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## Mechanical Literature.

### TREATISE ON THE WOOD-WORK OF CARRIAGES.

(Continued from page 162.)

LXIV. CREATION OF SURFACES.—The convention which serves as a base for the method of projections is sufficient to express the form of all bodies terminated by flat sides, such as the body we have represented, because in this case all the projections of intersections of surfaces are straight lines. But on curved surfaces the projections of their intersections or of their apparent contour are not always sufficient to make exactly known the nature of these surfaces. Then, before it is possible to determine the form of lines of intersection of surfaces, it is necessary that the nature of these surfaces be known.

To define the form of regular bodies and the geometry of imaginary surfaces as produced by the running of a straight or curved line; or of a constant or changeable form when it moves and the law of movement which depends upon the nature of the surface to be produced—they call generator the line which in its movement describes the surface, and “director” every line after which the generator moves.

After this new convention a surface is defined when at any point of it we can: 1st, pass a line (generator) through this point in a stated position; 2d, give the form which this line (the generator) describes in passing through the point and this position.

Ordinarily the position of the generator on the horizontal or vertical plane is fixed perpendicular to the two plans of projection, passing one or the other at the given point. The intersection of a given surface and of the horizontal or vertical plane striking it is a generator of the surface.

This new convention is suppletory to and completes the method of projections; it is a supplement because it is impossible without it to project all the points of a surface so as to know their form; it is completed by furnishing the means of determining on the surfaces as many points as are necessary to represent and construct any object of a regular form.\*

In the second part we will treat on the different curved surfaces of which carriage bodies are composed, and then describe the forms and particular positions to be assigned to their generator and director lines. For the present we will give an example of the generation of two surfaces by the movement of a straight line, which will serve to make this new convention understood, and also complete the method relative to the representation of bodies.

LXV. The plane, which is the most simple of all surfaces, may be considered as produced by the movement of a straight line, of which all points describe straight parallels. If on a plane is given a position by two straight lines meeting at a point, any one of these could be taken for the generator or director line. The plane L (*fig. 28*) is a plane the position of which is determined by two straight lines A B and B C. Taking line B C for the generator, we presume that it moves parallel to its first position by gliding on line A B as its director. By this movement the generator produces surface L, and the lines covering it can be imagined as being made by the generator B C.

When, on the contrary, we take A B for generator, and B C for director, all the lines covering surface L would be the successive positions of the generator, and every one of these lines is a generator of this surface L. We will now give an example of the use of generators for determining the point of a surface.

Let it be any point ( $q q'$ , *fig. 47*) of which we have to find the two projections by the aid of the two following given: 1st, that the point has to be found on the surface ( $a b c d$ ,  $a' b' c' d'$ ) of the body and on the most elevated part of the wheel-house; 2d, that its horizontal projection has to lay on the arch of circle B, described from point E as center.

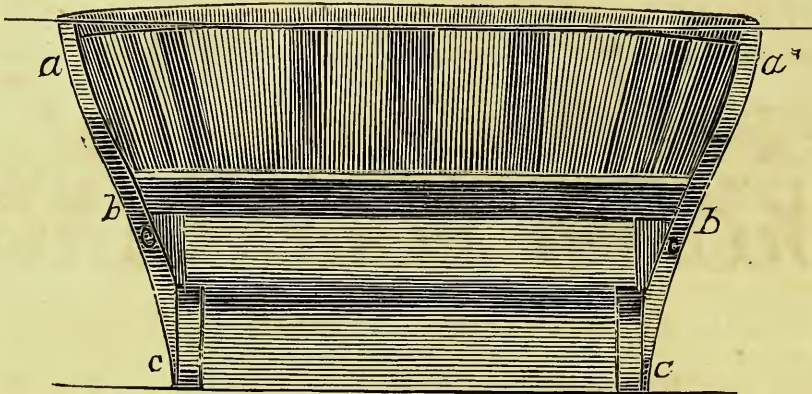
Because the proposed point has to be found on the most elevated part of the wheel-house, we carry a horizontal  $x' y'$ ; at this height it passes through the vertical projection of this point, but actually we do not know yet where this projection is. We consider line  $x' y'$  as the vertical projection of a generator of surface ( $a b c d$ ,  $a' b' c' d'$ ); we find the horizontal projection of this straight line by carrying through the projections already determ-

and surfaces which geometry considers, and of which all points can be determined by the analytic method, but also all surfaces of which it will be possible to determine the position of any point by a graphic construction after having settled the law of its generation.

\* By the expression “regular form,” we do here not only understand lines  
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Fig 48.



ined,  $x'$  and  $y'$  perpendiculars to  $X Y$ , till they strike lines  $a d$  and  $b c$  at  $x$  and  $y$ ; line  $x y$ , which joins the two latter points, is the horizontal projection desired.

After having the two projections, horizontal and vertical, of the generator ( $x y$  and  $x' y'$ ), the two projections of point ( $q q'$ ) will be easily found; the first has already been obtained by the intersection of the arch of circle  $B$  with the horizontal projection  $x y$  of the generator. But the two projections of the same point are (*art. 59*) on the same straight line perpendicular at the intersection  $X Y$  of the two plans of projection; and furthermore the other projection has to fall on  $x' y'$ , where it will be found at  $q'$  the intersection of the perpendicular  $q q'$  to  $X Y$  with the vertical projection  $x' y'$  of the generator.

**LXVI. GENERATION OF A CURVED SURFACE BY THE MOVEMENT OF A STRAIGHT LINE.**—Figure 48 shows the front of a phaeton body on the horizontal plan. If we imagine a horizontal line  $A B$  actually applied to the upper part of the front pillar moving from up to down parallel to its first position, supporting itself constantly on the points  $a b c$ ,  $a' b' c'$  considered as directors, this line will produce planes  $C$  and  $C'$ ; or, what is exactly the same, if planes  $C C'$  are well executed, they must be such that a horizontal  $A B$  applied at any height of the planes coincides perfectly with them.

A surface produced thus by the movement of a straight line parallel to itself is a plane when the director is a straight line (*art. 65*), and cylindrical when the director is a curved line. When the planes of the different pieces of wood, placed symmetrically on each side of the body, as those of the pillars of the phaeton which we have just now considered, are on the same plan or on the same cylindrical surface, the body-makers say they are *a la règle* [according to rule]; because, when they put together the bodies, to assure themselves that the pieces placed symmetrically on each side are well put up, they apply to these planes, at different points, the edge of a rule, which they take care to hold horizontally—or the planes are well executed and the pieces correctly put up if the edge of the rule, thus applied, coincides perfectly with them.

Nearly all surfaces limiting the front, rear, top, and bottom, of bodies, with the exception of pavilion tops and rear sides, which are sometimes made doubly curved, are either plane or cylindrical surfaces having for generator a horizontal line, both when the sides are paneled up or only provided with sticks, as those of  $C$  and  $C'$  which we considered.

This mode of generation is the one offering the greater facility in the building of bodies, because all the pieces and braces composing one side can be finished and worked out with more accuracy and in less time than if they had to be worked lengthwise. But if the surfaces we considered had been doubly curved, it would have required, to bend the panels, an apparatus which always complicates the work; and to prevent these panels from getting out of shape, it is also necessary to hold them inside by an increased number of braces.

**LXVII.** These are, undoubtedly, the different considerations which have made us adopt for the front, rear, top, and bottom, of carriage bodies, such

surfaces as those of which we have exposed the generation in the foregoing. These surfaces, without exception, for all bodies, project on the vertical plan, according to a line which is straight, when the surface is a plane, and curved when the surface is cylindrical. Thus the surface on the top of a phaeton box (*fig. 47*) being a plane, it projects according to line  $a' b'$ ; and as the surface limiting the front pillars is cylindrical, it projects according to curve  $l' j' n'$ . From this it follows that the whole line  $a' b', l' j' n'$ , can be considered as the director of the surface which it projects.\*

The principles which we have laid out in this chapter give a general idea of the method of representing bodies by the aid of geometrical figures. This method is not only applied to the surfaces of bodies, but all pieces of woodwork entering into their construction. Every piece taken singly is a body composed of plane or curved surfaces, absolutely like the body as a whole.

As we have not to deal in this treatise either with the construction of the perspective nor with the determination of shades, all that is left to complete this study is to expose in the second part the generation of surfaces suited to every kind of body.

(To be continued.)

## THE ADVENTURES OF THREE JOURS.

BY H. S. WILLIAMS.

### CHAPTER XI.

OUR worthy and talkative doctor proved correct in his prophecy, for when Loring walked forth a well man, Miss Corniel was his betrothed bride. It was his last day in the country, as Gloner had come out with a buggy to take him in the city next morning; and, strange enough, the former gentleman had found it either the safest or most convenient route to come by way of Mr. Linden's, where he had stopped for dinner, and had persuaded Miss Lucy to accompany him to his destination. What a delightful afternoon that was! How they all enjoyed it; and what a delightful walk they had through the old wood, that now presented all the glorious beauty of an autumnal

\* We notice at the place of point  $n'$  on the vertical plan (*fig. 47*) two lines, of which one joins at  $s'$  with  $l' j' n'$ , and the other terminates at  $p'$ . These two lines represent the inside of the bracket, front pillar, and the foot-board, where some wood is left outstanding for the attaching of the irons. This little irregularity is made to alleviate the outside of body at point  $n', n'$ .



landscape, and back by the broad cotton fields, where the dusky laborers were gathering the fleecy staple, white as driven snow, and packing it in huge baskets, which, when the sun went down, they would raise on their heads, and march in single file to the gin-house, singing and keeping time to their steady marching.

It is the happiest period of our existence, when we have both youth and love to gild the sky o'erhead with roseate hues, and unfold the book of destiny at its brightest pages. Then life seems all one summer holiday, without a thought or care to ruffle the temper, or sadden the heart. And thus they felt, as they walked slowly homeward, with the shadows of twilight gathering about them, yet so dimly, for the full moon was already looming up in the east, as to be scarcely perceptible. But home was reached, the walk ended, a pleasant cup of tea was partaken of, and then followed a most delightful evening.

"As the horses are well cared for, and it would be a good deal of trouble to have them brought out," said Gloner, as the clock struck the hour of nine, "I propose that we walk home, Miss Lucy; it is such a lovely night. And I am confident that Miss Corniel and Mr. Loring will accompany us part of the way. What say you all? 'It is a heavenly night, and the soft air invites us,' as the poet lover told the haughty Pauline."

Of course all agreed to it, and they were off. It was a noisy enough party, as they walked slowly down the dusty road. All were in the best of spirits, and all had much to say; but when Miss Corniel and Mr. Loring turned back, a strange silence took possession of Gloner and his companion. The full moon made it almost as light as day; and from the tops of the Cherokee rose that bordered the road, the mocking bird would break out in sweetest melody for a moment, and then fold its wings for sleep again. Gloner was the first to break the silence. But why repeat the words, they would appear so plain and common place here? but they were so eloquent and musical as he pronounced them. It was the old, old story, repeated daily for centuries past; yet to the speaker and listener, if they truly love, ever new and beautiful. Lucy said nothing; but the clear moonlight falling full upon her sweet, upturned face, spoke all the heart felt, and Gloner saw the answer, the realization of his dearest hopes as he imprinted his first kiss upon her fair brow.

"Where is Mr. Linden?" he asked of a servant as they entered the house.

"In the library," was the reply.

"Tell him, if convenient, I should like to see him for a few minutes."

"Master requests you to walk in the library," said the servant when he returned.

"Wait for me in the parlor," said Gloner, as he followed the servant.

Mr. Linden was seated at a table on which were scattered various papers, which he had apparently been engaged in examining.

"I am sorry to disturb you," said Gloner, as he took the proffered seat; "but I wished to see you for a few minutes on an affair of great importance to myself, and of some interest to others."

"I am always ready, Mr. Gloner, to attend to the wishes of my guests. Pray proceed; I am entirely at your service."

"It is, perhaps, known to you," resumed Gloner slow-

ly, "that I have visited your daughter for some time past as a suitor for her hand; and to-night I have been made happy by the knowledge that I am not indifferent to her. In fact, that the affection I feel for her is returned, but with the distinct assertion on her part, that with you rests the final result. I have come, therefore, to ask for your daughter's hand."

"This is very sudden, and, I do assure you, rather unexpected," replied Mr. Linden, after a moment's pause. "Lucy did say something last summer about your being a suitor for her hand; but I did not pay much attention to it then, nor have I thought much about it since; therefore, it has not had that serious attention that so important a subject demands."

"No one knows better than myself," returned Gloner, "that it requires your most serious thought; therefore, I do not ask a definite answer now. I wish, however, to present my case, when you can take your own time for consideration. I am well aware that, as far as my past history is concerned, my family, and my real condition in life, you are totally ignorant; and it is no more than right that I should enlighten you on those subjects. Of my parents I know but little, only that they were of the highest respectability; for they both died when I was but ten years of age. As I was an only child, I was placed in the charge of a bachelor uncle, together with what property my parents left, who, having no home but his hotel, grumbled a little about the trouble of a ten year old boy, and got rid of it by sending me off to a neighboring village to boarding school. At seventeen I was taken away and sent to the city, for the purpose of entering a lawyer's office, and making the law my profession. Not liking the dry details of Blackstone and Coke upon Lyttleton by itself, and taking quite a fancy to carriage-making, as well as having a natural taste for the use of tools, I went to work at body-making in the day time, and studied law at night. It was six months afterward ere my uncle found out what I was doing; and, although he protested against it most vehemently, yet, as I usually had my own way about every thing, I finally gained his consent to go ahead.

"When I reached the age of twenty-one, I was a good mechanic, and knew enough about law to pass a rigid examination, and get a diploma to practice. My uncle then informed me that the little property coming to me was not to be turned over to my account until my twenty-fifth birthday, unless I married before that time; and as I felt no inclination to give up my bachelorhood, and wishing to see the world, I packed my books and clothes in one trunk, my tools in another, and so started out as a carriage-maker. Since which time I have seen about all the country worth seeing. It was several months after I was twenty-five ere my uncle learned my address; but when he did, he wrote me that my property, originally a trifle over ten thousand dollars, had, by judicious investment, increased to over fifteen thousand, and was awaiting my orders in a city bank. As I had now arrived at a sober age, and as I rather liked my mode of living, I concluded to wait until I married before I touched it, and to win my bride without her knowing that I was worth more than my daily wages. I have succeeded far better than I ever dared to hope; and now I only want your sanction to my choice. Here is my uncle's letter, to which I referred."

He had risen as he was speaking, and now stood lean-



ing against the mantlepice, looking down with his large luminous eyes in the face of his host; while the animation and the glow that the subject imparted to his countenance, together with his deep, rich voice—now very low, but beautifully distinct—caused Mr. Linden to think for a moment that he had heretofore underrated his good looks. Rising and pacing the room two or three times, Mr. Linden took up a corresponding position at the opposite end of the mantlepice, and said: "Your past history, and your position in the world, are perfectly satisfactory. As far as your property is concerned, I can truly say it does not influence me in the least, for I was almost penniless myself when I married, and I long since determined to let all suitors for my daughter's hand woo upon equal footing, so they were gentlemen. She is an only child, and I have enough to insure her comfort and independence; and all I ask in her married relations is to see her happy. If you have my consent, what do you propose to do after your marriage?"

"First, I shall want to visit my native State, get my property, and then, if agreeable, return here and invest it in enlarging and improving your place."

"Where is Lucy?"

"I left her in the parlor when I came here."

"Excuse me for a minute or two," and he left the room. Entering the parlor, he found Lucy seated by an open window. "Come here, child," he said, taking a seat in the center of the room; "I wish to speak with you."

Lucy advanced, threw her arms about her father's neck, and gently kissing him, she seated herself on a stool, and resting her arms on his knee, looked up in his face, and announced her readiness to listen.

"You must have forgotten," he said, "that it is time for our yearly trip to New Orleans and Mobile; in fact, we are nearly a month later than usual. When will you be ready to go?"

"Oh, papa!" she replied, "I was in hopes it was you who had forgotten it. I do not wish to go at all. I am so pleasantly situated here; and then I am so well, too. Why, I have not been sick all summer."

"Well, I believe your health is improving somewhat. What is the cause of it?"

"The same cause," she replied, in the most innocent and bewitching way imaginable, "that restored mama's health; for I've heard you say that when you first became acquainted with her, her health was very bad, but in less than a year she was well," and again she kissed him.

"Can it be, then, that you have allowed yourself to love that homely looking fellow—a man without a dollar, perhaps; and a mechanic, too?"

"He is a gentleman, papa," she replied, "and he has a true heart. All that I ask in a husband, if he only loves me."

"Well, well; perhaps you are right, pet. So, keep patient for a few minutes, and we'll see about it."

Returning to the library, he merely said, "She loves you, sir. Make her as good a husband, as she will a wife, and I will be satisfied. She is in the parlor."

In a moment Gloner was by her side, and — Pshaw! why attempt to describe a scene that is indescribable.

The next morning our two friends returned to Montgomery, and for a week Loring was the lion of the city; for the story of his duel, with a thousand little side em-

bellishments, had been freely circulated in every household, and every night he had more invitations to go out than he could possibly accept, while half the young men of the city called on him with their congratulations. In fact, the successful hero of a duel in Alabama at the times of which we write was a noted character among all classes of society.

On the following Sunday they both visited the country, and when they returned the happy days had been set—or rather *day*, for both Miss Lucy and Miss Kate had decided on marrying at the same time.

"I congratulate you most heartily," exclaimed Margrave, when told of it; "most heartily. And as my friend the poet says, at the grand *denouement* of the comedy, 'May you both be happy.' I guess I'll have to stir round, though. I'm about over that Memphis disappointment now, and I can never stand it to be left alone."

Our story is nearly done. Gloner and Loring were both married at Miss Corniel's, took dinner at Mr. Linden's, and then, accompanied by a merry, social party, they all proceeded to Montgomery, where they took the magnificent steamer "Southern Republic," for Mobile. Mr. Linden accompanied them as far as New Orleans, where he stopped, while they pursued their journey up the Mississippi, thence up the Ohio to Cincinnati. There they separated, Loring going to his home, for his parents were still living; while Gloner took a brief visit to his native village, found his uncle, received his property, and then all proceeded to New York.

Contrary to all expectations, the cold northern winter just suited Lucy's constitution; and she carried the best proof of good health—a delicate rose tint on either cheek.

Returning to Cincinnati, after a couple of weeks in the great metropolis, they met Loring and his bride by appointment, when all returned to Alabama together. As for Gloner's bachelor uncle, he came down to visit his nephew in the spring; and, although he only intended to stay until the middle of May, for fear of the "confounded hot summer," yet he tarried until November, then going North, he converted all his property into cash, and returning, invested it in an adjoining plantation.

As for Margrave, in self-defense for his loneliness, he pitched in and worked hard all winter, made money rapidly, so that when spring opened, he went to a flourishing inland town some twenty miles from Montgomery, and, with some little assistance from Loring and Gloner, he started a respectable carriage factory, where he still reigns, but *alone*; yet never so happy as when he has a new jour up in one corner of his bachelor quarters, telling how *near* he came to marrying that Memphis girl, and giving the history of his subsequent tramp through the swamps of Mississippi.

Gloner and Loring are still rival planters, but most friendly ones; and although it is hard to tell which excels, yet it is well known that their respective plantations are the best managed, and raise the best crops in the whole country.

And now, kind reader, ye who have followed us thus far in our simple story, seated by your own fireside, surrounded by a happy circle of loved ones, or in your dreary quarters of single-blessedness,

"Farewell! a word that must be and hath been—  
A sound that makes us linger—yet farewell!"

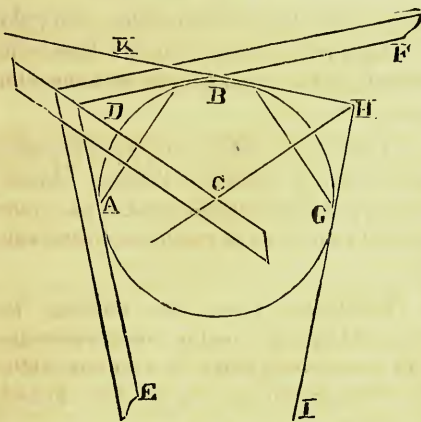
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GEOMETRICAL EXERCISE.

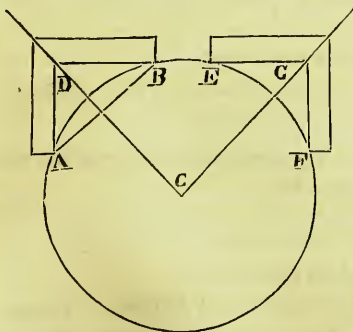
BY P. B. J.

HAVING a circle or segment of a circle, to find its center by means of a square and miter-square, without the use of the compass.



Let A B G, be any circle or part of a circle to which apply your square so that the inside edge of the blade and stock shall touch it as at A and B, shown in the figure; then take your miter-square and place it at the angle D of your square, and draw a line along its edge, as

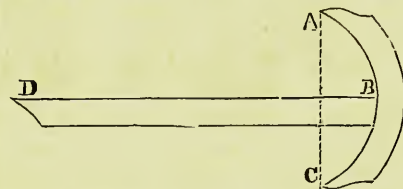
D C in the circle. Now the line D C must pass through the center of the circle, for it bisects its chord. Now if we move the square into any other position as shown at K H I, and draw the line H C, with the miter-square, in the same manner as before, that line will also pass through the center of the circle as before stated, and consequently the intersection of these lines D C and H C at C will be the center required. This problem will be found not only of great use to body-makers for finding the center of circles in round-cornered bodies and seats, when the original center is obliterated or cut off, but likewise to the wheel-maker it will be found an easy process for truly centering their hubs, as well as to the blacksmith's advantage in centering for his king bolt. It may be here observed by the workman, that when the circle is large it will be difficult to find a square or miter-bevel long enough, as in the figure here shown. The square must be at least equal to the radius of the circle, and the miter-bevel considerably more. I will now, therefore, show how that objection may be dismissed, and the operation performed with as much accuracy when the square is not equal in length to the radius, or when the miter-bevel is not long enough to reach the center of the circle, but it will be necessary to observe that the stock and blade of the square must be equal in length to each other, or D F must be equal to D E, and although D C may not be long enough to reach the center, it will tend to it, and the line drawn by it, may be continued by means of a straight edge.



Now in order to show how this is done, let A B E F be the circle, and A D B the square. Having the blade A D equal in length to the stock B D, apply it, as shown in the figure, so that the ends meet the circle at the points A and B, and with a miter-square draw a line in the direction D C, which will tend to

the center of the circle. In the same manner apply the square to any other part of the circle, as at E F, and draw G C, by the help of a miter-square, then the intersection of these lines D C and J C, is the center required, for, though the blades of the square do not form a tangent to the circle, as the line D C bisects the angle A D B—it bisects the line A B, which is a chord to the circle, and passes through the center.

Hence a useful article may be constructed applicable to the center of all circular work, but which, I think, is not in general use, though some years ago I constructed one for my own benefit, and it was much approved of by several of my fellow-workmen, who used it at the time. I shall therefore describe its construction, which is very simple, being but a T-square, whose stock is a portion of a circle. Let A B C be the stock made of one piece of hard wood, well seasoned, the extremities of which at



A and C should have a small piece of hardened steel affixed, so that it should not be subject to wear by use, into which stock, the blade

B D is tenoned, so that A B is exactly equal to B C, and at the same time square to the cord A C.

It is evident, from what has been advanced in the last problem, that if this instrument is applied to any circle, so that the parts A and C touch, the blade B D will pass through the center of the circle, and by two applications the center will be found. It will be seen by the workman that this instrument is especially adapted to the centering of hubs or small circles. If necessary where stocks shall be required of different curvatures, and blades of different lengths, he might have some two or three. I used to call this tool my *centering square*. In conclusion, permit me to observe that if I have described a tool that is now in general use I must crave your pardon for occupying your pages unnecessarily, and the workman for loss of time, in reading that which they are already acquainted with. Before closing allow me to remark, that in my future communications (as heretofore) I shall aim at simplicity and perspicuity, which ought ever to be the endeavor of him who writes for the instruction of others.

OUR GRECIAN CARRIAGE MUSEUM.

THE accompanying illustration is taken from an ancient Grecian vase, and is supposed to represent Mars as just mounting his car for a warlike enterprise, attended by armed soldiers. In this instance the god of war prefers to serve as charioteer, leaving his warriors to serve as body-guards.\*

The *Diphros*, or Grecian war chariot, figures conspicuously in the works of Homer, as we have elsewhere shown. In the engraving representing a *Quadriga*, we have one of the best specimens of Grecian art. The *antugen*, or top rail, which served both the purpose of handles and finish, were sometimes made of metal, and sometimes of wood, but in all cases were left open, as we see in the

\* Among the ancients the warrior ranked above the charioteer, this last being less dignified, the warriors directing where to drive. Eustatius tells us that when the soldier came in close encounter, he often alighted from his chariot and fought with the enemy on foot.





example under consideration. The wheel of singular design would appear to be metal of some kind. It certainly would require too much labor to make one such of wood alone, were it practicable.

Mars, who is supposed to be represented as the hero of the picture, is said by Homer to have been the son of Jupiter and Juno; but by Ovid, the son of Juno, without a father—the goddess Flora having presented her with a flower gathered in the Olenian fields, by the touch of which she became enciente. The old Aescan poet calls him the “man-slayer, gore-stained, stormer of walls,” who, mounted in a chariot, “over the yoke and the reins of the steeds, stretched himself forward with his brazen spear, eager to take away life,” and says that on a certain occasion he roared “as loud as nine or ten thousand men roar in war.” At the siege of Troy he appears to have “gone back on his mother,” who befriended the Greeks, and taken the side of the Trojans, with Venus. For further details the reader must consult the Iliad.

## Pen Illustrations of the Drafts.

### C AND ELLIPTIC SPRING CLARENCE.

*Frontispiece to Volume Eleven.*

THIS elegant and original design for a fashionable style of Clarence is the work of our own artist. For a change, instead of a portrait of some American coach-maker, we have selected this vehicle as the frontispiece to the volume, which should be placed opposite the title-page in binding. The attention of the craft is especially directed to the following points of novelty in the drawing: The sweep in the front pillar, at the belt; the back sweep of the boot, and the bracings of the C-spring back.

The width of the body at the center, measured from outside to outside, should be about four feet six inches; across at the front pillars, three feet seven inches; the circular front, measured in the line of the door, one foot ten inches; across the boot, two feet eight inches; turn

under at the pillars, five inches; back quarter at the belt-rail, two feet one inch; width of door, two feet one inch, and width of the seat, one foot six inches.

*Painting.*—Body dark-green, moldings striped black with one fine line gold; carriage part, black, with one broad line medium shade green, split with fine line gold.

*Trimming.*—Half and half morocco, with satin or cotoline linings. Heavy beveled glass in the windows and doors will add much to the richness of the vehicle.

Workman's price for building the body, \$115; for making under-carriage, \$22; for ironing, \$95; for painting, \$90; for trimming, \$62. Manufacturers' charges for finished Clarence, \$1,800 @ \$2,000.

NEW YORK CHARGES FOR REPAIRING.—As far as applicable to the Clarence, the charges for the parts given in describing the Landau (plate XLI., page 168) will answer for this also, so that we deem it unnecessary to repeat them here.

### C-SPRING CALECHÉ.

*Illustrated on Plate XLV.*

WE give our readers this month another original design for a light elliptic and C-spring Caleche, suitable for summer exercise in the public parks or thoroughfares. Width of the body between the arm-rails, 50 inches; width of the boot, 32 inches. *Wheels.*—3 feet 4 inches and 4 feet 2 inches high; hubs, 4½ by 7 inches; spokes, 1½ inches; rims, 1½ inches deep, steel tires, ⅝ by 1 inch. *Springs.*—Front, 3 feet long, and about 10½ inches apart; width of leaves, 1¾ inches; the head leaves No. 3 steel, the other plates No. 4. The hind elliptic should be a little less apart and about two inches shorter. In the selection of the C-springs the manufacturer must exercise his own judgment.

*Painting.*—Body, English patent black; Carriage part, dark-blue, striped with black broad stripe, edged with two narrow ones in white.

*Trimnings.*—Blue-black broadcloth.

Workman's price for making the body, \$75. Manufacturer's charges for the carriage, \$1,200.

*Charges for Repairs.*—The same as those given for the Caleche, on plate XXI., page 88.

### NEW YORK BUGGY.

*Illustrated on Plate XLVI.*

THIS original design has some novel features to recommend it to our readers. The molding under the seat-riser



should be a little raised, and the back corners of both the body and seat slightly rounded. Width of the seat, 16 inches; length, 36 inches. Wheels, 3 feet 11 inches, and 4 feet 1 inch; hubs,  $3\frac{1}{4}$  inches; spokes 1 inch; rims,  $1\frac{1}{2}$  inches; tires (steel),  $\frac{3}{16}$  by 1 inch.

Workman's price for building body, \$18; carriage part, \$8; wheels, \$10; shafts, \$3.50; spring-bars, \$3. Manufacturer's price for the buggy complete, \$465.

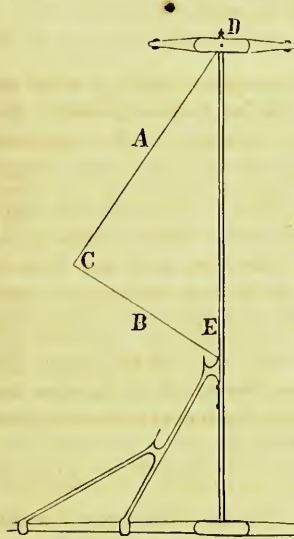
For prices in repairing, see other estimates for the same kind of a buggy in this volume.

## Sparks from the Anvil.

### LOCATION OF WEAR-IRONS.

BY P. B. J.

THE object designed by the following article is to obviate a difficulty very frequently occurring in the construction of cut-under carriages; that is, the striking of the wheel against the stays. Now, in order to remedy a difficulty, it is always necessary, first, to ascertain its cause, and then apply the remedy. The reason we assign in this case is, that generally it is a matter of "guess work" with the blacksmiths where he places the head of his stay upon the perch. We refer the reader to the illustration in order to show how this defect may be remedied:



In the first place obtain half the width of the track, as on line A, measuring to the outside of the rim, and then get half the height of the front wheel, as on line B. Next, take two slats, and fasten them securely, as at C, being certain that they are square at C with each other; place the point D at the centre of the king-bolt, and bring point E, which represents the wheel, to the perch which shows the point on which the wheel will strike, and also the point where the stay-head should be placed. In order that the wheel may not strike the stays, this rule

will also be useful in designating the precise place where the "rub-iron" should be welded in the perch plate. Especially in large cities, on cut-under jobs, it is necessary that a rub-iron should be on the perch to prevent the cutting of the side plates by the wheel. With these brief explanations, I respectfully submit the drawing to the study of the reader, knowing that it will suggest points to be taken into consideration, and the means of remedying evils complained of.

**NEW TIRE.**—Loos & Williams of this city have invented and patented an improved kind of tire, with a flange on the outer edges, to protect the felloe from injury.

## ELLIPTIC SPRINGS.

BY PORTE PENCIL.

IN this age of improvement, when so many *new* things are presented for public consideration, permit me to offer an *old* one in a new dress, which, I think, may be used to great advantage. In discussing the subject, perhaps I may exceed ordinary limits; but I hope to be allowed the privilege of going into detail. It is a singular fact, so far as we know, that the proper application of elliptic springs to carriages and buggies has scarcely ever been investigated. We only know the rules by which we are governed, and practice those which *experience* assures us are correct; but more frequently "guess work" is applied, without duly considering the amount of work which each spring is compelled to perform. To illustrate this "guess work" mode, suppose we have a top-buggy to iron off. The body has a seat, the center of which is six inches back of the center of the sill; many carriage-makers, not taking into consideration where the center of the seat is located, would take two  $2\frac{1}{4}$  in. 4-plate springs, or two  $1\frac{1}{2}$  in. 3-plate, committing a serious error at the start; because when the buggy receives the weight, in the common parlance of the carriage-maker, the back spring assumes a "squatting" attitude, the front remaining in nearly the same position as it did before it received its load; so that, when in use, the back spring has nearly all the work to perform, the front one refusing, in combination with the back one, to act. The back spring becomes weaker and more useless each time the vehicle is used, complaint being made by the customer that his back spring is "too weak," or good for nothing, whereby the carriage-maker incurs the useless and perplexing expense of a new spring, who at once condemns the manufacturer of the springs, when, at the same time, the fault lays entirely with himself, owing to his ignorance of the true application of the springs to the vehicle.

Practical experience has taught us that the position of the seat *must* be taken into consideration. Where we find a buggy seat the center of which is back of the center of the body, we invariably make *one plate difference* in the springs. There is scarcely a modern draft made with the seat less than six inches back of the center of the body, and in many cases we find the front of the seat on a line with the center of the body, consequently nearly all the weight is upon the back spring.

Again, how often do we see passing us upon the streets rockaways and top-buggies (owing to the "guess work" plan) having the appearance in front of "sky scrapers," or the back spring too weak, or, the *true reason*, the *front spring too stiff* for the back one. However strange it may seem to common observers, it is practically true that there are very few carriage-makers who understand the proper application of springs to carriages. There is, in the application to springs, the resistance of the air, which, in vulgar apprehension, passes for nothing, that comes to be an impediment to the motion of the carriage or buggy, as well as an additional weight upon the back spring, and may, in some cases, absorb five parts in six of the whole power or weight. Let it be remembered, at the same time, that the aerial resistance rises into consequence solely because it has a bearing upon these points.

Let us now estimate the weight as well as the retarding effect produced by this resistance of the air during



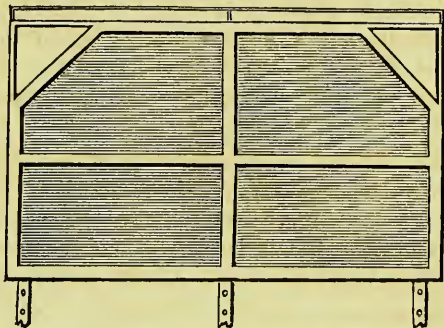
high winds. The resistance is such that means should be taken by the practical coach-maker to lessen it, where practicable, by making the front of a round or hemispherical shape, similar to the Clarence Coach. Let us suppose for illustration that there are two vehicles, each of equal weight. The one has a flat surface in front two feet six inches high, and three feet wide, having a front of fifteen square feet, which in reference to the pressure of the air is reduced to seven and a half feet by giving it a rounded form. The other is three and a half feet high, and four and a half feet wide, presenting a front of thirty square feet, but reduced to fifteen by its rounded form.

Now, still air is found by experiment to press with a force of sixteen grains upon a body presenting a front of one foot square, and moving at the rate of one foot in a second, and the pressure increases as the square of the velocity. Hence our coach when moving at the rate of four miles an hour, in a still atmosphere, would encounter a resistance from the pressure of the air of  $1\frac{1}{8}$  lbs. At eight miles an hour the resistance would be  $4\frac{1}{2}$  lbs.; at twelve miles, 10 lbs.; at sixteen miles, 15 lbs.; at twenty miles,  $28\frac{1}{2}$  lbs. The coach presenting only half the surface in front would experience only half the resistance or additional weight. It is evident from this reasoning that upon the inside of a close top, showing a surface of at least fifteen square feet, and moving at the rate of say sixteen miles an hour, and more especially if the seat is back of the center of body, it would encounter a resistance or additional weight of fifteen pounds, which is added to the weight already upon the back spring.

To make an allowance for any thing of this kind, we set our bodies half an inch higher behind than in front, and adopting and following up the plans which experience has taught us of making calculations where the center of the seat comes in conjunction with the shape of the body, we are saved the unsightly and mortifying appearance of "sky scraper" vehicles upon our streets.

#### DASH-BOARD FOR BUGGIES.

In connection with this article we present our readers with an engraving of a dash-board for buggies after a new



pattern. It appears clumsy in the picture, but the frame being made of oval iron, when covered with patent leather, produces a very strong and handsome article for light vehicles.

**SPRING MANUFACTORIES.**—Our readers will find the advertising cards of four manufactories in Bridgeport, Conn., where carriage springs are made of the best material and workmanship. We have always found them a superior article, perfectly reliable, and suited for first-class work.

#### REVARNISHING ENGLISH VARNISH.

In my present paper I will say a few words to you on the touching up and revarnishing of old work, and also of new work that has stood in the repository until it requires a coat of varnish to revive its brilliancy. You say that painters in America find a great deal of trouble in revarnishing English varnish that is not over a year old. So would the English painters, were it not for a simple but effective remedy which they employ, and of which I shall speak later in my letter.

In England, as is the case in America, there are many owners of carriages, especially livery men, who only want their vehicles touched up and given a coat of varnish, not desiring to go to any further expense than this would involve. Now, if a job finished with English varnish is simply rubbed and touched up, there are many serious difficulties which will assail the painter in giving it a coat of finishing varnish. It is not apt to "lay" well. If the previous coat of English varnish has not been on for over a year, the fresh coat will probably *refuse utterly* to "lay." In any case, there are many difficulties to overcome in order to make a coat clean and brilliant, to keep it from "enameling," and to keep it from striking in dead. Where it "strikes in," it looks dirty, and after it has run a week or two, it will often return to about the same state in which it was sent into the paint shop. These are a few of the difficulties which a painter has to look out for when revarnishing English varnish. And now, Mr. Editor, I will speak of the way the English painters manage to avoid these troubles, hoping that some of your painters in America will try it, and if it works well with them I trust they will not discard it as unworthy because of its being a London idea.

When we receive a livery or other carriage with the order to give one coat of varnish, we do it in this way. We rub it down well with pumice, cleanse, let dry, and dust off. We then mix some "Japan gold size" and turpentine together, say about one part of "gold size" to three parts of turpentine, or just sufficient "gold size" to leave a thin film upon the panel when dry. It takes only a few moments to apply and dry this coat, and this time is saved in "touching up," for the painter can see any bare edges or scratches on the job, and moreover, the color will dry solid over the parts "touched up," and will not work off when varnished. The coat of turpentine and "gold size," or "cider," as it may be called, also enters into the old varnish, and prevents the fresh coat from striking in or enameling, and it insures that the job will dry all over and with brilliancy, and that it will remain so when the job is run out into the sun.

Some painters might say that this "intercoat" would aid in cracking the varnish, but I can say from a long experience that I have never known it to do so. The contrary seems true, and I think this "cider" is a good preventive for cracking. I have often seen a job so done stand a year, and come in quite bright. New work can be done in the same way, that is, work that has stood in the repository until it has lost its luster, and the job will be *very much more durable* than if a coat of hard-drying varnish were given and then a finishing coat of English or American Wearing Body. The "gold size" is elastic, and corresponds with the coats of varnish upon each side. But, put a coat of hard-drying varnish between two coats of English, or indeed any two coats of elastic finishing varnishes, and the job is *sure to crack*.



I have always found this method to save time and insure a good job, and it can be used with equal success on either body or carriage parts. I have taken in a brougham in the morning; rubbed it down, given it a coat of "cider" and touched it up before dinner, and finished it in the afternoon.—*London correspondence of the Hub.*

## Trimming Room.

**APOLOGETICAL.**—As our readers will have noticed, we have been compelled during the progress of this volume, to go to press with scanty material for this department. No one but those who have tried the experiment, know under what difficulties publishers labor, who are dependent on the movements of others. Although we had made—as we thought—permanent arrangements for monthly contributions to this department from practical workmen, at the commencement of the volume, when they were called upon matter was not ready, notwithstanding we had offered liberal payment for such. The fact is, most trimmers are either too modest to appear before the public, or else unable to put their practical knowledge in proper shape for the reading community. We hope, however, to have better success in the future.

## Editor's Work-bench.

### CARRIAGES AT AUCTION.

ONE of the largest sales of carriages we have known made at auction took place in this city on the sixth and seventh days of April, being the extensive stock in the Repository of Messrs. James B. Cone & Co., on Broadway. Some of the carriages in this collection—amounting to about \$20,000—were very fine, and perhaps ought to have brought better prices, but much of it was injured by moth and time, and sold for all it was worth. The second-hand carriages may be said to have sold extremely well. Upon the whole, we think the retiring house has reason to be satisfied with the sales. We fear, however, that so large a sale at this particular season of the year will prove injurious to the interests of other houses in the trade, which we suppose must be accepted as one of the misfortunes of business. Having attended the sale, we are able to give a report showing the prices obtained for some of the new carriages.

No-top elliptic spring *Road Wagon*, leather trimmed, built by L. Adams, shafts only, sold to Mr. Wright for \$145; turn-out seat, shifting top *Buggy*, trimmed blue cloth, seat two or four persons, by Bunce, New Haven, sold for \$190; light *Coupe Rockaway*, on platform springs, panel back, curtain quarters, movable winter front and summer back, adapted for one or two horses, built by L. Adams, worth \$700, sold for \$440 to Rockwell; no-top elliptic spring *Road Wagon*, square box, blue cloth, worth \$275, sold for \$155 to Scofield; no-top *Duncan Dog Cart*, on

platform springs, lined blue cloth, pole and shafts, by L. Adams, worth \$600, sold for \$370; very light, six-seat *Victoria*, on platform springs, trimmed green morocco, pole and shafts, by L. Adams, worth \$800, sold for \$540; elegant *Coupe Rockaway*, extra light, "of an entire new pattern," on platform springs, book steps, oil-cup axles, movable winter front and summer backs, drop window, beautifully trimmed, Bessemer steel axles and tires, pole and shafts, princes metal, worth \$1,000, sold for \$815 to D. Evans; circular front *Coupe*, fashionable, well trimmed in brown satin, mirror, child's seat, "all improvements," L. Adams, worth \$1,300, sold for \$890 to Frothingham; *Dogcart*, on four springs, morocco trimmings, lamps, pat. axles, pole and shafts, L. Adams, worth \$600, sold for \$555 to Drake; *Park Phaeton*, on platform springs, seats four persons, shifting top and seats, morocco and cloth, J. B. Brewster, worth \$1,100, sold for \$780 to Milbank; six-seat *Rockaway*, improved pattern, lined in crimson satin, quilted roof, glass quarters and shifting front, book steps, steel axles, a fine family carriage, worth \$1,500, sold for \$1,050 to Munson; three-quarter *Clarence*, hung on C-springs, morocco, serge and broad lace, mirrors, speaking tube, beveled glass, book steps, Bessemer steel axles, by J. B. Brewster, worth \$2,100, sold for \$1,505; McAllister *Victoria*, with doors, fenders, low driver's seat, very light, by L. Adams, worth \$900, sold for \$760 to Brownell; elegant low dickey seat *Coach*, curtain quarters, by L. Adams, worth \$1,300, for \$890 to Frothingham; *Dogcart Phaeton*, on four springs, morocco, pat. axles, pole and shafts, by L. Adams, worth \$600, sold for \$550 to Drake; light six-seat passenger *Rogers Phaeton*, blue cloth, storm-boot, lamps, &c., by L. Adams, worth \$850, sold for \$660 to Milbank; light half-top *Park Phaeton*, on two springs, blue cloth, shifting tops, pole and shafts, by L. Adams, worth \$750, sold for \$390 to Russell; half-top *Victoria*, on platform springs, folding child's seat, wings, blue silk, light, pole and shafts, worth \$1,000, sold for \$550 to J. B. Williams; C-spring *Close Coach*, glass panels, shifting front, Metropolitan boot, crimson satin, by L. Adams, worth \$2,000, sold for \$1,200 to McKim; *Britzka*, on combination springs, storm boot, wine colored morocco and half cloth, by L. Adams, worth \$1,200, sold for \$800 to Pitt; circular front *Coupe*, child's seat, mirror, speaking tube, brown satin, light, for one horse, pole and shafts, by L. Adams, worth \$1,400, sold for \$975 to Mott; elegant loop *Landau*, "Salisbury boot," on C-springs, book steps, rich brown satin and broad lace, heavy plate beveled glass, worth \$1,800, sold for \$1,620 to Williamson; six-seat *Park Phaeton*, drab, by L. Adams, worth \$900, sold for \$765 to Barton; London *Clarence*, full size, hung on C-springs, book steps, J. B. Brewster, worth \$2,000, sold for \$1,450 to Pratt; deep-side dogcart *Pheaton*, on perch, by L. Adams, worth \$550, sold for \$340 to Valentine; *Landau*, morocco and satin, book



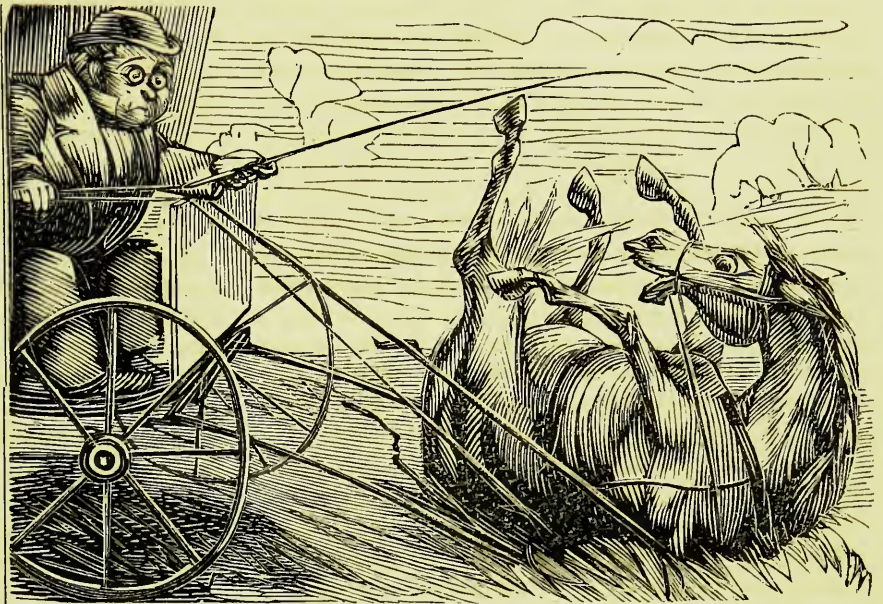
steps, steel axles and tires, by J. B. Brewster, worth \$2,000, sold for \$1,410 to Valentine; duplicate of the Bonner wagon described on page 175, worth \$335, sold for \$300 to Bellows; *Pony Phaeton*, with shafts only, morocco, worth \$350, sold for \$175 to Hobart; shifting-top *Buggy*, roll-up sides, blue cloth, worth \$450, sold for \$280 to J. Munn; *Sociable*, six seats, tan silk coteline, low dickey seat, by L. Adams, worth \$1,050, sold for \$500 to Barton; light extension-top *Cabriolet*, on platform springs, blue cloth, pole and shafts, by L. Adams, worth \$700, sold for \$500 to Tyson; glass quarter *Coach*, low dickey seat, quadrant lights, tan silk coteline, by L. Adams, worth \$1,300, sold for \$875 to Schultz; half-top *Park Phaeton*, grey cassimere, seats and top to shift, by J. B. Brewster, worth \$850, sold for \$650 to Wright; *C-spring Brett*, blue silk, pat. axles and book steps, by L. Adams, worth \$850, sold for \$900 to Baxter; *Dog-cart Phaeton*, on platform springs, pole and shafts, by L. Adams, worth \$600, sold for \$400 to Ely; *Basket Pony Phaeton*, with rumble and umbrella, worth \$300, sold for \$215 to Preble; shifting-top *Buggy*, roll-up sides, in drab cassimere, by L. Adams, worth \$450, sold for \$227.50 to Bates; *Six-Passenger Rockaway*, blue cloth, curtain quarters, by L. Adams, worth \$900, sold for \$565 to R. R. Barto; *Shifting-top Buggy*, Lane's pat. springs, cloth lining, worth \$400, sold for \$230 to C. S. Sherman; duplicate of the last sold for \$260 to Honker; half-top *Phaeton*, on four springs, drab cloth, by L. Adams, worth \$700, sold for \$400 to Preble; square-box road *Wagon*, cloth, by L. Adams, worth \$325, sold for \$165 to Bouton; six-passenger *Depot Wagon*, ribbed body, leather, by L. Adams, worth \$600, sold for \$320 to Banks; half-top *Phaeton*, two springs and perch, brown cloth, pole and shafts, worth \$500, sold for \$205 to Champlin; top *Pony Phaeton*, with rumble, blue cloth, worth \$450, sold for \$200 to Morgan; shifting top *Buggy*, on Lane's patent springs, blue cloth, by L. Adams, worth \$460, sold for \$260 to Perry; shifting-top *Buggy*, brown, by J. B. Brewster, worth \$500, sold for \$375 to Bates; dog-cart *Phaeton*, four springs, blue cloth, pole and shafts, by L. Adams, worth \$675, sold for \$320 to Gibson; half-top *Under Phaeton*, three springs, cloth, pole and shafts, worth \$475, sold for \$250 to Townsend; *Britzka*, platform springs, blue silk reps, worth \$1,000, sold for \$530 to Preble; six-seat *Westchester Rockaway*, cloth, curtain quarters, worth \$1,100, sold for \$615 to Packer; gentleman's top *Buggy*, by L. Adams, worth \$475, sold for \$315 to Preble; *Cabriolet*, on elliptic and platform springs, worth \$800, sold for \$495 to Lord & Taylor; *Landulet*, on C-springs, Metropolitan boot, brown cloth, silver mounted, J. B. Brewster, worth \$1,600, sold for \$1,100 to Woodward; light *Britzka*, on platform springs, brown silk coteline and lace, book steps and storm boot, by L. Adams, worth \$900, sold for \$825 to Woodward; *Dog-*

*cart*, drab, pole and shafts, worth \$600, sold for \$295 to Brooks Brothers; *Landau*, combination springs, brown satin, book step, oil-cup axles, by J. B. Brewster, worth \$2,150, sold for \$1,505 to Preble; three-quarter *Clarence*, combination springs, drab silk serge, beveled plate glass, booksteps, oil-cup axles, by J. B. Brewster, worth \$2,000, sold for \$1,500 to Bernheimer; eight-spring *Landau*, hung on double C or suspension springs, morocco and cloth, "the best ironed carriage in the city," by J. B. Brewster, worth \$3,000, sold for \$1,940 to Alden; *Circular front Coupe*, extra light, for one horse, blue morocco and satin, quilted roof, beveled glass, mahogany frames, gold mountings, pole and shafts, "the handsomest Coupe in this city," built to order for a man going to Europe, worth \$1,600, sold for \$1,090 to Harrison; *Park Phaeton*, platform springs, morocco and cloth, shifting top and seats, by J. B. Brewster, worth \$1,100, sold for \$690 to Faile; dickey-seat C-spring *Victoria*, rich blue satin, fenders, worth \$1,600, sold for \$970 to Woodward; *Four-in-hand Drag*, rumble, concealed steps to driving seat, "magnificent carriage for Park," worth \$2,500, sold for \$1,025 to Jim. Fiske; *McAllister Victoria*, for six persons, silk, double fenders and doors in the sides, by L. Adams, worth \$1,000, sold for \$790 to Vansant; three-quarter *Clarence*, combination springs, blue satin, gold mountings, beveled plate glass, by J. B. Brewster, worth \$2,100, sold for \$1,350 to Moss; light *Brett*, on combination springs, brown silk and morocco, folding steps, by L. Adams, worth \$1,500, sold for \$1,050 to Heath; *Dog-cart*, two springs, morocco, light enough for the road, by J. B. Brewster, worth \$450, sold for \$355 to Bliss; six-seat *Park Phaeton*, brown cloth, lid to front seat, by L. Adams, worth \$1,175, sold for \$625 to Clapp; summer *Coach*, round body, leather curtain quarters (squabs for winter), brown cloth, by L. Adams, worth \$1,400, sold for \$750 to Woodward; circular-front *Brougham*, platform springs, folding child's seat, sliding lights, dove-colored silk coteline, gold mountings, worth \$1,500, sold for \$1,055 to P. McCue; *Alstyne Coach*, platform springs, blue silk, by Parker, worth \$1,500, sold for \$1,060 to Jennings & Noyes; *Cabriolet*, with child's seat, on platform springs, worth \$1,000, sold for \$625 to Humphrey; half-top *Phaeton*, for four passengers, on four springs, morocco, by Adams & Cone, worth \$750, sold for \$410 to Vansant; *Park Phaeton*, shifting top and seats, four elliptic springs, by J. B. Brewster, worth \$850, sold for \$610 to Hewett; four-passenger shifting-top *Depot Wagon*, for one or two horses, two seats, worth \$750, sold for \$400 to Haight; no-top *Road Wagon*, elliptic springs, by L. Adams, worth \$325, sold for \$165 to Brown; *Wagonette* for six persons, leather, by L. Adams, worth \$750, sold for \$470 to Townsend; no-top *Depot Wagon*, for four passengers, toe board, leather, by L. Adams, worth \$375, sold for \$205 to Scofield; one-horse cut-under *Rockaway*, four passengers, high doors,



leather curtains, pole and shafts, worth \$650, sold for \$375 to Doane; no-top *Road Wagon*, three-quarter seat, brown cloth, by Parker, worth \$300, sold for \$240 to Vansant; *Pony Phaeton*, panel body, by L. Adams, worth \$550, sold for \$310 to French; shifting-top *Buggy*, cloth lined, by Parker, worth \$475, sold for \$300 to Talbot; two *Concord Wagons*, worth \$122 each, sold for \$80 each; *Skeleton Trotting Wagon*, by Lane, of Philadelphia, with his pat. springs, sold for \$85 to Tuthill.

The Wooden Horse, used as a sign by the establishment, previously noticed in this Magazine, which the auctioneer said was "sired by Old Block," estimated worth \$500, sold for \$240 to Bradstreet. Several sets of fine harness went off at very good prices.



*Boggs thinks he will take a turn in the country and is surprised to find his horse the same way inclined.*

### TRADES-UNION DESPOTISM.

MORE than once, as historians of passing events, we have been called upon to record the tyrannical and outrageous transactions of a clique banded together under the name of Trades-Unionists, who, with doggish manners, will neither work themselves, nor let others work—unless on such terms as they dictate. Although frequently brought before the courts, these "roughs" generally manage to escape just punishment through the influence of politicians and the agency of legal shysters. It therefore affords us extreme pleasure to be able to present our readers with the record of a recent case where an individual was brought to grief and mulcted in the sum of twenty dollars, besides entering into sureties of one thousand dollars to keep the peace for one year to come, for an outrage against the rights of another.

The circumstances were these: An Englishman by the name of Phillips, who only arrived in this country about Christmas last, preferring to work rather than starve, took a job at Jacksons' Iron Works, in Fourteenth street, at less than Union prices. Soon afterward he was told by one Owen Clarke, that if he continued work at such wages "he would get a ball through him." Not heeding the threat, on returning home one evening, Phillips and Clarke were both passengers on the same ferry-boat, when the defendant and several other unionists attacked Phillips, by striking him and afterward kicking him from one end of the boat to the other. These facts were proved by two witnesses.

The defendant being placed on the stand said that he

had been at those works since 1857; that a strike had existed in this shop since the 15th of December; he went up to the complainant and told him that he was doing wrong in going to those works and working at a reduction of wages, and that he was taking the bread and butter out of his (defendant's) family's mouths and those of the families of several hundred men; complainant answered that he had a perfect right to do so if he thought well. In cross-examination the witness admitted that he and other men had followed the complainant and others from their work.

Mr. Spencer, who appeared on behalf of the complainant, said that he was anxious to say to the court, that Messrs. Jackson did not wish the defendant to be more punished than was necessary to warn others from repeating this offense. They wished to mention the fact that this man was in all probability acting under an organization. They wished to say also, on their own behalf, that during the season they had increased the wages ten per cent.

Mr. Hummel appeared for the defendant, and the case was decided against him as before mentioned.

### "THE WORLD ON WHEELS."

THIS work, previously announced as in course of preparation, will be published soon, either by the Editor of this Magazine, or probably the Messrs. Appletons, that matter not yet being decided upon. Meanwhile we are taking subscribers names for the work. Please send us your name, the money to be paid when the book is delivered. Literary men who have seen the MS. say it will be an interesting and valuable production.



## VOLUME TWELVE.

OUR readers are reminded that the number for June, which will be ready on our regular publication day, begins a new volume—VOLUME TWELVE—of this Magazine. We trust that our friends and subscribers will be prompt in renewing their subscriptions, and forward a Postal order for the amount without delay. Those who can, will oblige us by organizing clubs, the terms for which, and other necessary information, will be found on the first page of the cover of this number.

## CURRENT PRICES FOR CARRIAGE MATERIALS.

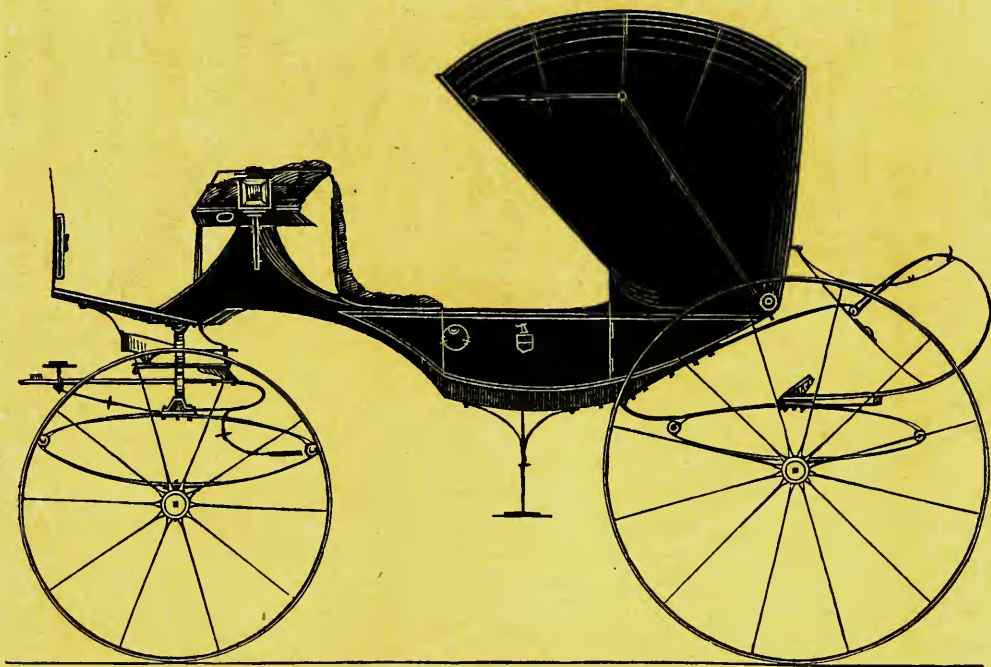
CORRECTED MONTHLY FOR THE NEW YORK COACH-MAKER'S MAGAZINE.

New York, April 20, 1870.

Apron hooks and rings, per gross, \$1 a \$1.50.  
 Axle-clips, according to length, per dozen, 50c. to 80c.  
 Axles, common (loug stock), per lb. 7 c.  
 Axles, plain taper, 1 in. and under, \$5.00; 1½, \$6.00; 1¾, \$7.00; 1½, \$9.00; 1¾, \$10.00.  
 Do. Swelled taper, 1 in. and under, \$6.50; 1½, \$7.00; 1¾, \$8.00; 1½, \$10.00; 1¾, \$13.00.  
 Do. Half pat., 1 in. \$9; 1½, \$10; 1¾, \$12; 1½, \$15.00; 1¾, \$18.00.  
 Do. do. Homogeneous steel, ½ in., \$10.00; ¾, \$10; 1, \$11.00; long drafts, \$2.50 extra.  
 ☞ These are prices for first-class axles. Inferior class sold from \$1 to \$3 less.  
 Bands, plated rim, 3 in., \$1.75; 3 in., \$2; larger sizes proportionate.  
 Do. Mail patent, \$3.00 a \$5.00.  
 Do. galvanized, 3½ in. and under, \$1; larger, \$1 a \$2.  
 Bent poles, each \$1.00 to \$1.50.  
 Do. rims, extra hickory, \$2.75 to \$3.50.  
 Do. seat rails, 50c. each, or \$5.50 per doz.  
 Do. shafts, \$6 to \$9 per bundle of 6 pairs.  
 Bolts, Philadelphia, list. 45 off.  
 Do. T, per 100, \$3 a \$3.50.  
 Bows, per set, light, \$1.00; heavy, \$2.00.  
 Buckles, per grs. ¼ in., \$1; ½, \$1.12; ¾, \$1.25; 1, \$1.75; 1½, \$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 \$3.50; oil-cloth, 40 a 70c.  
 Castings, malleable iron, per lb. 15c.  
 Chapman rubber, \$1.25, doz. pr.  
 Clip-kingbolts, each, 40c., or \$4.50 per dozen.  
 Cloths, body, \$3.50 a \$5; lining, \$2.50 a \$3. (See *Enamelled*.)  
 Cord, seaming, per lb. 35c.; netting, per yard, 8c.  
 Cotelines, per yard, \$4 a \$8.  
 Curtain frames, per dozen, \$1.25 a \$2.50.  
 Do. rollers, each, \$1.50.  
 Damask, German cotton, double width, per piece, \$12 a \$16.  
 Dashes, buggy, \$1.75.  
 Door-handles, stiff, \$1 a \$3; coach drop, per pair, \$3 a \$4.  
 Drugget, felt, \$1.25.  
 Enamelled cloth, muslin, 5-4, 32c.; 6-4, 50c.  
 Enamelled Drills, 45 in., 45c.; 5-4, 40c.  
 Do. Ducks, 50 in., 65c.; 5-4, 60c.; 6-4, 80c.  
 ☞ No quotations for other enamelled goods.  
 Felloe plates, wrought, per lb., all sizes, 15 to 18c.  
 Felloes (Rims), \$1.50 a \$3.  
 Fifth-wheels, wrought, \$1.25 a \$1.50.  
 Fringes, festoon, per piece, \$2; narrow, per yard, 18c.  
 ☞ For a buggy-top two pieces are required, and sometimes three.  
 Do. silk bullion, per yard, 50c. a \$1.  
 Do. worsted bullion, 4 in., 35c.  
 Do. worsted carpet, per yard, 8c. a 15c.  
 Frogs, 50c. a \$1 per pair.  
 Glue, per lb. 25c. a 30c.  
 Hair, picked, per lb. 40c. to 65c.  
 Hubs, light, mortised, \$1.20; unmortised, \$1. Coach, mortised, \$2.  
 Japan, per gal., \$1.75.  
 Knobs, English, \$1.40 a \$1.50 per gross.

Laces, broad, silk, per yard, 60c. a \$1.25; narrow, 10c. to 16c.  
 Do. broad, worsted, per yard, 40c. a 50c.  
 Lamps, coach, \$10 a \$30 per pair.  
 Lazy backs, \$9 per doz.  
 Leather, collar, 23c.; railing do. 20c.; soft dash, No. 1, 14c.; do., No. 2, 10c.; hard dash, 15c.; split do., 15c.; No. 1, top, 23c.; enamelled top, No. 1, 23c., do. No. 2, 20c.; enamelled trimming, 20c.; harness, per lb., 50c.; flap, per foot, 25c.  
 Moss, per bale, 8c. a 15c.  
 Mouldings, plated, per foot, ¼ in. 12c.; ⅜, 13c. a 16c.; ½, lead, door, per piece, 30c.  
 Nails, lining, silver, per paper, 7c.; ivory, per gross, 50c.  
 Name-plates, \$5 for 25, \$8 for 50.  
 Oils, boiled, per gal., \$1.20.  
 Paints. White lead, extra, \$12.00, pure, \$13.00 per 100 lbs.; Eng. pat. black, 20 to 25c.  
 Permanent wood-filling, \$6 per gallon.  
 Poles, \$1.25 a \$2 each,  
 Pole-crabs, silver, \$5 a \$12; tips, \$1.25 a \$1.50.  
 Pole-eyes, (S) No. 1, \$2.25; No. 2, \$2.40; No. 3, \$2.65; No. 4, \$4.50 per pr.  
 Sand-paper, per ream, under Nos. 2½ and under, \$4.50.  
 Screws, gimlet, manufacturer's, 40 per cent. off printed lists.  
 Do. ivory headed, per dozen, 50c. per gross, \$5.50.  
 Scrims (for canvassing), 16c. a 22c.  
 Seats (carriage), \$2 a \$2.75 each.  
 Seat-rails, 75c. per doz.  
 Seat-risers, Linton's Patent, \$2 per pair.  
 Seats, buggy, pieced rails, \$1.75; solid rails, \$2.50.  
 Shafts, \$12 to \$18 per doz.  
 Shaft-jacks (M. S. & S.'s), No. 1, \$2.40; 2, \$2.60; 3, \$3.00.  
 Shaft-jacks, common, \$1 a \$1.35 per pair.  
 Do. tips, extra plated, per pair, 25c. a 50c.  
 Silk, curtain, per yard, \$2 a \$3.50.  
 Slat-irons, wrought, 4 bow, 75c. a 90c.; 5 bow, \$1.00 per set.  
 Slides, ivory, white and black, per doz., \$12; bone, per doz., \$1.50 a \$2.25; No. 18, \$2.75 per doz.  
 Speaking tubes, each, \$10.  
 Spindles, seat, per 100, \$1.50 a \$2.50.  
 Spring-bars, carved, per pair, \$1.75.  
 Springs, black, 13c.; bright, 15c.; English (tempered), 18c.; Swedes (tempered), 26c.; 1½ in., 1c. per lb. extra.  
 If under 34 in., 2c. per lb. additional.  
 ☞ Two springs for a buggy weigh about 23 lbs. If both 4 plate, 34 to 40 lbs.  
 Spokes (Best Elizabethport), buggy, ¾, 1 and 1½ in. 9½c. each; 1½ and 1¾ in. 9c. each; 1¾ 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, lineo, 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, 75a80c.  
 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.





C-SPRING CALECHE. —  $\frac{1}{2}$  IN. SCALE.

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

*Explained on page 182.*





NEW YORK BUGGY. —  $\frac{1}{2}$  IN. SCALE.

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*Explained on page 182.*