breeding, with no other merit. The latest and most remarkable exhibition of wild horsemanship was not performed by an ambitious clerk, or an amateur dealer intent on showing off a half-broken colt, but by a young gentleman of fashion, the descendant of a long line of hunting men, famous in a famous hunting county. The fact is, as one of the greatest masters of hounds and finest horsemen lately remarked, "In the field a hard fellow who can stick on, and does not care for falls, will often hold a place in the first flight; but for the Park, the horse should be perfectly broken, and the rider should understand those principles of horsemanship which, in these fast days, are too much neglected in England. The well-broken Park horse walks, trots, and canters, and changes his leg in cantering on slight indications of hand and leg. Too many hold their reins like a bunch of tapes, and only use their legs to spur."

As to ladies' horses, a perfect Park hack is a lady's horse, with the exception that a man does not look amiss subduing a fiery animal, and by degrees bringing him down to obedience. To use a horsey term, a good horseman may enter the Park with a fine-tempered horse, "a little above himself"—not vicious. The rider with fine hands endangers no one, if his fresh, high-couraged horse have a fine mouth; while the dullest brute with a leather mouth may be at times most dangerous. Above all things, in choosing a Park hack, avoid a nervous animal, which, like an armed coward, is one of the most uncertain of creatures, and, when mad with fright, loses even the instinct of self-preservation. For the same reason, a horse that shies from timidity or defective eyesight (many horses shy from high spirit when not sufficiently exercised) is as much to be avoided as a stumbler. In country riding, a horse has room to shy. On the other hand, it is magnificent to see how sometimes a high-couraged horse will positively enjoy and display himself at the sound of shouts, hurrahs, musketry, or military music. In the Life of Sir Fowell Buxton, it is mentioned that his favorite horse, John Bull, stood in a grand attitude, when surrounded by a mob who were hooting and hissing the Prince Regent, excited but motionless, like a fine statue. The Prince was so much delighted with the horse's behavior, that he sent to purchase him, but "John Bull was not to be sold."

A word about the weight-carrying cobs, which in perfection are as scarce as any class it is possible to name. Plenty of cart-bred brutes, with thick, hairy legs, heavy shoulders, and round quarters, are to be found in the Park, bestridden by stout gentlemen, whose ignorance it may be presumed, gives them courage; plenty, too, that go safely in very vulgar form, whose chief merit is their docile stupidity. But the ideal cob to carry a millionaire, is a stout body, short strong flat legs, with fine sloping shoulders, and a thorough-bred head and neck. This cob must walk admirably, with reins on his neck, nodding his head, and must pace from Hyde Park to the Bank if needed without slipping, sliding, or paying the slightest attention to the most unexpected sights or sounds. A very light mouth is, perhaps, not essential, as your welter-weight generally hangs more or less on the bridle. He must trot or canter well—trot for choice—smoothly, and if fast, all the better; but a Park cob need not be fast, if true in his paces. If, then, up to seventeen stone or upward, of a good color (a lady may ride a piebald or a cream, but a banker cannot), with suitable manners, he is

worth from one hundred to three hundred guineas, according to merit and the pocket of the customer.

A young hack, however good, is easily spoiled by a careless rider, just as ladies' horses are often spoiled for want of regular exercise. Half the accidents that take place occur from this cause. Good stud-grooms do not consult my lady, but give Sultan or Fatima, full of blood and full of corn, a full hour's exercise in the morning early before the side-saddle is called for.

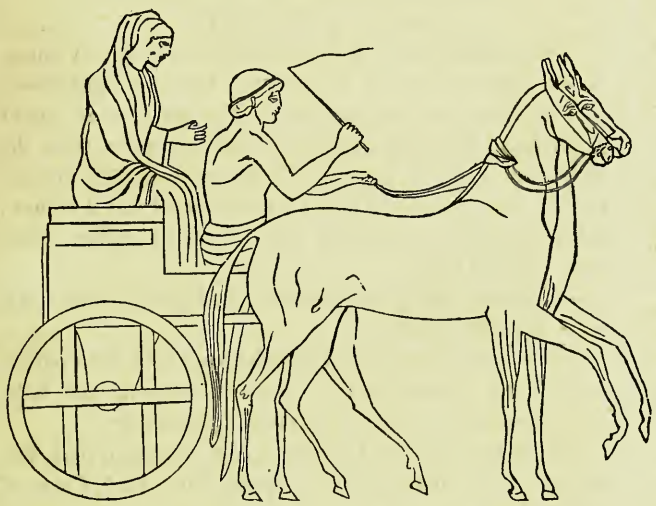
"So you have got the young Kingston horse back again?"

"Why, you see, sir, the gentleman that gave me three hundred for him took him down into the country, and rode him about all the summer, with one hand and a snaffle bridle; so I have to break him over again!"

Park riders, a last word. Don't forget your hands!—*All the Year Round.*

OUR GRECIAN CARRIAGE MUSEUM.—V.

The next illustration is from an ancient Grecian vase, representing the flight of Priam and Æneas from ancient Troy, as described in the pages of Homer.



FLIGHT OF PRIAM FROM TROY.

Some of the painted Grecian vases, furnish interesting studies for the carriage builder and literary scholar. In Millinger's volume* we find an imperfect representation of a car drawn by two horses, in which is seated a young man dressed in a red tunic, going at full speed. The car is hung very high, and probably was designed for racing purposes; the wheels are singularly constructed without either hubs or spokes, instead of which are three bars one much stronger than the others, placed diametrically and perforated to admit the extremity of the axle-tree, and is crossed at right angles by the other two bars, the horses have neither reins nor harness, but are yoked to the car like oxen. Instead of bridle they have head-stalls, probably intended to keep them close together; their collars support the yoke, which is a transom-bar fitted to the extremity of the pole; the driver is seated, contrary to the general custom in racing. Instead of reins, he holds a long wand over the heads of the horses, bent at the extremity like a shepherd's crook,* such as is used in Italy and other countries at the present day, for driving oxen. At the end of the crook, two objects apparently of metal are shown, which by producing a noise were intended to animate the horses in the same manner as bells have since been used.† In the other hand of the driver is a goad, and a red spot on the flanks of the horses, is doubtless shown to mark its effects. This mode of driving horses is said to have been taken from the Lybians, and other African nations. Even in later times the Numidian cavalry would never adopt the use of bridles, but drove their horses by a goad and the voice.

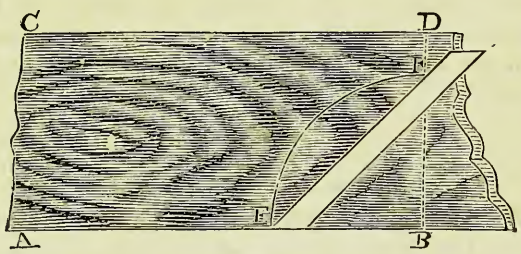
The subject of the painting in all probability alludes to the chariot races, which took place at the Panathenaic games in honor of Minerva, where they held the highest rank among the various contests, and entitled the victor to the greatest honor. Other motives may have concurred in the choice of this subject on a monument in honor of this goddess.

* Painted Greek vases from collections in various countries, principally in Great Britain, illustrated and explained by James Mullingen. London, 1822. This vase was discovered with others by M. Burgen, in 1813, near Athens, on the road leading to Thebes.

GEOMETRICAL EXERCISE.

BY P. B. J.

The introduction of geometrical exercise into your excellent Magazine will have a greater tendency to excite a thirst amongst my brother craftsmen for philosophical instruction, than any other scheme you could possibly devise, and particularly so if such is treated in a form suited to the capacity of those for whom they are intended. Although the generality of mechanics are displeased with the sight of a geometrical theorem (from experience I know this to be true), yet, if moderately persisted in, the plan will ultimately prove successful, for truth is mighty, and must prevail, and, however, rude and savage men may be, yet they are always open to reason and common sense, if left to think for themselves. Certainly no study can be better calculated to awaken the dormant qualities of the mind, than geometry: it will *force* them into action. I, therefore, send you herewith another exercise, which you may, perhaps, think worthy of a place in The New York Coach-maker's Magazine, and, if acceptable, will furnish more hereafter.



By the help of a mitre square, and a pair of compasses, to square the end of a plank:—Let A, B, C, D be a board of which we wish to make the end square at D, B. Having made the edge A B perfectly straight, assume any point (B, for instance) from which we are required to cut the end square, open the compasses any

* See an Account of Eustathius in Homer's Iliad, v. 845.
† Herodotus, B. IV. ch. 189.

distance less than the width of the board, and draw the portion of a circle, as E F, next apply the mitre square to the point E, as shown in the figure, and its edge will cut the circle in E F. If, now, from the point F we draw F B, it will be square to A B, for, by the definition of a mitre, the angle F E B is equal to 45 degrees, and, as F B is equal to E B, the angle E F B is also equal to 45 degrees; hence the two angles F E B, and E F B, being together equal to 90 degrees, the other angle, E B F, is equal to 90 degrees, or square to the line A B.

Note.—By this problem we may ascertain the accuracy of a *square* by means of the *mitre bevil*, or the truth of the *mitre bevil* by means of the *square*, and thus, when either of the tools are not at hand, we may find a substitute for the one in the other.

Pen Illustrations of the Drafts.

BRETT PHAETON.

Illustrated on Plate XXXVII.

This drawing is original, designed expressly for this Magazine, by one of our own artists. It will make a splendid open carriage for either the park or the summer watering-place, being both open and airy—two essential requisites in a pleasure carriage. In this design is embodied every new point in the fashions, or improvement in construction suggested by experience and progress in art. The body is a paneled one, the extra moldings in the center, both lateral and vertical, being glued on. We call especial attention to the position of the dickey-seat, the same being arranged with a view to lightness in appearance and conformably to the latest French fashions. Width across the back seat (in the clear), 50 inches; axles, $1\frac{1}{4}$ inches; wheels, 3 feet 10 inches, and 4 feet high; hubs, $4\frac{1}{4}$ by 7 inches; spokes, $1\frac{1}{4}$ inches; rims, $1\frac{1}{4}$ deep; tire, $\frac{5}{16}$ by $1\frac{1}{4}$.

Painting.—Black, a broad stripe in blue, with two narrow ones on it, in white, near the edges.

Trimmings.—Blue broadcloth.

Workman's price for building the body, $75; manufacturer's charge for the carriage, well finished, $1,400. Charges for repairing the different parts, about the same as for the Park Phaeton, printed on page 104, of this volume.

ROAD PHAETON.

Illustrated on Plate XXXVIII.

We think this is a very pretty design for a light road phaeton, beautifully modeled, and, if properly constructed, will answer the expectations of any moderate customer's desire. Its cheapness, as well as neatness, recommends it to public favor as a summer carriage for exercise in the open air, in fine weather. The "cut-under"—in this case small—could easily be enlarged without detriment to the design. Width of body across the back seat, in the clear, 48 inches; axles, 1 inch; wheels, 3 feet 8 inches, and 4 feet 1 inch high; hubs, $3\frac{1}{2}$ by $6\frac{1}{2}$ inches; spokes, 1 inch; rims $1\frac{1}{8}$ inches; steel tires, $\frac{1}{4}$ by 1 inch.

Painting.—Brown; under carriage, yellow, striped black.

Trimming.—Blue-black broadcloth.

Workman's charges for making body, $40; price of finished carriage, $550 to $600.

New York Charges for Repairing—*Woodwork.*—Hub, $5; spoke, $1; rimming wheels, $18; drafting, $1; axle-beds, each, $4; head-block, $3; perch, $5; spring-bar, $2; shaft-bar, $2; new shaft, $4; pole, $9; yoke, $7.50; fifth-wheel bed, $2.50. *Iron Work.*—New tires and bolts, $18; tire-bolts, 25 cents each; carriage-bolts, 50 cents each; new elliptic spring, $16; new fifth-wheel, $5; resetting axles, $6. *Trimming.*—Leathering shafts, $6; recovering dash, $12; new apron (rubber cloth), $10; whip-socket and fixtures, $3. *Painting.*—Touching up and varnishing, $45; repainting, &c., $90.

SHIFTING-TOP SCROLL COAL-BOX BUGGY.

Illustrated on Plate XXXIX.

Our patrons have in this design a very pretty thing, in our judgment one of the best we have ever published, it being both light and graceful. The scroll-work ought to be raised molding, painted in different color from the body, but not too gaudy. Width of seat, 38 inches; axles, $\frac{7}{8}$ inch; wheels, 3 feet 11 inches, and 4 feet 2 inches; hubs, $3\frac{1}{2}$ inches; spokes, $\frac{7}{8}$ inch; rims, $1\frac{1}{8}$ inches; steel tires, $\frac{3}{16}$ by 1 inch.

Painting.—Body and carriage, black; stripe under-carriage three fine lines red.

Trimming.—Blue-black broadcloth, edged with patent leather, and ornamented, in front of cushions and falls, with raised figures underneath the cloth facings.

Work on body (by the piece), $18; carriage part, $8; wheels, $10; shafts, $3.50; spring-bars, $3.* Price of buggy, $465.

Repairing will cost the same prices as given in detail for the "Nonpariel Top Buggy," on Plate XXVIII in this volume.

DROP-FRONT PONY PHAETON.

Illustrated on Plate XL.

This original design for a pony phaeton is different from any hitherto presented to the public, being modeled very much after the buggy pattern. The inside of the rockers will require an iron plate to make it sufficiently strong to stand the wear and tear of use; but judgment should be exercised that it be neither too light for practical service, nor too heavy for the lightness of the vehicle—but just the thing necessary. The lateral line drawn

*Note.—The price for making spring-bars, as reported last month, is erroneous. The correct price is given in this number.

through the middle of the side panel represents a raised molding. Width on body, 40 inches; axles, $\frac{7}{8}$ inch; wheels, 2 feet 10 inches and 3 feet 4 inches; hubs, $3\frac{1}{4}$ inches; spokes, $\frac{3}{4}$ inch; rims, 1 inch; tires (steel), $\frac{3}{16}$ by $\frac{7}{8}$ inch.

Workman's price for building the body, $20; carriage part, $8; wheels, $10; shafts, $3.50; spring bars, plain, $2; carved, $3. Price of finished phaeton, $475 to $500.

PONY PHAETON WITH RUMBLE.

Illustrated on Plate XL.

This and the accompanying design, both on the same plate, are published for the especial benefit of such as will be receiving orders for carriages suited to summer watering-places this spring, in the hope that they will be well received. The pillar—a sham one—is formed by attaching the molding to the side of the worked-out solid quarter, as shown on the design. The "rumble," although "an old institution" in Europe, is comparatively a novelty with us in this country. Axles, 1 inch; wheels, 2 feet 11 inches and 3 feet 8 inches; hubs, $3\frac{1}{2}$ inches; spokes, 1 inch; rims, $1\frac{1}{8}$ inches; tires (steel), $\frac{3}{16}$ by 1 inch.

Workman's charge for making the body, $25; for making the rumble (always a separate affair), $7 additional. Manufacturer's price for phaeton, $500.

Painting.—We decline giving instructions in these two last cases, because taste varies in this respect when applied to pony phaetons, probably more than any other carriage. In most instances a showy color is used, for which the only reason we can offer is that the customers who use this class of carriages, are themselves of the gayer kind of people.

Trimmings.—Corduroy or broad cloth, drab colors.

Charges for Repairing.—*Wood-work:* New wheels, $18; hub, $5; spoke, 75 cents; new rimming, $16; shaft-bar, $2; spring bar, $2; axle-bed, $4; perch, $6; head-block, $3. *Iron-work:* Resetting tires, $8; new tires and bolts, $18; tire-bolts, each, 25 cents; carriage-bolts, each, 30 cents; fifth wheel, $5; resetting axles, each, $3; when only one arm is set, $2. *Painting:* Repainting, $65; touching up and varnishing, $30. *Trimming:* Recovering dash, $14; leathering shafts, $7; new apron (rubber cloth), $10; whip socket and fastenings, $3.

Sparks from the Anvil.

THE CORRECT LENGTH OF AXLES AND AXLE BEDS.

BY P. B. J.

Our particular attention has been directed to the subject which forms the caption of this article, and for the good of the public, we feel it our duty to give superintendents and blacksmiths a lecture on the setting of axles, and obtaining the correct length of these and their axle beds. Of all the defects which the inventive genius of the last half of the nineteenth century has still left to mar the beauty and perfection of carriage work, this stands forth the most prominent. It seems, that in the stretch for new and wonderful things, the mass of mechanics are prone to overlook the commonest principles connected with old usages, when, perhaps, a proper attention paid to reducing to a system, and properly executing the old, would render the introduction of the newer and cruder styles far more profitable. How to give an axle proper set, is a question that has to do with the beauty and *durability* of all its parts more than any other, yet it is a common practice among many, to utterly disregard every principle of utility and common sense in the setting of an axle. It is rather surprising to note the diversity of opinions in regard to the length of axle beds. There are many old, gray headed men among us, who seem to be totally ignorant of the most simple mechanical rules, which can be geometrically applied to properly obtaining the desired results. Many are perplexed in this task, for the want of knowing how long to make an axle-bed, in order to get any desired width of track, and, at the same time, to have the axle set as it should be—properly.

Now, I have seen and heard old blacksmiths, who have become gray in the service, say to the wood workman, "Cut off my axle beds for me four feet two inches" intending it for a four feet eight track, not knowing the length of the hub or dish of the wheel. They even go so far as to iron the carriage part, with the pole and shafts—the setting of the tire being of the last consideration. Is this mode not erroneous? *I know it is*, even if it is done by one of Fred. Wood's best smiths. I take into consideration the swing and dish of my wheels (a *desideratum* completely ignored by those who cut off their axle beds by guess), which I consider of more importance than any other in setting an axle. What I mean by *swing* is, the difference between the width of the top and bottom of the wheels, when resting on the ground. There is another fact in connection with this subject, and that is, the lower the wheels are, the less will be the swing; and the longer the axle bed must be. I consider the swing affects the track, and by it, and the dish of the wheel, I am governed in the length of my axle, and if this part of the operation is neglected, it is a matter of chance whether the wheels be parallel, or even track right.

The beauty of a carriage is not altogether in the style of the draft, nor in the finish of the painting or trimming, nor does its durability depend upon these alone. If buyers would look more to the construction of wheels and modes of setting axles, there would not be so much dissatisfaction with those on whom the craft depend for

patronage. I think the wheels and axles constitute the most important part of a carriage, and where the wheels, axles, and springs are good, I have not the least doubt that the carriage will give entire satisfaction, both to the buyer and seller; whereas, if they are not good, it injures the maker's reputation, and is a source of expense and vexation to the person who uses it.

Some mechanics seem to think that a straight wheel is a *desideratum* to be obtained. The primary cause, doubtless, of the earlier wheelwright in giving his wheel the excessive dish he was accustomed to, was to provide against casualties from deep ruts, but it has been left to the more modern coachmaker, to discover that the spokes of no-dished wheels have a trembling motion imparted to them by driving over rough roads, which, if they do not actually "work," yet, they will present all the appearances of being "gone," by cracking the paint about the shoulders of the spokes, so that the probabilities are, that a customer becomes terrified, and will leave you forever, having no confidence in your reputation, and dreaming all the while that his wagon is liable to break down at any moment, unless he is furnished with a new set of wheels. We are glad to note that some of our best manufacturers having, by experience, seen the fallacy of straight wheels, have gone back to the old land-marks, and are now dishing their wheels from three-eighths to three-quarters of an inch. I find that wheels to wear well, should dish a little, say, from one-quarter to half an inch, measuring from a straight line across the front of the wheel to the front of the spoke; but you will frequently find in wheels that are well made some difference after the tire is put on, and if the dish is too much, remove the tire before the spokes are sprung beyond recovery.

(*To be continued.*)

Paint Room.

THE PRIMITIVE COLORS.

The accompanying illustrations are so disposed as to show how the three primitives can give the seven colors. Thereby red, blue, and yellow, will produce green, orange, and purple, which are shown in the first diagram of three equilateral triangles. In the second diagram, the tints introduced are green, orange, and purple, with a black center as before (black, as well as white, being considered no color). These three, by mixture of two together, produce brown, olive, and slate tints, which are explained by circumscribing the diagram with circles and subdivisions, and passing the colors gradually around one into the other, till, in each intermediate division, between any two *principal* colors, the declared production is certainly found. This method certainly shows the practitioner how to make the tint he may require. Diagram, Fig. 2, might be drawn at one stroke of the pencil upon the wall of the shop, as a guide to the young beginner.

Fig.1

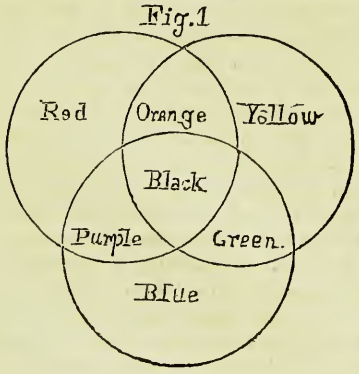
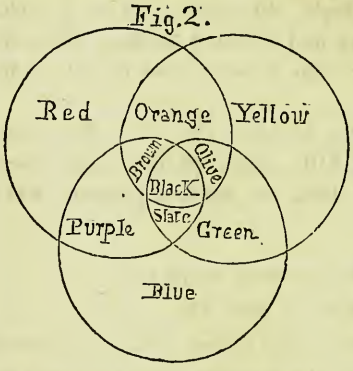


Fig.2.



Badger Brush.

VEGETABLE OILS USED IN PAINTING.

There are two kinds of oils found in plants, called respectively, *volatile* or essential oils, and *fixed* oils. The former are those of which essences and extracts are made, and are called volatile, because when exposed to the air they will, like ether or alcohol, entirely evaporate. The fixed oils, on the contrary, will not evaporate, hence their name. The latter are divided into two classes, *unctuous* or *greasy* oils, and *siccative* or *drying* oils. The drying oils are of great value in the arts, their principal application being in the art of painting. They are the vehicles for the distribution of colors over the surfaces of materials which it is desirable to ornament, or to protect from the chemical action of external substances. Thus used they perform a twofold office, as beside enabling the colors to be uniformly spread upon any surface, they form of themselves a protective coat, owing to their siccative properties.

The sources of the siccative oils are numerous. They exist in the seeds of the order of plants, called by botanists Linaceæ, commonly known as the flaxes. Of these a species is grown in the East Indies, and large quantities of the seed are imported to this country from that source. The plant is also largely cultivated in Ireland, Holland, America, and other places, not only for its fiber, but the seed. The oil obtained from flaxseed, commonly known as linseed oil, is an important and valuable article of commerce, and is sold in two states, called *raw* and *boiled.*

Beside the flaxes, numerous other plants produce seeds containing siccative oils. Of these the hemp, poppy, sunflower, and many nut-bearing trees may be mentioned. Indeed good nut-oil, according to some authorities, possesses the siccative property to a greater extent than any other.

The fixed vegetable oils are either cold or hot expressed. The former are the best oils, but the latter are much used, as a better yield can be obtained by the use of heat, and consequently they are cheaper; while if too high a degree of heat is not used, their quality is not very seriously impaired.

In extracting these oils, the seeds are ground under heavy stone rollers, revolving upon an axis which passes through an upright shaft. As the outside of the rollers must travel faster than the sides nearer the upright shaft,

a rubbing as well as crushing effect is obtained. The meal thus produced is subjected to enormous pressure, and the oil is squeezed out. This is the raw oil of commerce. The siccative property of this oil, as of all other drying oils, depends upon the effects of oxygen upon it. When exposed to the air, it absorbs oxygen and becomes resinous in its character. This is drying in one sense, but not, as is often supposed, drying by evaporation. The latter takes place when any substance parts with its liquid portions, or that which holds its solid ingredients in solution. Oils, on the contrary, dry by absorbing oxygen and combining with it to form resinous substances nearly allied to the well-known resin obtained from pine. Cold solidifies linseed oil, and most other drying oils. They therefore spread better in a warm temperature. The siccative property of linseed oil is increased by heating it with litharge. It was formerly thought that the increased drying property of linseed oil, when heated with litharge, depended solely upon its combination with the oxygen contained in that substance, and it would dry quicker when exposed to atmospheric action. But, according to Liebeg, the principal use of the lead oxide is to precipitate the mucilaginous and albuminous matters contained in oils, which, when present, interfere with the action of oxygen.

Linseed oil is used not only in painting, but in the manufacture of printers' ink, varnishes, oilcloths, etc. When adulterated with fish oil, the presence of the latter may be detected by rubbing a small quantity in the palm of the hand; the smell of the fish oil can then be detected. It is also used in the manufacture of linoleum, which is a combination of the oxidized oil with resinous gums and other substances, possessing the appearance and many properties of India rubber. This substance can be vulcanized like rubber, and is applicable to very many purposes in the arts.

Many painters suppose that it is necessary to use "dryers" in paint, as litharge, dissolved usually in linseed oil by the aid of heat. It has, however, been demonstrated by Chevreul, that these substances are not essential to make paint dry. He performed the following experiments:

Four oak strips were painted, each on one side, with a paint composed of white lead and linseed oil, and on the other side with a paint composed of white zinc and linseed oil. The strip No. 1 was exposed to the air to dry; No. 2 was put into a bottle of the capacity of two liters (3.52 pints) and closed; No. 3 was put into a similar bottle, containing dry oxygen gas; No. 4 was put into a similar bottle, containing dry carbonic acid gas. The results as to drying were examined after twenty-four hours, and again after seventy-two hours.

After twenty-four hours the lead paint on No. 1 was almost dry; the zinc paint had set, but was not dry. On No. 2 the lead paint was almost dry; the zinc paint had set, but was not dry. On No. 3 both the lead and the zinc paints were perfectly dry. On No. 4 both paints were still wet and fresh, and had undergone no change.

After seventy-two hours the paints on Nos. 1 and 2 were perfectly dry. The lead paint on No. 4 had almost set, but it had no adhesion to the wood, and could be easily removed by friction; the zinc paint had undergone no change, but stuck to the finger like fresh paint.

These paints contained none of the so-called dryers, yet when they came in contact with free oxygen, they dried perfectly. But while it is thus shown that dryers are not absolutely essential, it is none the less true that their use greatly facilitates the setting and drying of paint, a very desirable thing under many circumstances.

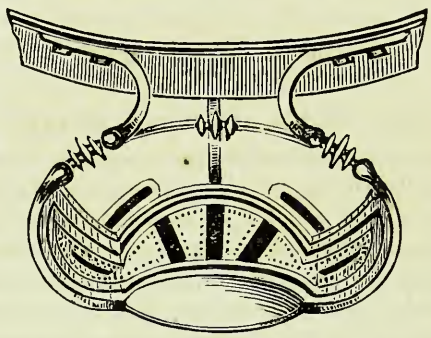
Any admixture of nondrying, or unctuous oils, in the oils used for painting, renders them "tacky" when spread upon any surface. A good test of their presence is, therefore, their behavior in this respect when their layers are exposed to the atmosphere or oxygen in a closed vessel.

It is the affinity which such oils possess for oxygen that renders them liable to take fire spontaneously when spread over the fibers of wool or cotton waste, by the heat resulting from the slow combustion which takes place under such circumstances. Even animal oils similarly treated, are liable to spontaneous combustion.—*Scientific American.*

Trimming Room.

DESIGN FOR CARRIAGE STEP.

This design, from a correspondent, we consider a very pretty thing, and, when well made, must prove very strong and durable, made additionally so by the extra stay at



the backside of the step. The trimming likewise, a pattern of which is shown in the engraving, is deserving of notice.

GENERAL OBSERVATIONS ON TRIMMING.

In writing an article on trimming, it is impossible to give directions, where these can only be acquired by practice, judgment, and good taste, more particularly on what we class as heavy work. There are so many sizes and variations that every one of them require a little deviation in working to suit that particular style of carriage. There are many men that will trim a heavy coach, a small coupe, a landau, or a clarence, all in the same style, without any regard as to the shape, size, and appearance, and thereby spoil the whole design. All trimmers know that most draughtsman have but very little regard to the inside of a body for the convenience of lining, and it is of no use to say any thing about it; but they are left to use their best judgment in overcoming the projecting ends of rockers and rocker-plates, long bolts, and many other things that seem like impossibilities when he commences his job, and finish in decent shape, for which he gets but very little credit when done. This will all change in time, for bosses are beginning to learn that finish in trimming is of some consequence.

In conversing with some builders, located out of the city, they claim that they could compete with city-made

work if they could get their trimming done as neatly, which they can certainly do should they be willing to pay for it. I have lately seen some small coupes on Broadway, with lining in them heavy enough for a close coach, which makes them look crowded and dumpy. Another great mistake is, in putting some new style of trimming in all carriages without any regard to its adaptation or fitness, either for the goods used in lining, or the size of the job. For instance, by making up a satin lining in squares, you loose that nice, rich shade it will have, if made in diamonds of about three and a half inches wide by six in length. Don't be too particular about working up the ends of the points in satin goods, as a little falling in helps to throw out the shade and luster. In using cloth, squares not only look the best but work much easier. I have noticed lately several jobs where wooden frames have been used in place of dickey-seat cushions, covered with cloth. I don't object to the cloth, for that will help the trade if people will buy them, for they will soon want renewing. As for the frames, I inquired of an English coachman how he liked them, he says, "Not at all; I haven't used it above a fortnight, and now it is all caved in; there is nothing loike leather."

Editor's Work-bench.

THE TRIALS OF BUSINESS LIFE.

All men in business life have more or less ups and downs in the voyage, but we have sometimes thought that carriage-builders have had to encounter more than their proportionate share of perplexities. The poor fellow cannot, like the cabinet-maker, rely upon glue to cover up and remedy defective framings; nor, like the carpenter, trust to wedges to hide his faulty joints, but must depend upon careful workmanship, seconded by the choicest kinds of timber, if he would entertain the least hope of ever getting even a passable reputation for making good work. Then, in addition to good workmanship and timber, this last must be something more than seasoned, or else it will shrink when exposed to the elements; and his iron and steel must be of the best—and this is often poor enough, when submitted to straining, for, when soft it wears, and when hard it breaks; and his paints must be the purest and richest, or else they peel off and fade; and his cloths must be fine, as well as "fast colors," to satisfy, —and what shall we say of his varnish? We cannot say much in favor of some that is sold, especially when it is offered "petter ish good," and so we refrain.

But this is not the whole story, for, after he has done his best to have every thing made just right, and has sold his carriage—may be at a small profit, more often not any—and begins to flatter himself with hopes of success, up drives a customer, his eyes flashing fire, his mouth filled with curses, declaring that he has been cheated, and that the carriage sold him is not worth a straw, which, if not calculated to try the patience, yet seldom fails in startling the poor fellow from his dreamy quietness into serious realities. Well, you ask, what is the matter now? "The matter," re-echoes the maddened customer—"*the matter*, see here's a bolt broke a'ready, which came near costing me my life." And is this all, you cooly inquire. "This all, why I think it is enough to condemn the whole carriage"—and so it is in the minds of more than half of our customers, simply because they will never make reasonable allowance in any cases of this kind.

We see here that a single bolt has fanned a flame, when, perhaps, this same bolt has been bought and paid for, as "the best Philadelphia," by the unfortunate builder, in the hope of having it perfect. And then again an axle breaks—perhaps one of "Saunders Improved," as we once had—before it has run two weeks, and then what an outcry! Should the carriage not yet be paid for, then the prospects of ever being paid at all are painfully lessened. We might go on and lengthen this article beyond endurance, in recounting the trials and perplexities invariably incident to the business of a carriage builder, whose occupation requires a great outlay of money, and gives him but small returns, affording him only the poor paying consolation—that he is contributing to the comforts and pleasures of others.

THE TYRANNY OF LABOR.

In the outcry which unprincipled demagogues have instituted against the tyranny of capitalists, both through the public press and before popular assemblages of workingmen, the fact that labor itself is often tyrannical—when it has the power—seems to have been wholly ignored. This is sometimes illustrated in its action toward employers; but still more frequently against the personal interests of the laborer himself. Let us look at this matter in the light of reason.

Suppose an employee, after having made a bargain with an employer, satisfactory on both sides, goes to work, the first question put to him by his shop-mates will be, "Do you belong to our union?" Should he answer affirmatively, his "card" will be demanded, and he expected to "toe the mark" to the very letter. If no, then he will be told, "We do not allow 'scabs'—non-union men—to work in this shop, and you must pack up and leave immediately, unless you agree to join us the first opportunity." If the new hand has any heart in him, he, in such a case, demurs at such an infringment upon his "vested rights" as a free man of a free country, and immediately looks around for aid. He naturally goes to the foreman for protection; but that worthy, having the fear of his tyrannical *underlings* before his eyes, coolly informs the applicant that this is a matter in which he cannot interfere. As a last resort, the poor fellow consults "the boss;" but he, too, frankly confesses that he is

altogether under the control of his workmen, and so, in the end, he is summarily driven away—to starve, if need be!

Now, can this be called a land of freedom, when irresponsible men are suffered to have their own way, and drive a poor laborer away from his work-bench, unless he fixes the price of his labor so as to conform to prices fixed by a conclave of tyrants? And these oppressors, too, chiefly foreigners ground out of Europe by the heel of despotism, who, coming here, set up as rulers and tyrants over such as are to the manor born. We boast of freedom in thought and speech, why should a man, willing to work rather than starve, be prevented from so doing? Is not such action the worst kind of tyranny, against which man's entire nature protests?

With such illustrations of "labor reform" before our eyes, it is cheering to find that occasionally these *bad masters* are checkmated. We offer a case in point. Some weeks since the operatives in the shops along the line of the Erie Railroad undertook to dictate terms to the managers, and because they were not complied with, struck in a body, and organized themselves into a committee, whose business it was to prevent others willing to fill the places made vacant by their action from going to work, until such time as the railroad directors should succumb to their wishes.

But how did these *tyrannical* directors act in this emergency? Why, they went to work and filled the places of the strikers with "scabs" at once, and left *the machinery* to adjust itself, while the union men amused themselves in "corner groceries" through the day, and then at night finished by pelting the "scabs" with stones on their way home from the workshops in Jersey City. This being done in New Jersey, where law has some power, these offending individuals soon found themselves in jail.

After several weeks lost in regulating capital without success, the strikers had to give in, and were but too glad to ask to be reinstated in the positions originally held, but without success. Finding their own entreaties vain, they next waited on some of the municipal officers, through whose influence they hoped to be more successful. But Mr. Gould, who acted on this occasion for the railroad, still refused to take one of them back, and closed the conference by hinting that the board of directors had under consideration the removal of all the workshops from the city, which would thereby create a monthly loss of about $70,000 to the place.

When it is remembered that the movement of the ship carpenters in New York city, a few years ago, ruined the trade there entirely, and drove it elsewhere, we think the most skeptical must concede that combinations, having for their object the inflation of wages above that fixed by the laws of trade, are not only *tyrannical* as applied to individuals, but also when applied to communities.

PUBLISHERS' NOTICES.

Last January we announced a new work in preparation for publication, entitled the "World on Wheels," at the same time calling for names of subscribers, such as wish a copy, that we may add them to our list. We do not ask for money until the work is delivered; nor then, if the book should not please, or prove satisfactory. As we then announced, the subject matter will be the "carriages and customs" of the Egyptians, Persians, Grecians, Romans, Italians, French, English, and American, from ancient times to the present, profusely illustrated with engravings of the vehicles described in chronological order, and interspersed with anecdotes, war proceedings, forms of worship, wedding and funeral ceremonies, &c., all connected with the usages of carriages in ancient times. Since we intend to make this an authentic book of reference, as well as an interesting volume for all classes, especially the carriage-maker, we hope to have the pleasure of still adding to our already respectable number of names as the work progresses. We design to publish it in one handsomely bound royal octavo volume of six or seven hundred pages, printed in the best style of art.

The charts Nos. 5, 6, and 7, offered at a reduction in price—50 cents each—for a few weeks, are selling off finely; but having printed off a large edition of each, we are still able to supply copies to others who may wish to have them. All the charts hitherto published by us, from No. 1 to 5, inclusive, have been sold off long ago. This will account for our inability to supply those correspondents who have sent for them heretofore. Send on your orders, with the cash inclosed—only 50 cents a copy—at once by mail. Only such as have tried the experiment have any idea of the value of such auxiliaries as charts in obtaining orders for new work. The three we have on hand, although the carriages all differ, are each uniform in size, containing about eighty designs for buggies, and other fashionable vehicles of almost every kind. You can find nothing cheaper, better, or more appropriate, as pictures for the office, than these charts. Try them.

In reference to back volumes, we have to say that we can still supply orders for complete sets (eleven volumes)—either bound or in numbers, these last lacking the January number, to complete volume seven—at the prices published in our catalogue, which, having been electrotyped two years since, is now incomplete. This we intend to correct at the close of the present volume, and make more complete. The volumes of this work are *all* of uniform size, which cannot be said of any similar publication of like nature, and the matter possesses an interest not likely to die with the month in which it is published, being not only practical but much of it historically interesting.

GOAT TEAMS FOR THE CHILDREN.

Frequenters of the Central Park, during our unusually summer-like winter, will have noticed the dashing miniature turnout, usually standing at one end or the other of the grand walk running from the lake to a point near the entrance from the Fifth avenue, attended by a fine looking "darkey," in full livery, waiting to receive the patronage of Young America, seconded by the consent and assent of doting mothers, at the charge of fifteen cents *per capita*, for the round trip. This phaeton, although a small affair with three seats carrying six persons —one of which is the dickey seat—is drawn by two trained spotless white goats, decked out with showy harness and ribbons, and is the pioneer of four or five others *to be put on the line* in the spring, when the proprietor expects *to have a run* of custom, and secure "a pile" as the reward of his enterprise. Thus far, although this single phaeton was put on late in the season, we understand the enterprise has fully met the expectations of the projector, notwithstanding the outfit cost about $700.

LITERARY NOTICES.

We are in receipt of *The European Mail*, a weekly publication issued in London, for dispatch by the mail steamer, containing a full and complete summary of home and foreign news for the United States, Canadian Dominion, Newfoundland, Prince Edward Island, Bermuda, Cuba, Honduras, British Columbia, Vancouver Island, and the Sandwich Islands. The contents of the number for January 13, are classed as follows: Accidents, Art and Science, Commercial Summary, Court, Criminal, Emigration, Foreign and Colonial, General Summary, Ireland, Latest Intelligence, Legal, Market Reports, Mercantile, Miscellaneous, Obituary, Political, Prices Current, Religious, Scotland, Shipping, Special Notices, Stocks and Shares, Wales, and Wills and Bequests. From this, the reader will gather some idea of how wide a field of information this publication covers. The weekly numbers amount to 32 pages, including the cover, and sometimes, a literary supplement of 16 pages gratis, as in this instance, is given; the whole for 13s. per annum, exclusive of postage, which to the United States is only 4s. 4d., or in all 17s. 4d. The pages, in type 6 by 10 inches, make a suitable volume for binding, two of which in a year, will make a respectable library of itself, and an invaluable history of passing events in the old world.

EDITORIAL CHIPS AND SHAVINGS.

Milford, Conn., Carriage Factory.—The editor of the Bridgeport *Standard*, says: We spent an hour very pleasantly, on Saturday morning, in visiting the carriage manufactory of Messrs. Beecher & Miles. We were kindly shown through the various apartments and the different styles of works explained to us. We find that notwithstanding the dullness in trade they employ their full force of hands, numbering about forty men. This concern built in the year 1869 about nine hundred vehicles, ranging in price from $100 to $300 each, consisting of pony phaetons, queen phaetons, patent side-seat buggies, family wagons, coal-box and piano buggies, both with end and side-springs. We must make special mention of their patent slide-seat buggy, which, though but a buggy, is capable of carrying four persons with ease. For the above arrangement they drew at the New England Fair a premium and a diploma; also a premium at the last Milford and Orange Agricultural Fair. We noticed the same principal applied to some sleighs they were getting up. We observed that they were using Graham's Patent Iron Seat quite extensively. Beecher & Miles warrant their work and promise to make good in money to the purchasers any defect. They claim to build the best buggy for the money of any concern in the United States.

Baulky Horses.—Various methods have been devised to cure baulky horses. The latest comes from Maine, as follows:—"Let me inform humane men and hostlers, and all who hold the reins, that the way to cure baulky horses is to take them from the carriage and whirl them rapidly round till they are giddy. It requires two men to accomplish this, one at the horse's tail. Don't let him step out. Hold him to the smallest possible circle. One dose will often cure him; two doses are final with the worst horse that ever refused to stir."

Thomson's Road Steamers in Paris.—Within the last few days one of Mr. R. W. Thomson's road steamers, with india-rubber tires, has been running through the streets of Paris, dragging behind it a heavy Versailles omnibus with fifty passengers. On the report of the French Government engineers, leave has been granted to the road steamer to ply over two routes, several miles in length, and including some busy parts of Paris. The engineers report it more handy and manageable than horses, and in no way dangerous to the public. The huge india-rubber tires save the machinery from jolting and the road from ruts. The speed is that of a fast omnibus; it went up the paved street beside the Trocadero, of which the gradients are one in eleven, and even one in nine, without the least difficulty, and come down again without any brake. In a wet grass field it was curious to observe how little the wheels sunk into the saturated soil, in fact, it obliterated, on retracing its circle, the deep ruts of the omnibus wheels. This circumstance has drawn the attention of artillery officers present at the experiment, suggesting to them an inquiry whether the system might not be advantageously applied to military transport in campaigning.

Force of Habit.—A Bengal Drayman urges his way-worn vehicle, with the insufferable screech of a dry axletree rubbing the nave of a still drier wheel, nor can you by any argument prevail upon the listless owner to save his ears, his cattle, or his cart by lubricating with oil. If his forefathers drove a screeching cart and wretched cattle, posterity will not dare to violate the sanctity of the custom by departing from the example. An English engineer, in constructing the bed of a railroad, was impatient at several thousands of men carrying each his little earthen dish of dirt on his head and dumping it down as a contribution toward an embankment. He would introduce wheelbarrows. Whip in hand, he compels their use, and departing makes the condition of the payment of wages that the dirt shall be carried in the wheelbarrows. The next morning on arriving at the spot, he sees that they are verily delivering the dirt in the wheelbarrows, for behold a wheelbarrow filled with dirt which four men are carrying on their shoulders.

PICTURES FROM CHINA.—The streets of a Chinese city are crowded with living beings beyond anything ever imagined till it is seen. They literally swarm with men, dogs, hogs, donkeys, mules, a few horses, an occasional caravan of camels or a drove of sheep, and now and then the procession of a lazy mandarin, carried in a chair. When he appears in sight every thing else must get out of the way. There is also a mode of traveling by means of a *mule litter*, which resembles the shafts and frames of a dray, only there are shafts at both ends, a mule going before and another behind, and carrying a man between them. When the journey is over uneven ground, and the animals do not keep step, this style of traveling affords some of the most peculiar wriggling ever known, and gives rise to nausea, like sea-sickness; we will call it *mule* sickness. Thousands of large, fat Chinamen riding on small donkeys, scarcely larger than first-class Newfoundland dogs, excite your commiseration. The Chinese in Peking have a fashion of riding mules by sitting over the animals hips, the whole body being before. When, as is generally the case with these riders, their feet are thrown forward, they present the appearance to a person in the rear, of a tall Chinaman tapering out into a pair of mule's legs below.

SCRAP OF AMERICAN HISTORY.—It is related in Smith's "History of New York," published in 1756, that in the year 1693, Gov. Fletcher, with three hundred men, set sail from New York on the 14th of February, and arrived at Schenectady on the 17th. This was considered such extraordinary swift traveling, that the Indian allies gave the governor the name of "Cayenguirago," or "Great Swift Arrow." Mr. Smith says in a note, that the 14th of February was an early day for the Hudson to be open, but adds: "The climate now is so much altered that three hundred recruits sailed from New York for Albany this year (1756), and last year a sloop went up the river, a month earlier." From this it would seem that the present mild winter is by no means a novelty.

WIPE YOUR FEET.—A gentleman called at a residence in the boulevard Haussmann in Paris. He entered the hall and was going up the stairs, when the solemn porter called him back, saying, "Monsieur has not thoroughly wiped his feet." The gentleman stepped back and wiped his feet until he thought them irreproachable, but he had hardly put his foot on the stair again when the porter remarked with the utmost deference—"Monsieur still has a small spot of dirt on his left heel." The gentleman blushed as he came back, and replied—"It is true; the walking is so bad." "Yes," replied the porter, "it is very bad, and since it is the first time I have had the honor of seeing monsieur, I beg to state that probably he does not know that gentlemen come here only in carriages."

TOO LITERAL.—*Driver:* "Fly, ma'am?" *Old Lady:* "Bless the man, me fly? Why, it's as much as I can do to walk this muddy weather."

SAW DUST.

A YOUNG man in Indiana worked all last summer to clear an eighty-acre tract of land belonging to a young woman who had promised to marry him. When, just as the weather began to get cold, he went to claim his reward, she married another fellow who had looked on while the victim was working.

A WISCONSIN youth, sued for breach of promise, offered to compromise by marrying the girl, if the court would protect him from those other girls who had the same tender claims upon him.

IN the early days, a bride's marriage portion consisted of a feather bed, six chairs, a cherry bureau and table, six cups and saucers, six teaspoons, and a quantity of sand for scouring the floors. Nowadays the groom does not demand the sand even, if the bride's father will only come down with the dust.

AN Irish glazier was putting a pane of glass into a window, when a groom, who was standing by, began joking him, telling him to mind and put in plenty of putty. The Irishman bore the banter for some time, but at last silenced his tormentor by, "Arrah, now, be off wid ye, or else I'll put a pane in yer head without any putty."

A LADY went into a dry goods store in a New England town, and inquired for "bleached cloth." Several pieces of sheeting were shown her for inspection, but failed to suit. "Perhaps," said the lady, "if I should tell you what I want it for, you would know what to give me. It is to be used for *reposing robes*." The man fainted.

CURRENT PRICES FOR CARRIAGE MATERIALS.

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

New York, Feb. 20, 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. 7½ 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. 35 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, Brussels, $1.75 *a* $2; velvet, $2.50 *a* $4; oil-cloth, 40 *a* 70c.
Castings, malleable iron, per lb. 15c.
Chapman rubber, $1.50, 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, $15 *a* $22.
Dashes, buggy, $1.75.
Door-handles, stiff, $1 *a* $3; coach drop, per pair, $3 *a* $4.
Drugget, felt, $1.75 *a* $2.
Enameled cloth, muslin, 5-4, 35c.; 6-4, 60c.
Enameled Drills, 45 in., 50c.; 5-4, 40c.
Do. Ducks, 50 in., 70c.; 54, 60c.; 64, 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* $2.00.
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. (See Advertisement.)
Oils, boiled, per gal., $1.20.
Paints. White lead, extra, $13.00, pure, $14.00 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.

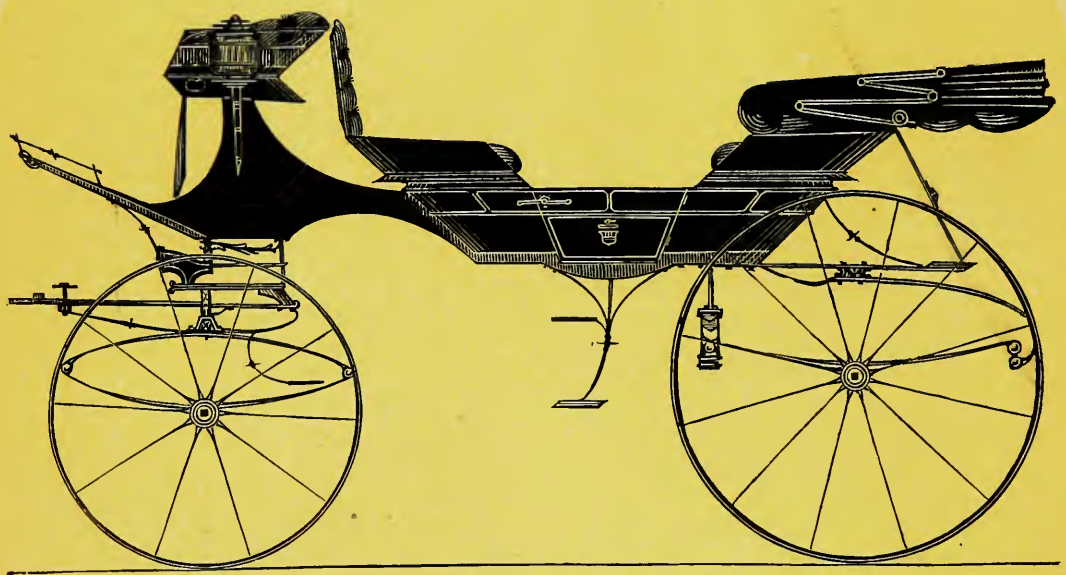
☞ For extra hickory the charges are 10c. *a* 12½c. each.

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 READERS AND CORRESPONDENTS.

N. S., of Mass.—New volumes always begin with the number published in June. We prefer having subscribers begin then—we furnishing the back numbers—but, to accommodate, we sometimes let them commence with the month to suit themselves. Should you choose, you could get the Magazine monthly through your newsdealer at 50 cents a number.

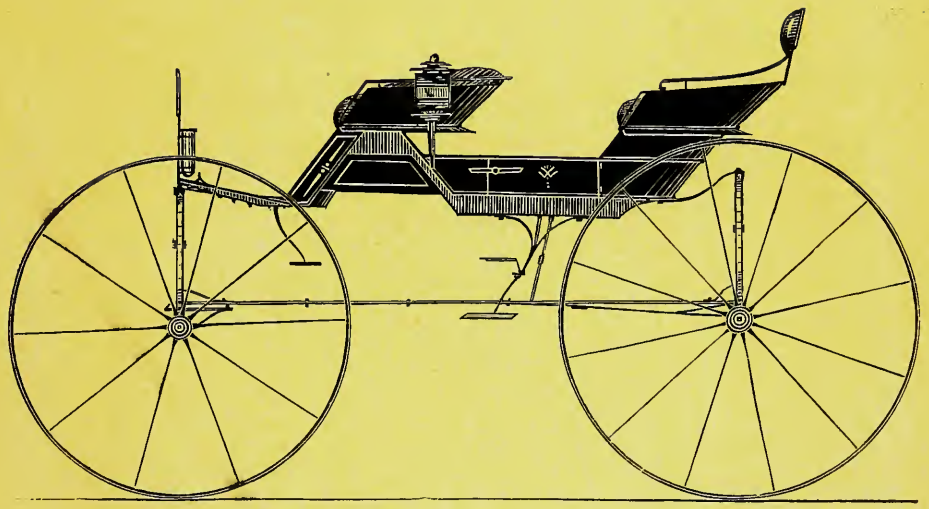
R. J., of Del.—No, sir, you are mistaken. We never recommended boiling hubs to make spokes hold, and nobody else would, did he understand his business.



BRETT PHAETON.—½ IN. SCALE.

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

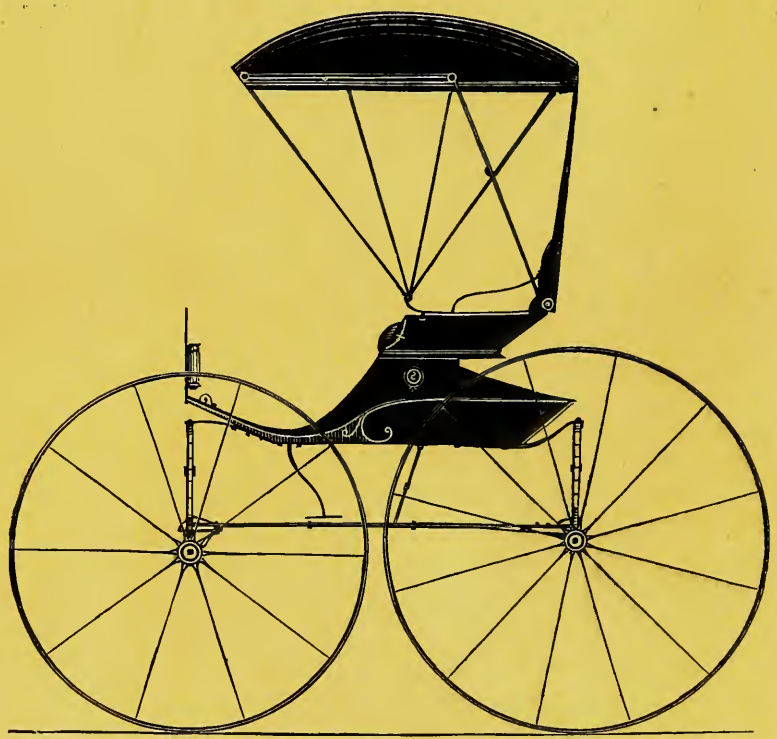
Explained on page 152.



ROAD PHAETON.—½ IN. SCALE.

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

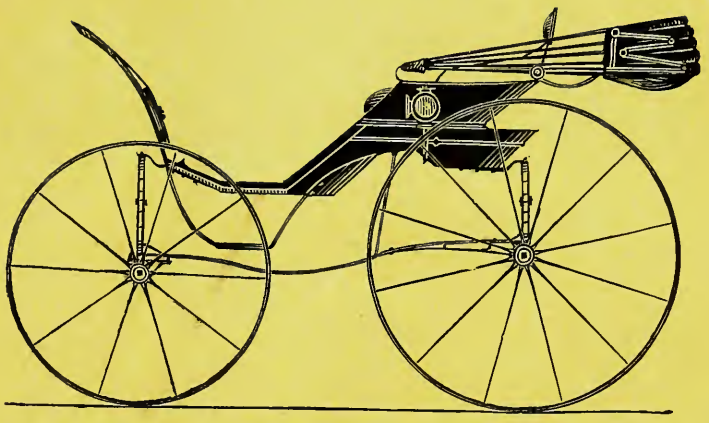
Explained on page 152.



SHIFTING-TOP SCROLL COAL-BOX BUGGY. —½ IN. SCALE.

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

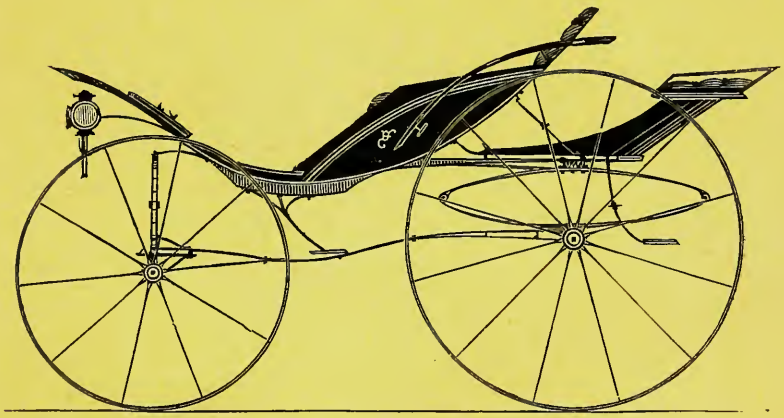
Explained on page 152



DROP-FRONT PONY PHAETON.—½ IN. SCALE.

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

Explained on page 152.



PONY PHAETON WITH RUMBLE.—½ IN. SCALE.

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

Explained on page 153.