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

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# Mechanical Literature.

## ADVENTURES OF THREE JOURS.

BY H. S. WILLIAMS.

### Chapter I.

The twelfth day of December, 1856, will long be remembered as one of the coldest and most disagreeable ever experienced in the Mound City. The snow that had fallen the previous night lay deep upon the ground, the sun struggled in vain to pierce the dull leaden clouds that obscured the sky, while the wind from the northwest came in fitful gusts and blasts, piling the snow in huge drifts and driving it with cutting force in the faces of the few pedestrians who were so unfortunate as to be compelled to brave the perils of the streets. About three o'clock on the day in question, three young men were seated in a large but warm and comfortable saloon, busily engaged in testing the merits of oyster stews and sparkling catawba. A greater contrast in their personal appearance could scarcely be found in a day's search, for one was,—but let me present their photographs in detail, for we will have a good deal to say about this trio before our story is ended. The first, Mr. Harvy Margrave, was principally noted for his boast that he stood just five-feet-four in high-heeled boots, and in the fact that he would persist in dressing some ten years behind the prevailing fashion. In looks he was one of those truly unfortunate creatures that could not boast of being handsome nor downright ugly, for his was one of those faces that one would pass a hundred times without being able to describe his appearance. Gray eyes, a nose belonging to the pug family, long hair, the color of which formed the dividing line between black and red, and a moustache that could only be described by the rather strong adjective—tremendous. On this latter hirsute ornament, by the way, he bestowed the sole care and attention that he ever gave his personal appearance. Every morning it received a dressing of pomatum, was duly curled and twisted, so that the ends stood out in fearful proximity to his ears, not unlike what we see in pictures of famous Mexican brigands, and without which no portrait of full-grown masculine members of the French Imperial family would be complete.

The second, Mr. Frank Loring, was about five feet ten, well made, dark blue eyes, a small, black moustache, beneath which a full, even set of teeth displayed their pearly whiteness; a head of black curly hair—in a word, his lady acquaintances—and they were many—pronounced him decidedly handsome.

The third, Mr. John Gloner, who occupied the head of the table, and who was chief of the trio, was decidedly ugly. Full six feet in height, slim and raw-boned, high cheek bones, a Roman nose, hair of that peculiar color known as "carroty," a short wiry beard a shade lighter than his hair, large mouth, awkward and uncouth in his general appearance, and you have the man. He had two redeeming points, however; first; in his forehead, that run high and white; and, secondly, in his eyes, small but black, that sparkled brilliantly beneath great shaggy eyebrows—eyes that almost charmed one when the speaker was interested in any subject.

Thus you have them photographed in ink—these fast and firm friends, and fellow-workmen in the same factory. The first was a trimmer, the second a painter, and the third a body-maker, and each a first-class workman in his line. Rather dull times in the metropolis of the Mississippi valley, and the extraordinary cold weather combined, had caused them to devote the afternoon to comfort instead of work. So much by way of introduction; and new let us proceed at once with our story.

"The suggestion of Mr. Margrave deserves to be duly considered," said Gloner, slowly, "for, as he truly says, work is decidedly slack—"

"And wages starvingly low," sputtered Margrave as he swallowed a spoonful of his stew.

"And then the weather is so terrible," put in Loring, with a shiver. "Twenty-six degrees below zero. Horrible!"

"Exactly," returned Gloner. "Three very good and very substantial reasons why we should seek a change of locations. Stronger arguments could not be adduced; but, in the language of the immortal Daniel, merely substituting the plural for the singular, 'where shall we go?'"

"I received a letter," said Margrave, "from up the river at Liberty about six weeks ago, offering me a job and stating that wages were good and work plenty."

"Three or four degrees colder than St. Louis," remarked Loring.

"True enough," replied Gloner, "and the bleak prairies of Illinois—"

"Three or four degrees colder than Liberty," said Loring. "It won't do. We must learn wisdom from the birds and emigrate southward. Wish I had gone a month ago."

"Sensible to the last," answered Margrave, giving his moustache an extra twirl. "Now allow me to make a suggestion, prefacing it with a brief episode in my own history. Last winter I worked in Memphis. I had a good boss, plenty of work and my own prices, and would have been there yet if it had not been for—"

He hesitated and gave his moustache another twirl.

"A woman, of course," said Gloner. "But never mind the particulars. It is a delicate subject, no doubt. You left, and now prepare to return."

"Exactly. Your penetrating powers are most excellent. I should like to go there, but not to work. No doubt but what we could all get jobs in the interior of Mississippi or Alabama, and there we will find the finest weather you ever experienced, as well as the best wages—in fact, we can get any price we are a mind to ask for our work, and if we wouldn't make those old fogy bosses open their eyes, 'twould be a wonder."

"No doubt but the winter would be pleasant enough, but how about the summer?" asked Loring.

"You have experienced as hot weather in St. Louis as you will find in Alabama," returned Margrave. "It is only the duration of the heated term that renders the summer in the south disagreeable; and if we find it too much for us, why, it is an easy thing to emigrate northward again."

"I believe the suggestion a good one," said Gloner, slowly, "and I move we go South, for the rest of the winter at least."

"And I second the motion," returned Margrave.

"There is no use in putting the question," said Loring, "for you constitute a majority; therefore I shall acquiesce, and now the sooner we put our plan in execution the better. I wonder what boats are up for New Orleans?"

Gloner rang the bell, and as the waiter answered the summons, he asked for the morning's "Republican." "It is now four o'clock," he said, "and the river will be frozen so as to stop navigation by to-morrow night if this weather continues."

"I can get ready in one hour's time," said Margrave. "A carpet-bag contains all my tools, and a small valise all my wardrobe."

"My wardrobe is a little more extensive," exclaimed Loring, "but my tools I carry in one pocket of my overcoat."

"Half-a-dozen boats up for four and five o'clock," said Gloner, after glancing over the shipping column, "and a 'special' announces the departure of the Champion for six, and a splendid boat it is. I know the captain well—a good, clever fellow, and a king among steamboatmen. We can get ready for her. What do you both say?"

"Let us go, by all means. Fill up, gentlemen!" exclaimed Margrave, rising, and seizing the bottle of catawba, he filled the glasses. "'Here's to our enterprise,' as somebody says in Richilieu."

The glasses were drained, the bill called for and paid, and at the door they separated to meet on board the Champion at six o'clock.

The steamer lay wheezing and puffing at the levee, while all on board was hurry and confusion. Dray-load after dray-load of bacon, corn and groceries were stowed away on her capacious decks, filling the telegraphic orders from New Orleans and other inner towns, so as to have a good stock on hand in anticipation of the closing of navigation above Cairo.

Margrave was the first to arrive, for he prided himself on being a minute man, but was joined in a few minutes by Loring. Six o'clock arrived, the last bundle of freight was put on board, the bell was ringing for the third time, and only a single plank remained out, when Gloner made his appearance with two ponderous trunks that made the porters use rather strong language and stagger a little withal as they *toted* them up the stairway.

"Was fearful you would not get here in time," exclaimed Margrave.

"Somehow I have the luck of arriving at the last minute," returned Gloner, taking a seat by the stove that glowed red hot in the social hall. "It has kept me busy, however, to get here this soon, for I had to settle up with the boss, pack my tools and wardrobe, beside, the most unpleasant of all, bidding my landlady and a dozen or two fellow-boarders good-by. None of them knew how much they thought of me until I was going to leave."

"That's always the case," said Loring. "We do not know how strong the ties of old associations are until we sever them. But the engines tell us we are about leaving; so let us brave the weather for a few minutes and see the last of St. Louis."

Up and down the levee, as far as the eye could reach, thousands of lights glistened through the frosty air, presenting a scene at once picturesque and beautiful. The steam bellowed from the escape pipes as the engines turned the ponderous wheels a few times, apparently by way of experiment, to see if they possessed the requisite power, half-a-dozen clerks sprang ashore, the plank was hauled in, the whistle sounded for the last time, and they were off.

"So much for St. Louis, with its frosts and snows; now for the sunny South," exclaimed Margrave as they returned to the stove.

Shortly afterward supper was announced. In the days of which we write, before the railroad divided the travel with steamboats, there was great rivalry between first-class boats to see who could present the best bill of fare, and the Champion was second to none in this respect. It was, in truth, a most excellent supper that our friends sat down to, and most ample justice did they do it.

"By the way, we have not decided on our points of destination yet," said Margrave as he passed his cup to the waiter to be refilled for the third time. "Is it best for all of us to get off at one place, or shall we divide out?"

"I have thought the matter over," answered Gloner, "and have come to this conclusion, which I will submit for your consideration. It is self-evident that Margrave here wants to stop at Memphis. Very well. Let Loring stop at Vicksburg, while I go on to New Orleans. Montgomery, Alabama, shall be our central point. From Memphis Margrave can strike out through North Mississippi, bearing down toward Columbus, thence through

Alabama by way of Eutaw, Greensboro' and Marion, and if unsuccessful, go on to Montgomery. From Vicksburg Loring can pass out to Jackson, on to Brandon, Demopolis and Selma, thence by river to Montgomery. I will go from New Orleans to Mobile, thence by steamer up to the capital. As soon as one gets a job, let him write to Montgomery, detailing the particulars, and if either of the others can get a job there. If all are unsuccessful, why, we will meet in Montgomery and consult together for future movements. What do you both say to the plan?"

"A most excellent one, and well digested in all its parts," returned Margrave, who, as the reader has already surmised, had a weakness for quotations.

"Then we will consider it settled," returned Gloner. "Of course the reason why I desire to go to New Orleans is on account of my heavy baggage, as transporting it by water is decidedly cheaper than by stage routes. And now I will go and hunt up the captain, when we will pay our fare and receive state-rooms. The boat is not crowded with passengers, fortunately, yet I have a choice in sleeping apartments, even on steamboats."

The captain was soon found, Margrave and Loring duly introduced, the fare paid and state-rooms secured, when they begun the task of getting acquainted with their fellow-passengers. As Gloner said, they were few in number. First, there was an ex-judge from Illinois, going to New Orleans with a couple of thousand bushels of corn; a young lawyer from New York going somewhere to make his fortune; a cotton broker from New Orleans going home; a cattle drover from Texas dressed in a complete suit of buckskin, who, having sold out, was returning to his boundless prairies; a medical student from the interior of Alabama; an invalid in the last stages of consumption going to Tampa Bay as the *dernier resorte*, and some half dozen others travelling for business or pleasure. The work of getting acquainted was easily done, and very simple withal. A few visits to the bar, the burning of a dozen or two of cigars, some three or four games of euchre, and the work was accomplished. The steamboat cabin on our western rivers is in truth one of the most sociable places in the world. Every passenger is as it were for a week or more a member of the same family. They eat together, they pass their days, and often the best part of the nights, together, so that they are compelled to get acquainted and be sociable, no matter how reserved they may be under other circumstances. A man's past history and antecedents is nothing. All the rigid laws that govern society in the busy world are here trampled under foot, and all are gentlemen placed upon an equality. As our friends had all seen much of the world, and were pretty fair talkers, they were not slow to take advantage of these facts, and when the time came to seek their respective state-rooms, they were on the best of terms with all on board; Margrave in particular, who knew the name of every passenger, where they hailed from, where going, as well as their business in going there.

The next day toward evening they reached Cairo, where a few more thousand bushels of corn and a half dozen men were added to the freight and passenger list, and just at daybreak the next morning they started down the river. The Champion was a first-class steamer and a great favorite with the travelling public, as but few boats running could excel her in speed, while the accommodations were in truth superb. A trip down the Mississippi at the time of which we write was very different from the same trip at the present time of air-line railroads. It was, in fact, an event in one's life to be treasured up in the store-house of memory and talked over in the years to come. To two of our travellers it was such an event in their history; and now as they proceeded southward, and the weather became more pleasant, they passed most of the day on deck. The scenery, to be sure, was rather monotonous—a bold, bluff bank on one side, and a low, level bottom, heavily timbered, on the other; but the river itself was ever beautiful in its magnificent grandeur. Every hour or so an ascending steamer or a slow descending one was passed, while the thriving towns at which they stopped always presented something new and interesting.

"This is a noble river," said Gloner as a party of the passengers were standing on the hurricane deck just as they were leaving New Madrid, a town rendered famous by the great earthquake of 1811. "A noble river, and it is, I consider, the greatest boast of America, despite her Lake Superior and her Niagara. Here we are a good thousand miles from the ocean, and we might go up the river seven hundred miles to St. Joseph—for I consider the Missouri the main stream—and there meet a steamer that had just descended fully fifteen hundred miles, making continuous river navigation of over three thousand miles. When a boy, the height of my ambition was to see this river and sail on its broad bosom, and now my early dream is about to be realized."

Just then a steam whistle sounded clear and shrill above, and all eyes were turned in that direction, when a steamer was seen rapidly approaching with its red and blue lights swinging high aloft, and its glowing furnaces reflecting far across the water, for it was now fairly dark.

"That's the Eclipse," exclaimed the Illinois judge, "the fastest boat on the river. We left her at Cairo this morning. Now for a race."

"Race!" returned the Texan, who was known as Governor. "Race!" I don't like any race unless it is a horse-race. It's dangerous, particularly on water, when one takes into consideration the unpleasant fact that he can't swim."

As the Eclipse did not stop at New Madrid, she was almost alongside of the Champion when the latter got fully under way, and by the way the engineer's bells kept ringing, it was self-evident that the Judge was correct, and they were to have a race between two rival boats.

For a mile or so they ran side by side, appearing like some "huge monsters infernal" rushing forward to scatter death and destruction about them. Then the Champion gained slightly and shot half her length ahead, whereupon our little crowd raised a shout not unlike that which we have since heard upon battle-fields, and in which even the Governor joined, at the same time taking off his cap and bearing his venerable head to the cold night breeze, exclaiming, "Hurra, boys! Champion in deed as well as in name."

But just then the furnace-doors of the Eclipse were thrown open, and in the red glare of the glowing flames you could see the black firemen, appearing like demons as they bent, half naked, to the huge pile of resinous pine, and cast piece after piece in the ravenous jaws before them; then the doors were closed, and the boat, seeming to take inspiration from her illustrious namesake, gathered

new strength at the prospect of defeat, and she sprang forward with a tremendous effort, gained slightly on her rival, snorted the breath from her iron nostrils more loudly than ever, and then slowly gained ground, ran along side for a few minutes, when a bend in the river on her side gave her the advantage and she shot by, while a shout of triumph rose from her decks that made the old wood on either side echo far and wide, whereupon all our friends re-entered the cabin with a sigh of relief and regret combined.

"Well, Governor," exclaimed Margrave, "even though you are opposed to boat-racing, it seems you took some interest in this one."

"My young friend," answered the Governor, very deliberately, "it is natural for every man to desire to excel every rival he encounters in this life, no matter what the undertaking; and I am human, so let us all go up and take a drink," which was accordingly done.

It was a bright December morning when the Champion rounded to and lay up beside the wharf boat at Memphis.

"I am sorry to leave you all," said Margrave, as, valise in hand, he stood at the head of the gangway, "and I almost envy you your trip down the river; but I must bid you good-by."

"Good-by," returned Gloner. "Do not forget your programme, nor let that daughter of Eve cause you to tarry too long in this ancient city."

"What!" exclaimed the Governor, taking the proffered hand, "are you going to leave us so soon, and is there a woman in the case? and just as I began to take an interest in you, too, for there is a similarity between us, in taste at least, for you are independent of the prevailing fashions of dress, and so am I—and a woman, hey? Here let me give you my parting advice, which I learned from an aged Indian in my employ. Avoid women; keep a good supply of money on hand; let to-morrow take care of itself, and you may be happy."

"Your advice is excellent," answered Margrave, with a laugh, "but decidedly hard to follow;" and he sprang ashore, walked briskly up the levee, and was soon lost to view in the crowded sidewalks of the busy city.

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

### INTRODUCTORY.

THE wood-work in carriages forms one of the principal branches of the art of coach-making; it embraces all the parts in wood that come under the names of body, case, box, and seats of pleasure-carriages, and those particularly designed for the transportation of persons.

The principal aim we have in view in this work is to teach the art of joinery in carriages in the manufacturing of coaches, with the aid of principles in geometrical descriptions such as have been established by Mouge. We shall give, also, the usual dimensions of the principal boxes, or bodies, and some ideas upon the forms the most advantageous for the service they are intended. We shall also mention the properties of the various natures of woods employed in this manufacturing, the season when it is best to cut them, the manner of measuring and storing them, of obtaining a prompt dessication and using them,—the results of experience, which have been made to determine their density, elasticity, and cohesion.

This treatise is not the first upon this subject; there exists one very little known in coach-making circles, but which, nevertheless, merits here special notice on account of the care with which it was written. We refer to that of Roubo, published at Paris near the year 1771, and made part of a work upon joinery in general, in building, carriages, cabinet-making, mosaic, and lattice-work. This work of Roubo is still very much esteemed in our day in all the branches upon which it treats. The theoretical part is very well explained, not with that simplicity and methodical clearness which we find in the actual works inspired by the genius of Mouge, but with the means known at that time by the most learned.

Roubo was a son of a builder-joiner, and the part of his book treating on that branch of art shows that he was familiar with it in all its parts. The part devoted to carriage joinery, also, leaves little to be desired; and if Roubo had not confessed in his work that he knew practically nothing about it (only having received his information from workmen familiar with it), one would have believed, from all the details and information accumulated therein, that the author was, on the contrary, perfectly familiar with it.

Roubo commenced his treatise of joinery in carriages by a precise history of the art of coach-making; he gave a summary description of the chariots, wagons, litters, or sedans, in use among the Egyptians, Greeks, and Romans. Then, reaching the time of the *Renaissance* (new birth or new age), from which dates the origin of the first carriages in France, he gives a very detailed description of the coaches and carriages, and of their transformation from Francis I. even to the end of the reign of Louis XIV. Then he analyzed the carriages of his time, gave the general dimensions of *caisses* (bodies), indicated a method for determining their outline, and the operations which conceal the construction of all the accessories and the delineations of building. Finally, he ended his treatise by a description of the various uses for which carriages were utilized in his time.

Roubo, examining the process of execution of carriage joinery by his contemporaries, pointed out their errors, and substituted a better method, which was not practiced, for in 1839, at Paris, they still repeated the errors this author had so justly criticised.

To the theoretical knowledge that Roubo possessed in a very great degree, that also was joined with a great experience. He foresaw the changes which, in the future, would take place in carriages; and time has fully justified his provision.

Fifty prints illustrate his book, and, not including all the plans useful for demonstration, the principal carriages in use since Henry IV., even to 1771, were designed and drawn by him. These engravings are well executed, and much superior to similar prints of carriages which were published at the same time in the encyclopœdia, dictionaries, and collections upon arts and sciences. Above all, there was a great carriage diligence (coupé), a Berlin (one seat), and a calèche (open carriage), which for arrangement and proportions of lines are perfectly executed; most of them are ornamented with all the richness of the style of Louis XV.

Shall we believe that, notwithstanding his merit and

* This article has been translated from the French of M. Brice Thomas, expressly for this Magazine, and will be continued until finished. The carriage-maker will find in the perusal much instruction, to be had nowhere else in the English language.—ED.

the services that his book really ought to have rendered, it was not then known in that branch of art. From all the reliable information we have on that point, the first copy of his book known in Paris was bought by Pellier, senior, carriage-joiner, in 1842, seventy-one years after its publication. Then several of the processes of execution demonstrated therein had become known, they having been taught by M. Gablot, in August, 1839.

It would be temerity, perhaps, to pass conjectures upon the causes which prevented the work of Roubo to penetrate into the literature of carriage-making, and, above all, the joinery of carriages. Was it the high price of the work (which ought to have been at least 150 francs at the time of its publication), or the ignorance of workmen at that time? It was, perhaps, one or the other. If Roubo had published his treatise in installments, so that the price of each had been approachable, it is evident that his work had been better known, and would certainly have contributed to the progress of the art of *carrosserie* (carriage-making).

In an historical point of view this work of Roubo's will always be held as one of great merit; it gives us a very detailed description of the construction of carriages from the time of their origin in France to the time of his publication. It subsequently tells us that the Parisian carriage was very popular to the end of the reign of Louis XV., and would evidently occupy the first rank in the world.

In the meantime some English styles were appearing among us, especially the coupés (which they then called diligences), almost like our great city coupé (coupé de ville). Roubo exhibited his astonishment and indignation. See what he says on page 518 of his treatise:

"The *caisses* of carriages called English are after the style of a Berlin and diligence, but oftener of the latter than former. These carriages differ from those of the French in that they have less enlargement of the shaft, they are not arched at the sides, where they have only a little widening and are less arched and less in height than these last. These carriages have not the curtained window, not even a show of a bishop's staff, and the window in front is divided in two parts, which slide independently the one of the other, being divided by a post behind, in which are placed double grooves.

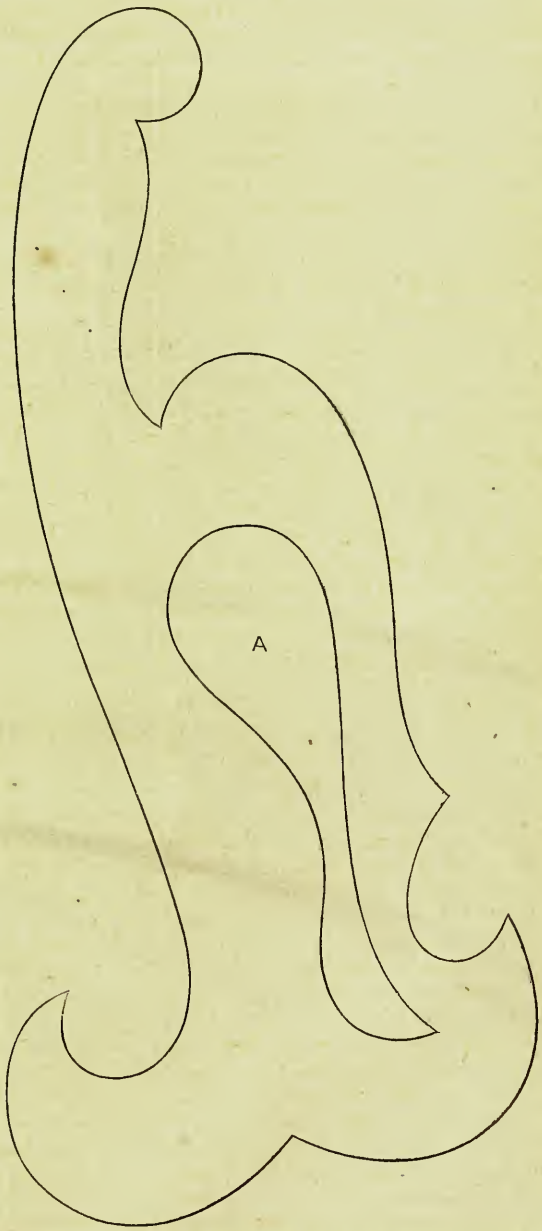
"The English carriages are very fashionable at present, and I do not know why, as they possess neither beauty of form or grace, resembling rather a chest pierced with several arrows than the box of a carriage; but it suffices that the invention comes to us from England, to the end that all must have one, or desire to, as if some law existed obliging us to be the servile imitators of a rival nation, and which, although very respectable and worthy our imitation, should never be imitated in works of taste in general, and above in that of which I treat."

It is well to remark here, since that time the English carriages have been distinguished by great simplicity of construction.

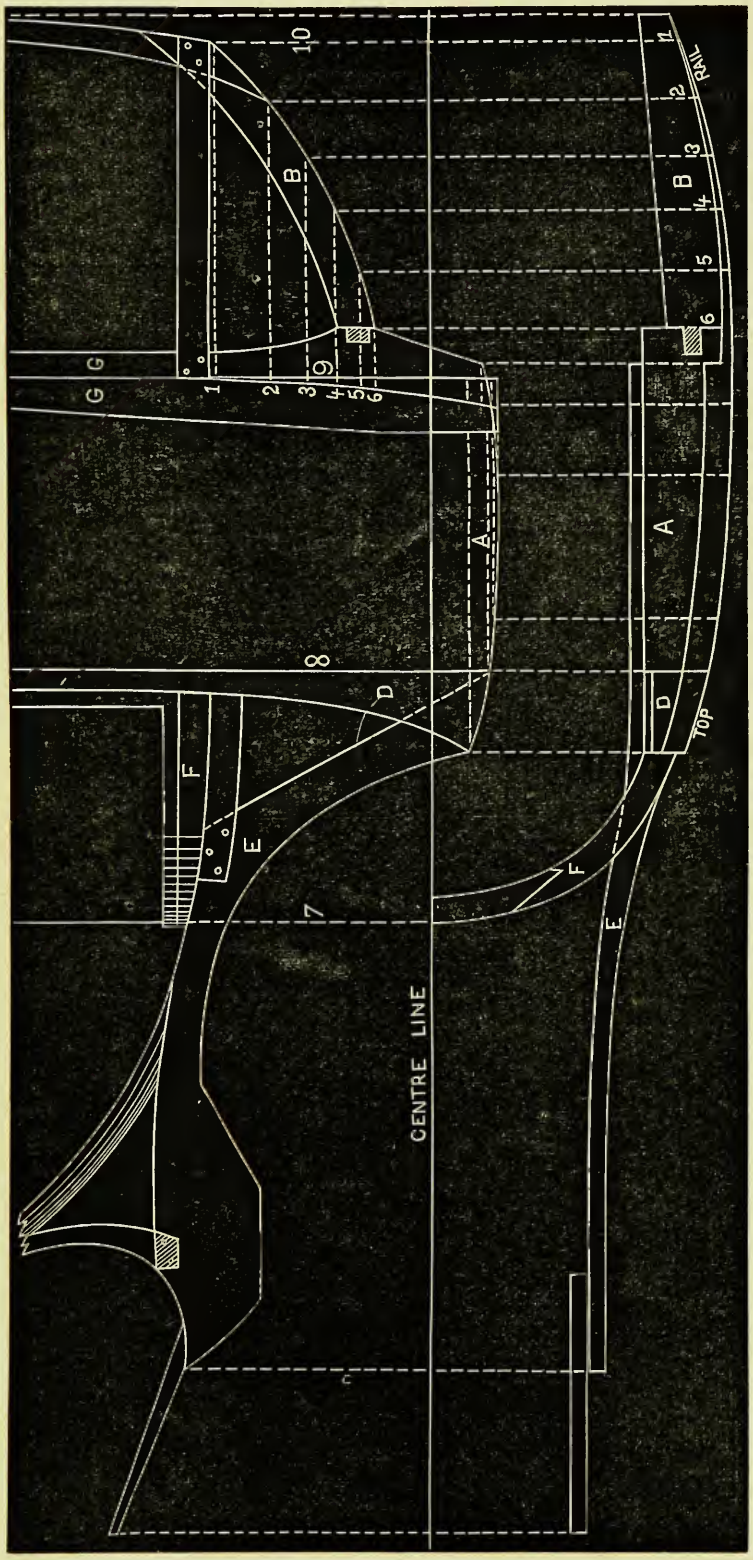
(*To be continued.*)

## SWEEPS FOR SCALE DRAFTING.—IV.

The sweep we give on this page is the fourth in the series intended to aid the mechanic, by furnishing him with the proper instruments for drafting carriages on a small scale. As some of our readers may not have seen our former remarks, for such we will add that in order to transfer the sweep to the veneer, it will be necessary, first, to copy the outlines by tracing them carefully on a transparent piece of paper, this paper should then be laid face side down, and the lines gone over again with a pointed stick of hard wood. In this manner an impression of the the outlines will be left on the veneer, to guide the manipulator in cutting his sweep with a penknife. The space at A should be entirely cut out. Finish by filing the edges smooth, and a little rounding, that your pen or pencil may work freely when drawn along the edge.




SWEEP FOR SCALE DRAFTING.




CLARENCE WITH METROPOLITAN BOOT AND CANT.—THREE-QUARTER INCH SCALE.

## GEOMETRY OF CARRIAGE ARCHITECTURE.

BY A PRACTICAL COACH-MAKER.

### BODY CONSTRUCTION.—PART THIRTY-FIRST.

THE diagram, in this instance, refers to the clarence, which appears on the first plate in this volume. When placing the diagram on the blackboard, always, in the first instance, draw the center-line to serve as the base for future operations, as marked in our plan. Having determined the width of door and length of quarters, next draw the perpendicular lines 7, 8, 9, and 10. In this drawing we have presented the face side of the standing-pillar, G, so as to exhibit the amount of the turn-under of the body.

The dotted lines intersecting each other and numbered from 1 to 9, exhibit what is called the square rule of construction, a knowledge of which is very essential in building complicated jobs like this. When putting these on the board, begin by setting one leg of the compasses on numeral 1 of the dotted lines at the standing-pillar, and get the distance from the standing-pillar (where it commences turning under) to the dotted line correspondingly numbered on the cant below. This distance is next pricked off at that point and afterwards the other numbers should be gone through with in like manner, until the whole are added as in our diagram. By this process the sweeps of the bottom-sides and back pillars A and B are determined.

What is called the cant is laid down on the lower edge of the board. There A is the bottom-side corresponding, lettered the same as in the draft above; B B, the back-pillars; D D, the front-pillar; E E, the neck-rocker; F F, the compass front, which should be spliced as shown in our diagram.

## SCREW-DRIVERS AGAIN.

BY JOHN B. PEEK.

MR. EDITOR:—My attention has been directed to an article in your magazine for the month of April, under the heading of "Screw-drivers—Once More," by Body Maker. Without entering upon an extended review of his denials—since he has adduced no argument—I shall briefly notice the points in his article. In the first place, he says "there can be *no distance* between the end of the handle and the line of the screw, unless the screw-driver is inclined out of the perpendicular." I will simply ask him—Is there no distance from the end of the handle to the point of the driver? My two-foot rule says there is; and be-

sides, is there no distance from New York to Bridgeport on a direct line to Boston? If he cannot see, or find, the distance in both cases, perhaps those architects and scholars whose services he obtained on my former article, may be able to elucidate the points and distances in such a manner that he can *comprehend* what I mean when I say "*the distance between the end of the handle and the line of direction of the screw acts as a lever.*"

"Body Maker" claims there is a misunderstanding between us. For my part, I think I have none; but in order to do away with it on his part, he resorts to a forensic settlement, making the proposition contained in your magazine of April as a basis of settlement in regard to the questions at issue between him and myself. I accept those propositions, as far as concerns the matter of each placing five dollars in your hands; and also that the editor of the *Scientific American* shall decide the case. But as I am the challenged party, I claim the right by the code, to choose place and weapons. I propose, then, that Body Maker and myself place in your hands three dollars *each* additional, making sixteen dollars. If the decision is in favor of Body Maker, the sixteen dollars is to pay his subscription to your magazine and the *Scientific American, each*, two years. If the decision is not in his favor, the sixteen dollars is to pay my subscription to *each* publication for two years.

As I have stated the time and place, according to the code, I will now name the weapons. Body Maker is to send to your address (express charges paid) a hand screw-driver such as he claims to use, the blade not to exceed eleven inches in length (or shorter should he deem proper), and I will also send on the same conditions to your address, a driver which I now use. The decision to be made practically from these two drivers, all marks of the owner being expunged. Furthermore, he in whose favor the decision is made shall have forwarded by express to his address both screw-drivers. Dare Body Maker accept these terms? I have accepted his challenge!

In conclusion, he observes that there is one point about the screw-driver which has not been touched upon in this discussion, also giving us an illustration of *how* the point of the driver should be formed. According to his theory, allow me to ask Body Maker how many different sized screw-drivers he has in use to fit the neck of the many different sized screws? He being fearful that the decision by the editor of the *Scientific American* may be against him, winds up by what *he* deems a *witty* derision of elasticity, expecting much force from a dog power. I think his plan can be adopted with a great saving on the running expenses of the machinery, providing the dog is heavy enough and the shaft not too elastic.

## Home Circle.

### THE VELOCIPEDIST TO HIS MACHINE.

SPEED on, my peerless swift-paced steed,
Show forth thy utmost powers of speed.
(Why will it wabble?)
Fair damsels note thy bird-like flight,
And praise thy form compact and light.
(Jerked o'er the cobble.)
E'en fools who scoff the iron horse,
Admire thy arrow-darting course.
(I fear I'll fall!)
Thy wheels, like chariot of the sun,
Revolve as driven by Phaëton.
(I'm sure I shall.)
No eye can trace the speeding spokes,
Responsive to my trained foot's strokes.
("Sprained" it should be.)
Like bloodhound bounding to the fray,
Swift as the eagle for the prey.
(The boys pass me.)
We skim along the wondering earth,
And distance steeds of vulgar birth.
(When they stand still.)
We rush through plodding, dusty streets,
The swarming, choking town retreats.
(I've had my fill.)
We gain the open, well kept road,
Sparks rim thy wheels with iron shod.
(I'm soaked in sweat.)
Firm poised, I feel I fear no trace,
The freshening breezes flush my face.
(My boots are worn.)
My every nerve the motion thrills,
And happiness my bosom fills.
(My pants are torn.)
Past lake, o'er hill, through wood, down vale,
I skim like bark before the gale.
(I'm saddle-sore.)
My blood within my veins flow free,
I feel of spirit birth with thee.
(I'll ride no more.)

### WINTER RAMBLINGS IN KENTUCKY.

BY PORTE PENCIL.

*Continued from page* 184, *Vol. X.*

THE landlady, who was a strong and healthy woman, commenced early and made a great stir to put things in order. She instructed her boys to put on a back log, and pile up *heaps* of wood by the side of the fire-place; her girls to have some cider drawn, butternuts brought down, and plenty of doughnuts and cheese set by in the smoke house, while she arrainged two stout barrels of apples in the middle of the floor, and fixed the seats precisely as she intended they should all sit. The party began to come in at about dusk, and at seven o'clock, nearly twenty couples of young men and girls had gathered in from the neighborhood. It is impossible to describe the scene preparatory to the "paring" operations, no one can imagine the character of the noise produced by the chattering of so many voices, unless he has been in the neighborhood of an awakened pigeon roost—I mean a roost of wild pigeons. However, order was magically restored in a short time, and it being settled who should be the "parers" and who the "sorters" who the "quarterers" and who the "corers," they all fell to, and a large tub was shortly filled with apples, nicely "cored and quartered." During this operation, however, there were sundry snappings of seeds and twistings and twirlings of apple skins, which furnished no less amusement to myself than glorious sport for the company. It is to be supposed that I received my full share of apple seeds and apple skins, the company having become wonderfully familiar with me for so short an acquaintance.

When the first tub was filled there was a respite, and

the thunderings, murmurings, screaming and screeching, commenced again,—the cider circulated, and as soon as Dan the fiddler began to "tear out" a tune, there was such a jumping, shuffling, kicking, spilling of apples, flying of skins, and, "grand and lofty tumbling," as I never before witnessed. It "got out," presently, that amongst my other numerous accomplishments, I could play on a fife! Upon this, Dan transferred his violin to me, and while he ran more than two miles, swifter than Crusoe ever chased a goat, after a fife, I inspired the dance with music on the former instrument. When Dan the violinist arrived, I applied the shrill pipe by way of accompaniment. The effect was most wonderful. The whole company stood still, and gazed for a moment, then the *soiree*, commenced again as though it had received a supernatural kick—and indeed the hipsey-saw, the *chasse*, the crossover, the down outside, the double shuffle, the single shuffle, the waltz, gallopade, or "hip and hop," and the reel and hornpipe, were mingled there with most surprising spirit, congruity and taste.

Again, however, after circulating the cider and the Rose Bud Bourbon, all returned to the task of apple paring. But Dan and myself, by universal acclamation, were appointed to entertain the company with some of our "finest touches." Dans arm, however, soon became fatigued, and as for myself, my breath could not have held out much longer, for my instrument was an ancient one, required a deal of wind and much watering, whereupon Dan proposed that the eldest of the company should relate a story. It fell upon a small, sharp-nosed, rough-hewn, long-haired man, of about sixty, who, it appeared, had just happened in. Drawing his chair into the corner, and thrusting his stick into the ashes he thus began:—

"There was once a rich miser, who, laying at the point of death, made his will, wherein he provided, that as he had always been fond of hickory nuts, the space unoccupied in his coffin after his death should be filled with them. His executor did as directed, and the old miser and his hickory nuts were carried to the tomb.

"Now, at the old man's funeral, a youngster who had a great liking for hickory nuts, and couldn't for the world, see that so many in the coffin could be of any possible use to the dead miser, resolved to get them, so he started one dark night to procure the nuts. Coming to the gate of the burying ground he met a stranger, who asked him where he was going? He replied, 'None of your business.' Where are *you* going?—None of *your* business. Thus at issue upon such equivocal answers, they suspected each other of being engaged in like pursuits. Whereupon the former frankly told the latter, that he was going to get the hickory nuts in the old miser's coffin. 'Well,' said the other, I am going to steal a sheep, and now, if you are a mind, we'll engage to go snaks,—'Agreed,' replied the former, 'and we'll meet on the steps of the church.' They went each his own way; the youngster succeeded in getting into the tomb, and opened the old misers coffin. He took out nigh upon a basket of hickory nuts and tied them up in the old man's shroud. On reaching the church door he found that he was in advance of his comrade, and pouring down his *spoil* he put on the shroud and commenced cracking his hickory nuts. Presently as the clock was about to strike nine the sexton's boy came to ring the bell. He knew of the circumstances of the old miser's burial, and on seing a being in white sitting on the steps of the church cracking hickory nuts, he fancied the old miser had '*riz*.' He was seized with such a fit of affright that he dropped his lantern and ran home as quick as his legs could carry him. 'O father! father!' cried the boy in consternation, 'the old miser's riz, and there he sits on the meetin' house steps, cracking his hickory nuts!' 'Go up fool, and ring the bell.' ''Tis true as I'm alive—there he is, all in white!' 'Go up and ring the bell, I tell you—don't be around here with your nonsense.' The boy started again, and again he saw the apparition, and ran home to his father's bedside full of consternation. His father had been for a long time a cripple and bedridden. ''Tis *sartin* as the world, father,' again exclaimed the affrighted boy, 'and if you won't believe me, if you will get on my back, I will carry you there, and show you to your satisfaction.' The old man's curiosity was a little excited, and to gratify the boy he consented. The boy accordingly started with the old man on his back and a lantern in his hand. On approaching the church the being in white became apparent. Presently the boy stopped with his burden in utter amazement. They heard the apparition asking in deep sepulchral tone, 'Is HE FAT? Is HE FAT?' Almost chilled with terror the boy dropped his father, exclaiming 'Try him yourself, for all I care!' and sped for home, and his crippled father was not slow at his heels."

The old man's story, although I cannot convey the manner and effect, produced wonderful effects and much applause.

It being now about nine o'clock, and the task about finished, we all partook of a plain and quiet feast of doughnuts and cheese, butternuts and apples, then came the cider and "Rose Bub"—then Dan and I lay hold of our instruments—then the floor was cleared and the dance began again. It will be sufficient to observe that the spirit of the jig, the fandango and the rigadoon, were never more inspiring, never more irresistible. Indeed, even so grave and modest personages as Dan and myself were irresistibly drawn into the giddy mazes, and our feet and our fingers, our bodies and our whole souls, were entirely engrossed in the remaining business of that evening. The "paring bee" broke up at three o'clock.

The following morning I was aroused by the following exclamation. The speaker was a Scotchman, employed about the premises as a "hired man." An adequate supply of skillful and reliable negro field and domestic labor, is out of the question in this State, at least it is not strange that the embarrassments of the farming community and the discomfort of the domestic circle seek expression so often through the press and in social intercourse. The evils are great beyond endurance almost, and a remedy is sought by displacing this old negro element, by white emigration. (I beg pardon for digressing.) "God's sake, sir, the de'il to pay wi' us a'! the cows tails are a' tethered thegither in the barnyard!" "What?" cried the *snoozy* landlord, a short, "fat, oily looking man." "Gang ye out wi' me and ye wad see sic sair witchcraft hae been ganging the nicht. The pigs i' the garden—the oxen o' the corn, and the deil take me, gin the horses heads arn't a' whar their tails should be;" the stalls. I overheard some unconscious oaths that slipped through the teeth of the old fellow, relative to "paring bees," and barely had time to get up before I espied him riding at a furious rate, with an ox goad in hand, in the direction of the cornfield, although it was late in the season, he still had some "lopped" corn standing out. He routed the

cattle away in that quarter, even before the Scotchman could get into the field. He then put spur for the barnyard and dashed on with such vigorous speed that the Scotchman afterwards declared, "the deil o' bit could he keep sight o' him." Five cows were drawn together in the center of the barnyard, and a line passing through their noses would have formed the periphery of a circle or rim of a wheel, of which their bodies were the radii or spokes, and the extremity of their tails gathered into a knot the center or hub. The landlord in the plentitude of his zeal was about charging upon the captives, with the fury of a second Hector before the walls of the Ajaxes. But his charger bolted, unequal to the desperate onset, and the old man thereby was thrown high upon his horse's neck. The steed not relishing the manner of taking his seat there, so suddenly reared that the man was thrown back upon the crupper. Fancying this a species of impertinence, the indignant horse kicked up so high and lustily, that the hero was shot off in a tangent, and made a lodgement upon the horns of one of the captive cows. She, not savoring the ponderous burthen any more than Esop's bullock did the gnat, gave him a toss to that other extremity by which she was joined in fellowship to her four companions. Then he came to the earth with severe contusions, and the cows, continually stepping about, and backing in, trod upon his members, and exceedingly aggravated the melancholy nature of his condition. But the undaunted hero, with "passion still strong," raised himself upon one elbow—then drawing from his pocket a barlow knife, a "many-year'd" companion, he slyly reached up his arm and severed the gordian knot! The glad quadrupeds, like wild birds freed from bondage, scampered off in every direction, much to the disparagement of the barnyard fences. The landlord recovered, and fancying the spirit of his horse I purchased the animal. It was then that I obtained that high, dry shod, and independent situation, for which I have so strongly expressed my partiality. I left the "Travelers' Home" the same day, and shall long treasure its pleasing associations. In the course of the afternoon I reached Owensboro. The country through which I passed was quite hilly and woody; soil rather damp and cold; timber, walnut, maple, gum and poplar, the best I ever saw; my way was muddy, wild, and sometimes without a semblance of a road. No stages run north through this section of country.

(*To be continued.*)

# Pen Illustrations of the Drafts.

### FULL CLARENCE.

*Illustrated on Plate I.*

On this plate we present the reader with an original design, in which are represented the principal points of novelty now found in vehicles of this class. Our artist has so well performed his task in the side elevation that very little explanation is needed to enable the builder to go on and transfer it to the black-board. The details we give below may aid the workman in the construction, and are such as cannot well be represented in a drawing.

The width across the body, in the widest part, from outside to outside, should be about 54 inches; across the back, 43 inches; measured across the two front pillars, 43½ inches; circular front in the line of the door, 21 inches; across the boot, 31 inches; turn-under of the door pillars about 5 inches; back quarters at the belt-rail, 25 inches; width of door, 25 inches; and width of seat, 18 inches.

There are now so many colors used in painting, that it appears like supererogation in us to attempt to give anything of the kind. We may, however, add that generally both the running gear and body are now painted brown, with three lines stripe in deep orange color for the former. For trimming use brown satin or Bismark. Price from $1,700 to $2,000.

### LIGHT PHAETON.

*Illustrated on Plate II.*

This design represents a very stylish description of carriage for the Central Park, or other uses required in a family equipage. The construction is very simple, and therefore need not be given in detail here. A cant suited to this carriage will be found on page 150, Volume IX., of this magazine. Wheels, 3 feet 3 inches and 4 feet high; hubs, 4¼ by 7 inches; spokes, 1⅛ inches; rims, 1¼ deep; tires steel, $\frac{5}{16}$ by 1 inch. Trimming should be a dark blue cloth, or some color not easily affected by the weather. Price of the phaeton, $900 to $1,000.

### BRACKET FRONT COAL-BOX BUGGY.

*Illustrated on Plate III.*

Our readers will, doubtless, be well pleased with this design from "our own artist." The seat, it is true, has a foreign *look*, but in this case serves a good purpose, making the buggy appear much lighter than it otherwise would, if paneled in the usual manner. The mouldings are glued and nailed according to the white lines shown on the side elevation. A groove ploughed on the under side, over the rocker, with a round-faced plane, would improve it very much, and make it show off more elegantly when completed. The remarks made in relation to painting and trimming the "scroll coal-box buggy," on the next plate, as well as the size of wheels and price for building, will apply to this vehicle equally as well. Price $450 to $475.

### DOG-CART PHAETON.

*Illustrated on Plate III.*

This dog-cart phaeton, with back seat to fold in, and hung on four elliptical springs, is light enough for one horse, but generally two are used. This vehicle is not designed for hunting purposes, as might be inferred from the name, but for pleasure. Wheels, 3 feet 4 inches and 3 feet 10 inches high; hubs, 4 by 6½ inches; spokes, 1⅛;

rims, $1\frac{1}{4}$; tires, $\frac{5}{16}$ by $\frac{7}{8}$ inch. Painting, black or carmine for the body, and cream color, striped red and blue, for the carriage part. Price $450 to $500.

SCROLL COAL-BOX BUGGY.

*Illustrated on Plate IV.*

WE have no hesitancy in pronouncing this one of the prettiest designs yet given to the readers of carriage-building literature anywhere. The side elevation, if given a little swell, would much improve the job, and show off the scroll finishing to better advantage. The wheels in this instance are 3 feet 11 inches and 4 feet high; hubs, $3\frac{3}{4}$ by $6\frac{1}{2}$; spokes, 1 inch; rims, 1 inch; tire, $\frac{3}{16}$ by $\frac{7}{8}$ inch.

Paint on body English patent black, carriage part lake or Quaker green, finishing with a three-line stripe, formed by drawing a three-eighth inch stripe, and afterwards a red narrow one over it, in the center, when the first gets dry enough.

The most popular trimming is now blue cloth, ornamented with stitched patent leather in place of lace. A city made buggy of this kind costs $450 to $475.

COAL-BOX ROAD BUGGY.

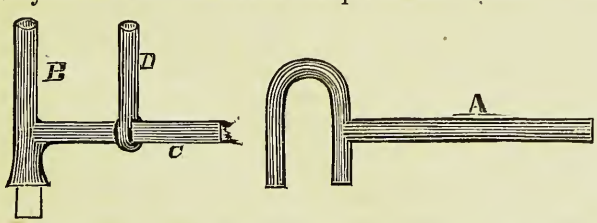
*Illustrated on Plate IV.*

OUR design represents a very fashionable kind of light buggy for the road, which must meet the wants of the public, and prove satisfactory to our patrons. The side scrolling, of course, is done with moulding, nailed on and glued to the panel. Wheels 4 feet and 4 feet 1 inch high; hubs, $3\frac{1}{4}$ by 6 inches; spokes, $\frac{3}{4}$ inch; rims, $\frac{7}{8}$; steel tire, $\frac{1}{8}$ by $\frac{3}{4}$ inch. Price of buggy, $325.

# Sparks from the Anvil.

## IMPROVED BENDING IRONS.

MR. EDITOR: Thinking I might interest the "Sons of Vulcan" who read your interesting Magazine, I take this opportunity for placing before them what I deem something new and useful, and have transferred to paper a set of bending irons, which are the first I ever saw, although they have been in use in our shop for some time.

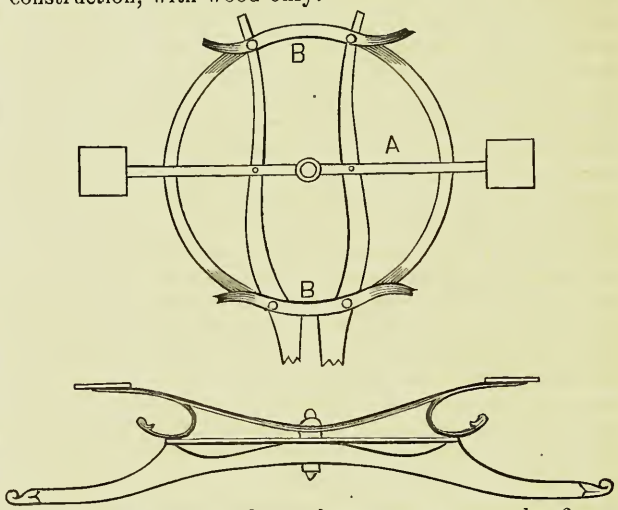



A shows the hand bending lever. The upright in B is forged solid with the arm C, at right angle. This arm C should be swaged oval, for the purpose of keeping the sliding iron D in its place, whenever it is set for either a larger or smaller iron, or for long or short sweeps. If made in this way only one set of irons will be needed for each forge, and these may be formed heavy enough for bending the heaviest coach irons, while they will also answer for the lightest skeleton buggy.

SON OF A SON OF VULCAN.

## TRANSOM STAY.

THE transom stay is a decided improvement on the wooden bed, for it not only looks much lighter when applied, but also raises the body higher without presenting the clumsy appearance attendant upon the old way of construction, with wood only.




In each diagram A shows the transom stay—the first a bird's eye, and the second a vertical view—which can be raised or lowered to suit the height of the front of the body. In using this stay in place of wood, no furchells are required, the front and back stays being bolted on the fifth-wheel, as shown at B B.

## DETERMINATE STRENGTH OF SPRINGS.

ONE great disadvantage under which carriage-makers labor, is the want of a definite rule by which to regulate the strength of springs for carrying a given weight. Thus far this matter has been left very much to conjecture, the result of which in many instances is, they are either too light or too heavy for the uses intended, causing complaints deep and loud from many customers, which, in all instances, might be avoided.

In such a table the number and width of the steel, as well as the length and number of the leaves employed, should be given, opposite which the weight such a spring will bear should be set. The weight of the body and the passengers being known, we could doubtless more readily accommodate our work with more suitable springs than is now done in our guess-sort-of-a-way. If our readers will give us some information on this subject, we shall take pleasure in publishing it.

TO LOOSEN SCREWS AND NUTS.—When you find screws and nuts have become fast from rust, pour on them a little kerosene or coal oil, and wait a few moments until they become soaked with the liquid. When this is done they can be easily started, and the bolt saved.

# Paint Room.

## ON THE SCIENCE OF COLOR.

BY B. N. BENSON.

The results which I have endeavored to deduce from the study of the prismatic colors are fully confirmed by all sorts of experiments made with the colors of pigments. For instance, we may test the colors of pigments with the prism in a beautifully simple way. We have merely to cover a small part of a strip of white paper with the pigment, and view it over a dark cavity through the prism, and we see the spectrum of the pigment-color adjoining to that of the white, and detect at once the rays which are absorbed or extinguished by the pigment, and those which it sends to the eye, to which its color is due. Thus, with respect to yellow, which many will still maintain, I suppose, to be a primary color, unconvinced by the experiments on the combination of the prismatic rays (which show that the best yellow is produced by throwing together all from the first red to the last green ray); if we analyze the color of aureolin, of chrome yellow, or of king's yellow, or the petal of any bright yellow flower, we uniformly find that the better and clearer the yellow, the more perfectly the object reflects all the red and all the green rays, absorbing only the blue. Hence, if blue is a primary color, it is difficult to see how it can be supposed that a color produced by all the other rays of the spectrum is not made up of both the other primaries combined, whatever those primaries are. Some strips of paper, colored in parts with different pigments, will be found on the table amongst the objects for prismatic observation.

Again, we may determine correctly all the intermediate colors between any two given colors, and ascertain the accurate mean between two given colors, without the slightest difficulty or possibility of error, by the beautiful method which was first used by the celebrated Lambert in the last century, and which I have, in my late treatise on the science of color, endeavored to improve and apply to this purpose. We have merely to hold a slip of clean polished glass, perpendicularly, between spots of the given colors, so as to see the near spot reflected from that part of the glass through which we see the other spot. If spots of white and black are placed opposite to each on alternate sides of the given colors, the position of the eye, in which half the light is reflected and half transmitted, is readily found, and the result there observed must be the mean of the colors. When the reflection is more oblique, the reflected light will be in higher proportion than the transmitted, and the contrary with a less oblique reflection.

Those who suppose that they can get the colors intermediate between the colors of two pigments by mixing the pigments, should compare the results obtained by that fallacious method with those obtained by this elegant and easy experiment. Gamboge and Prussian blue, for instance, make, by mixture or superposition, a green darker than either the yellow or the blue of those pigments; the scientific method gives, as their intermediate color, a gray of mean brightness, in agreement with the results obtained by our experiments on the combination of the prismatic rays. So, also, it does with the colors of king's yellow and cobalt, or lemon yellow and French blue or ultramarine.

If we avail ourselves of the well-known property of Iceland spar to give double images of two colored spots, and arrange the spots so that one image of both shall fall together, which is easily done, we obtain the same results. And so, also, if we excite the sensation of the two colors in rapid succession on the same part of the retina, as by the well-known method of rotation. But neither of these methods is so convenient in practice as that of the slip of glass; and I only mention them to show that, in whatever way we can mingle two different color-sensations, we obtain the same results. Small spots of the colors of vermilion, emerald green, and cobalt, of verdigris, rose madder, and king's yellow, with the requisite appliances, have been prepared for the purpose of illustrating these methods of finding their means; and any one who will examine the matter will see that the latter three pigments are very nearly complementary in hue with the former three; that is, the means between vermilion and verdigris, between emerald green and rose madder, and between cobalt and king's yellow, are very nearly neutral grays. The results of all our experiments with colors of pigments, therefore, plainly agree with those of our former experiments on the combination of the prismatic rays, and confirm the opinion that red, green, and blue are the primary, and sea-green, pink, and yellow, the secondary colors.

In perfect agreement with the facts I have stated about the complementary colors, are all those apparent changes of color which are perceived when the retina, having been strongly excited by some one or other color, becomes less sensible to it than usual, and every object to which we direct the eye appears, therefore, more or less tinged with the complementary color, as if a wash of that color had been laid over it. For it is always found that in an eye excited by red, by green, or by blue, objects appear tinged with sea-green, with pink, or with yellow; and the reverse; and that by intermediate colors intermediate effects are produced.

I am aware that some of these effects have been otherwise described by several writers: it is usual, for instance, to hear it said red tinges the adjoining colors with green; but this is not correct, unless the one be a pink-red or crimson, and the other a sea-green green. So, again, it is usual to say that blue and orange mutually deepen each other; but for this to be true, the blue must be of a sea-green blue or azure hue, and the orange must be yellowish.

The most careful experiments, made by looking steadfastly at spots colored with those pigments which best represent the principal compounds of the prismatic colors, and brilliantly illuminated upon a black ground, and then suddenly directing the eye to a perfectly neutral gray ground, will always clearly show the gray surface darkened and modified in hue in accordance with what I have already pointed out as the real or natural complementaries. Thus, an eye affected with bright red or scarlet, like that of vermilion, turns the gray into a grayish sea-green of the hue of verdigris; one affected with green, like that of emerald green, turns it a grayish pink, of about the hue of rose madder; one affected with blue, like that of cobalt, turns it into a grayish yellow, of the hue of king's yellow, and the reverse. The same effects are seen in the shadows cast by a sunbeam which has

passed through strongly-colored glass, upon a gray surface otherwise illuminated by a neutral light, and in many other ways, if due precautions are used. And no doubt the peculiar improvement in depth, which is evident in truly complementary colors when viewed in juxtaposition, the eye glancing rapidly from one to the other of them, arises from the same cause. It is evident, therefore, that the eye itself is so constituted as to agree in this respect with the deductions of science concerning the actual relations of colors.

The attempt to reconcile these obvious ocular effects with the common doctrine as to what colors are complementary to each other, has led some to regard the deep prismatic blue, which Newton called indigo, as being violet in hue, and the deep prismatic red as being an orange red. It is a great incidental advantage in the system I advocate, that it abides by the invariable colors of the spectrum as the standard by which all the colors of natural objects are easily tested; for if we depart from these, we may widely alter the hues of our simple colors one way or another, and be quite uncertain what is right, having nothing but the general vague idea of redness, blueness, &c., to guide us. The terms used to distinguish colors are among the most indefinite in all languages; and the loose way in which they are applied, and the different meanings attached to them by different authors, would lead one to suppose that our color-sensations are so different in different persons, and so variable in the same, that they are more fanciful than real, and that no certainty is attainable in them. Yet, in fact, if we except the comparatively few persons who are only capable of the sensations of yellow and blue, and those whose eyes are less sensible than they should be to red, there is a wonderful uniformity and certainty in the sensations excited by light. Only let the rays which enter the eye be the same in quality and quantity, and let the eye be in the same normal condition, without any present or very recent strong excitement, and we may rely upon the results being the same.

(*To be continued.*)

## PAINTING ON A ZINC GROUND.

THE HUB, after copying our article in a former number of this Magazine, under the above heading, adds the following on the subject:

Articles of zinc may be painted with a permanent coat, by previous immersion in a bath of 100 parts of water and 5 of sulphuric acid, which oxidizes and roughens the surface. After a few minutes take out and expose in the air to dry, and in two days brush over with spirits of turpentine, then let dry and paint.

## ROUGH STUFF.

OUR cotemporary, *The Hub*, furnishes the following receipt for mixing rough stuff:

20 lbs. English filling,
5 lbs. oil lead,
3 pints Japan gold size,
2 quarts American varnish,
½ pint boiled oil,

Mix with a little turpentine, and but a little is required to give it proper consistency.

## DIRECTIONS IN USING WOOD-FILLING.

PUT one coat on bodies, and two on carriage-parts.... To hasten the process, the excess left on the surface of the wood, may be wiped off with a cloth. This may save two or three days' drying....To facilitate the spreading on a cold day, warm just sufficient of the article for present use—no more, lest in cooling, it gets too thick for further use....The filling is not intended for open grained timber, such as ash, &c., without a previous coating of paint.

# Trimming Room.

## A NEW MODE OF FASTENING CUSHIONS.

MR. EDITOR: I send for insertion in your Magazine, a new plan used for fastening cushions to the seat, and supereeding the old fashioned straps, with knob in front.

The plan presented prevents the cushion from moving in any direction, and even checks the thief when taking that which does not belong to him. This cushion can only be loosened by those understanding the *modus operandi.*

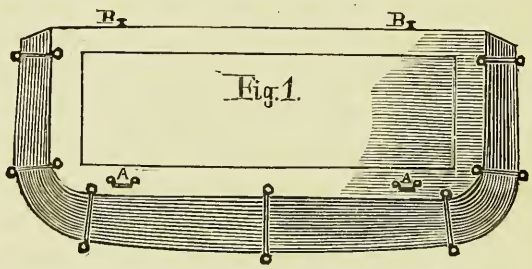


Fig. 1.

A A in Fig. 1 represent two one-inch check-loops screwed to the seat bottom, two inches from the back side and six and a half from the ends. B B represents two knobs, driven into the front of the seat, as in this instance, or may if chosen, be driven on top, hidden by the cushion. C C (Fig. 2) are two hard pieces of leather stitched upon

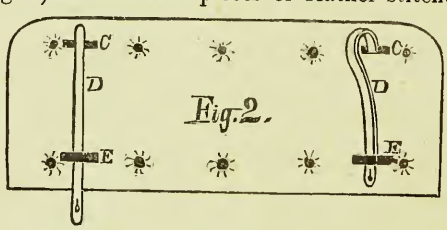


Fig. 2.

the inside, with the ends of the straps, D D, upon the outside of the cushion bottom. E E show two hard leather checks, stitched fast upon the outside of the cushion, through a piece of leather on the inside.

I hope I have been sufficiently explicit to make myself understood as regards the manner in which the straps are secured to the cushions, and also as to how they are fastened on the seat bottom. I will now proceed to fasten the cushions. First, take the ends of the straps, D D, and pass them through the check-loops, A A, then pass the ends through the leather checks, E E, draw the straps through and button the ends on the knobs, B B. This done the cushion will be secure. Should the fall be made

fast to the cushion, then insert a couple of india rubber button-holes in the fall, buttoning the fall over the straps.

"You Know."

### WHO FURNISHES THE POLE STRAPS?

A subscriber in California writes: "Will you please inform us through your Magazine, which should furnish the breast-straps, the carriage-maker who sells a buggy and pole yoke, or the harness-maker who sells the same man a set of harness; or what is the custom in the best shops?"

The custom in New York, has always been—within our recollection—to charge extra for the "pole straps," both among carriage and harness-makers. The straps are not considered as part of the carriage. Sometimes we have furnished the straps by a special agreement when taking an order, not otherwise.

## Editor's Work-bench.

### SPECIAL NOTICE TO OUR FRIENDS.

With the publication of this (June) number, we enter upon our eleventh volume, under encouraging prospects. We have not only the sympathy of the bosses, but likewise many of the journeymen; and hope to still further deserve their support the coming year, by renewed labor in making our work generally acceptable to all classes of the trade. With this object in view we have engaged extra assistance in the special departments, and trust that our long experience and practical knowledge of the wants of carriage-makers will secure for us ample reimbursement of the expenses now entailed upon us.

To still further enhance the usefulness of this work, we are ready to receive proposals from literary men in the trade, for such contributions as will be suitable to our pages, for which, if accepted, we will pay a liberal price. We are fully convinced that there is much latent talent among us, which only needs a little stirring up to bring it to the light. Some of this, though unpolished, may yet contain valuable ideas, which after a little revision, may be sent abroad with great profit to our readers. We hope, then, no one will excuse himself with the declaration that he cannot write, but go to work, *and try what can be done.*

There are but few shops in which, if there is a little exertion used, a club cannot easily be made up. By clubbing, the subscription to this magazine is brought very low. As an encouragement to extra exertion, we offer any individual, who will send us two names with nine dollars, chart number six, as a premium for his trouble; for three names with thirteen dollars, chart number seven, just published. This we have described elsewhere. Send all remittances by postal order, or draft on New York. Country checks, which some are thoughtless enough to mail, only entail on us express charges for collection, and are not otherwise available. You had much better draw the money and send it in a registered letter.

And now, hoping that *all* our old friends will continue their patronage another year, as well as exert themselves to induce their acquaintances to subscribe, we leave the matter in the hands of the public, trusting to hear from it at an early day.

### TOURNEY AT THE GYMNACLIDIUM.

Another of the popular entertainments of the Pearsall Brothers, with the velocipede, took place a few evenings since, at the Apollo Buildings, Broadway and Twenty-eighth Street, New York. The anouucement in the papers promised that an elaborate gold badge, costing $100, should be awarded to the most graceful and expert rider, the ladies present to decide by vote who should have it. This notice had the effect of drawing together a very respectable audience of ladies and gentlemen, who judging from the enthusiasm manifest on the occasion were highly delighted with the performances.

The entertainment began—accompanied by music—with the entrance into the arena of ten expert velocipedists, riding in line around the room, cutting circles, the german role, and other manœuvres extremely picturesque, and decidedly pleasing to all present.

This was followed by the entrance of Miss Pearsall, a sister of the proprietors, who having mounted one of the "Peerless velocipedes" lately invented by B. S. Lawson, of this city, accompanied by a brother, made a variety of graceful circles around the room, to the no small satisfaction of those present. This machine is admirably adapted to ladies' use, and can be ridden in an ordinary walking costume, without exposure of the foot and ankle more than when on promenade. The rider on this machine sits as comfortably as in a carriage, and manages the machine very easily, the motion being controlled with greater facility than ordinary velocipedes. This exercise was succeeded by some expert movement—among them turning in its length between two chairs—on the "Pearsall snake velocipede by one of the Pearsall Brothers. As we have already furnished an engraving of this machine in our last volume, we shall not undertake to describe it here.

Next came the game of tag, which requires much experience in order to succeed. Four machines entered into this sport, some of the movements, the performance of which

furnished much amusement, cannot be well described on paper.

Thus far the programme was duly carried out, but when it reached "the ten entries for the gold badge" it was discovered that Mr. F. A. Carpenter, of the American Velocipede Club, was on the lists, and since no knight present was bold enough to tilt with him, this part had to be omitted, and Mr. Carpenter who had already come upon the floor was called off again. Considerable conversation followed to try and induce the defaulting members to enter, but without success, cowardice prevailing over gallantry. Mr. Carpenter having been awarded the badge without competition, completed the riding singly, in which he exhibited some remarkably dexterous, skillful, and graceful manœuvres. Up to this time, near ten o'clock, the entertainment had been of the most exciting and enjoyable nature, but this hiatus in the sport threw a "wet blanket" over the whole affair, and left nothing more for curiosity to feed upon.

## THE VELOCIPEDE WAR.

SINCE our last report the velocipede contest has taken a very interesting shape. Mr. Calvin Witty, who having purchased the Lallement patent, threatening at the same time to sue everybody who did not comply with his demands, has himself been sued for infringements on the patent taken out by P. W. Mackenzie, of Jersey City, N. J., January 19th, 1864, and since purchased by Stephen W. Smith, of this city. Those, therefore, who have paid Witty a royalty, will now run the risk of having to pay over again to somebody else, and those who have taken our advice and paid nobody, will at least have the satisfaction of knowing—when this war ends—that they will only have to pay once for each machine made.

We have not heard of any case where Witty has sued those he threatened in his circulars. In view of this circumstance, Smith very properly inquires: "If Mr. Witty has a patent he has any confidence in, why does he not do what any sensible man owning a patent would do at once, commence suits against the infringers;" and goes on to say: "I hazard little in saying he will not do it. At any rate, nothing would please me better than for him to attack one of my licenses. Of the considerable number of responsible manufacturers of velocipedes whom I have licensed, all but one held licenses from Mr. Witty, and as, after searching investigation, they have since taken licenses under me, it is an evidence of the opinion of practical men as to the relative value of the patents." Mr. Smith threatens to sue others who infringe on his claims until they "learn he has some rights they are bound to respect."

The position appears to be this: Smith thinks his patent on the "cantering horse," will cover every point of importance in the by-cycle, and having a sufficient stock of pluck and funds, he intends to fight it out on that line, until his claim is admitted—*providing he succeeds.* This, however, is a matter for a jury's decision, which it will be well for our friends to await before parting with their money. Probably, before the matter is settled in the courts, the velocipede fever will be over, and the *plaything* laid aside. If not, and business continues good, the manufacturer will be in funds to settle the damage without much trouble, and save the interest on a large sum besides.

This whole thing has amused us not a little. As soon as the velocipede had become "a fixed fact," generally adopted, Mr. Witty, with visions of greenbacks in his head, starts off for New Haven, to Lallement's assignee, Carroll, and purchasing "all his right and title" to the machine, comes out with a circular, demanding a royalty, under penalty, from every maker of the by-cycle in the country. For a short time the thing proved a mine of coin, but all of a sudden, out comes Smith with his claim—having *lain low* all the time—and stops the *mining* business altogether, except as far as the lawyers are concerned, by citing Witty before the courts to settle for his trespasses. As if this was not a sufficient punishment for his offense, the Hanlon Brothers, too, must follow Smith's *suit*, with another on their part for still further infringements, said to have been made by Witty on their patent. If then, Witty's *prospectising* proves unsuccessful, finally, who will pity him?

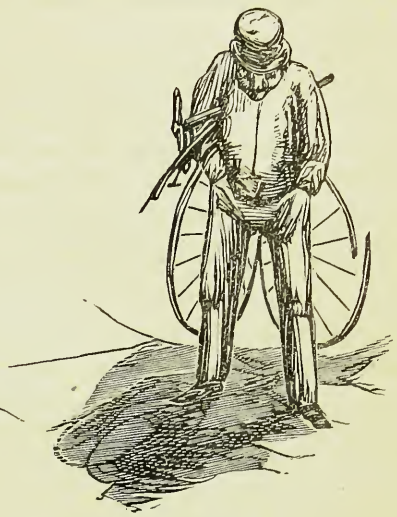
## GOOD SENSE OF THE GERMAN WORKMEN.

THE principles of co-operative industry which has accomplished so much good in Germany by elevating the working classes in the social and political scale, is threatened by a serious inovation, by the introduction of the English system of strikes. Heretofore, German workmen, guided by sound, economical principles, as a rule, have never lent themselves to strikes, which war against capital—their best friend. The co-operative system, as established by Mr. Schultze Delitzch, the apostle of labor reform in Germany, is based upon the correct assumption that the only means of elevating the workmen in the social and political scale is by increased industry and increased economy of wages. Hence, a German workman is never found standing idle for weeks and months in the vain hope of improving his condition. He works for whatever he can get, and shuns idleness as a calamity.

At the late convention of workingmen in Berlin, the company of machinists introduced the question of resorting to strikes as a weapon for the workmen against capital. M. Schultze Delitzch denounced strikes as a weapon that would recoil on those who resort to this means of improving their condition. He showed that the plan of

*Mr. Spannenagle attempts a three mile heat on a velocipede inside of three minutes.*

*Encounter's unexpected difficulties.*



*The result.*

workingmen saving money for the benefit of men on strike, was a preparation for social war, in place of social peace. Strikes, by suspending production, limited the amount of commodities which men could receive for their wages, and under the fallacy of high wages obliged them to perform more work for fewer articles of necessity or comfort.

These views sustained with great ability, were so favorably received that the Workingmen's Congress refused to have anything to do with the strike system. Outside of England strikes have not been popular with the workingmen of Europe, and in England and America there are indications of a sober second thought, which may soon render them obsolete, and tend to the future welfare of the working classes, and the bettering of their condition in life.

## CHART NUMBER SEVEN.

We have just published a very fine new chart, which is not only useful, but will be found highly ornamental in the coach-maker's office. The price, single is $1. Where numbers five, six and seven are all ordered together, the price of the three—all of uniform size—sent by mail, or sold at the office of publication, will be only two dollars and twenty-five cents—over seventy-five designs of vehicles for about three cents apiece!

The latest chart, number seven, contains twenty-four designs, besides an expensive engraving of a "School of Practice on the Velocipede," seven by nine inches, not only useful, but amusing. On this chart are eight no-top and seven top buggies, four Rockaways, one Victoria, and one Phæton, one Landau and several Velocipedes, the whole making the most desirable and fashionable chart yet published. Please forward your orders for it, with the price.

## COVERS AND BOUND VOLUMES.

We have a few Volumes Ten, bound in muslin, gilt, for sale, price $6; when sent by mail, $6.40; and a small stock of covers ready for binding, price 65 cents at the office, or 75 cents when mailed pre-paid. We can yet furnish a few sets of this magazine from the commencement. Price for the ten volumes, cloth, gilt, $40. Sent by express on receipt of price.

These volumes contain about 450 designs of carriages, and over eight hundred inside engravings, added to which there are many pages of letter press of practical matter, much of which possesses *a living interest*, rendering them invaluable as books of reference in the coach-maker's office.

Those who began their subscription in the middle of the last volume, and wish to obtain the back numbers to complete them, can, as advertised last month, get them if wanted, for thirty-five cents each, if applied for at this office in person or by mail.

## LITERARY NOTICE.

The Hub is the expressive name of a lively little monthly sheet, published by Messrs. Valentine & Co., the Boston varnish manufacturers, and devoted to the interests of the carriage and car shops, as well as furnishing a medium for the diffusion of information, relative to the permanent wood-filling, now so generally popular with the trade. The third number (May) is now before us, which, besides containing a variety of useful matter, has a working drawing of the "Saratoga Phaeton." Subscriptions 50 cents a year. Our readers will do well to read the advertisement of this firm in our advertising pages.

HEARSE PLUMES AND TRIMMINGS.—A great drawback among our friends in the country when building hearses has been the difficulty of getting trimmings, &c. This difficulty will now be overcome. Among our advertisements the reader will find the card of Messrs. Shannon, Miller & Crane, a reliable house, having a fine stock of every requisite needed in that line. Any order addressed to them will be filled promptly and faithfully.

## CURRENT PRICES FOR CARRIAGE MATERIALS.

CORRECTED MONTHLY FOR THE NEW YORK COACH-MAKER'S MAGAZINE.
NEW YORK, MAY 18, 1869.

Apron hooks and rings, per gross, $1.25 *a* $1.75
Axle-clips, according to length, per dozen, 50c. to 80c.
Axles, common (long stock), per lb, 8c.
Axles, plain taper, 1 in. and under, $5.50; 1⅛, $6.50; 1¼, $7.50; 1⅜, $9.50; 1½, $10.50.
Do. Swelled taper, 1 in. and under, $7.00; 1⅛, $7.50; 1¼, $8.75; 1⅜, $10.75; 1½, $13.00.
Do. Half pat., 1 in. $10; 1⅛, $11; 1¼, $13; 1⅜, $15.50; 1½, $18.50.
Do. do. Homogeneous steel, ⅞ in., $11.00; ¾, $11; ⅞, $12.00; 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. 30 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, 18 *a* 23c.
Burlap, per yard, 14 *a* 16c.
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, $2.75 *a* $4; oil-cloth, 45 *a* 70c.
Castings, malleable iron, per lb, 15c.
Chapman rubber, $2.50 *a* $3.00, 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, 40c.; 6-4, 75c.
Enameled Drills, 48 in., 55c.; 5-4, 50c.
Do. Ducks, 50 in., 75c.; 5–4, 70c.; 6–4, 80c.

☞ No quotations for other enameled goods.

Felloe plates, wrought, per lb., all sizes, 20c.
Felloes (Rims), $1.50 *a* $3.
Fifth-wheels, wrought, $1.50 *a* $2.00.
Fringes, festoon, per piece, $2; narrow, per yard, 18c.

☞ For a buggy-top two pieces are required, and sometimes three.

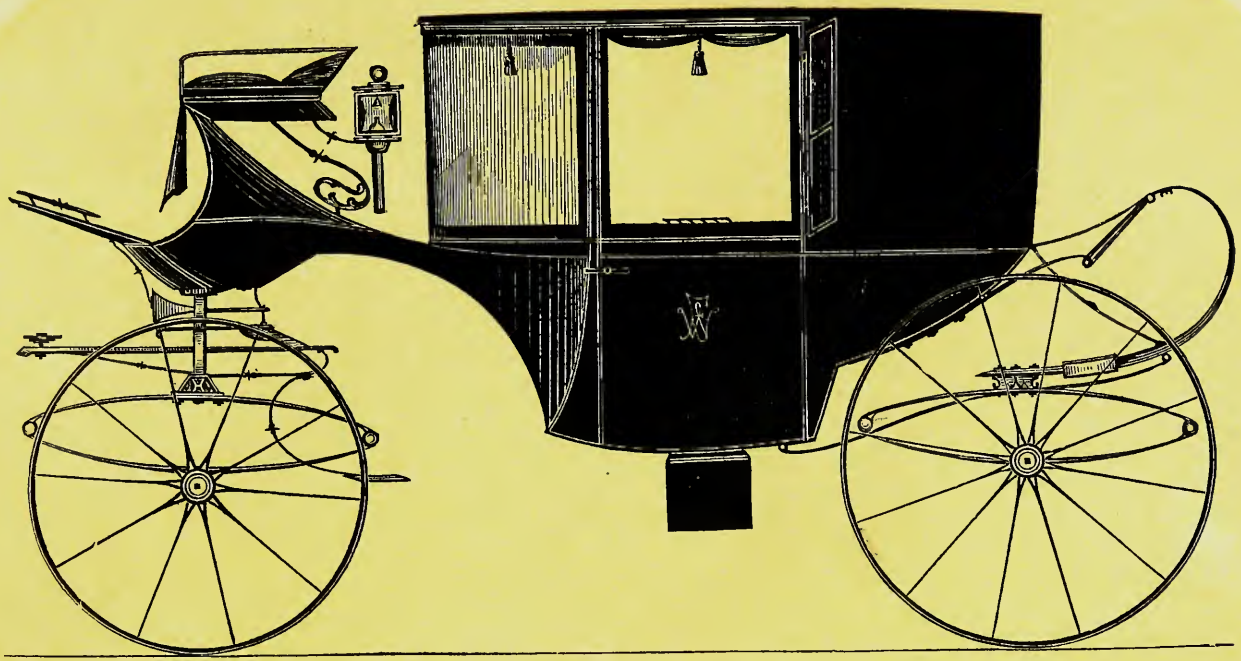
Do. silk bullion, per yard, 50c. *a* $1.
Do. worsted bullion, 4 in., 35c.
Do. worsted carpet, per yard, 8c. *a* 15c.
Frogs, 50c. *a* $1 per pair.
Glue, per lb, 25c. *a* 30c.
Hair, picked, per lb, 40c. to 65c.
Hubs, light, mortised, $1.20; unmortised, $1. Coach, mortised, $2.
Japan, per gal., $2.
Knobs, English, $1.40 *a* $1.50 per gross.
Laces, broad, silk, per yard, 60 *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, 28c.; railing do. 26c.; soft dash, No. 1, 15c. *a* 16c.; do., No. 2, 14c.; split do., 15c. *a* 17c.; No. 1, top, 27c.; enameled top, No. 1, 27c., do., No. 2, 25c.; enameled trimming, 25c.; harness, per lb., 50c.; flap, per foot, 25c.
Moss, per bale, 8c. *a* 15c.
Mouldings, plated, per foot, ¼ in. 14c.; ⅜, 16c. *a* 20c.; ½, lead, door, per piece, 40c.
Nails, lining, silver, per paper, 7c.; ivory, per gross, 50c.
Name-plates. (See Advertisement.)
Oils, boiled, per gal., $1.25.
Paints. White lead, extra, $14.00, pure, $15.00 per 100 lbs.; Eng. pat. black, 30c.
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 30 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, 16c.; bright, 18c.; English (tempered), 21c.; 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; 1⅝ in. 10c. each. 10 off cash.

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

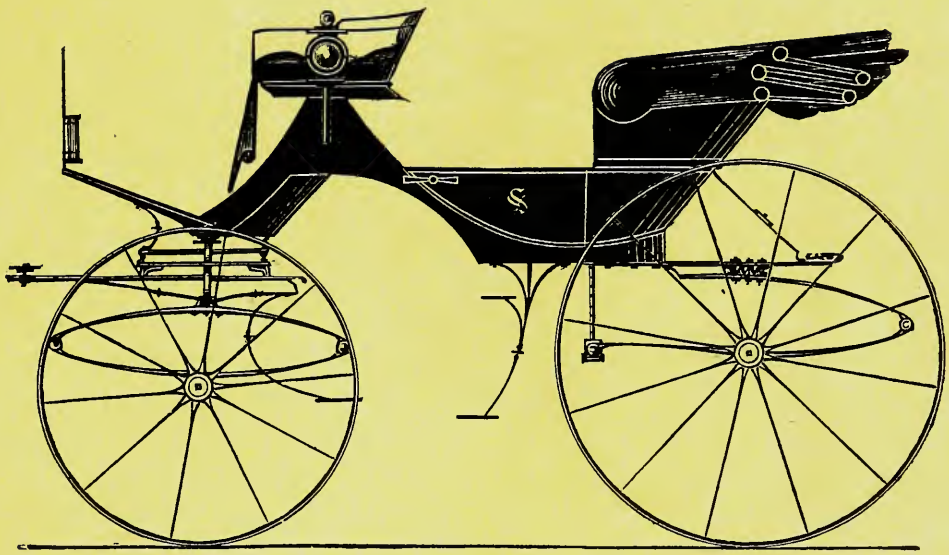
Steel, Farist Steel Co.'s Homogeneous Tire (net prices); 1 x 3–16, and 1 x 1-4, 20 cts.; 7-8 x 1-8 and 7-8 x 3-16, 23 cts.; 3-4 x 1-8, 25 cts.; 3-4 x 1-16, 28 cts.
Steel Tire—best Bessemer—net prices: 1-4 x 1 1-8, 15c.; 1-4 x 1, 15c.; 3-16 x 1 1-8, 16c.; 3-16 x 1, 16c.; 3-16 x 7-8, 17c.; 3-16 x 3-4, 17; 1-8 x 7-8, 20; 1-8 x 34; 1-16 x. 3-4, 23.
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, gold.
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.c. Do. ball, $1.
Turned collars, $1.25 *a* $3 per doz.
Turpentine, pr gl., 60c
Twine, tufting, pr ball, 50c.; per lb, 85 *a* $1.
Varnishes (Amer.), crown coach-body, $5.00; nonpareil, $5.25.
Do. English, $6.25 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.



FULL CLARENCÉ.—½ IN. SCALE.

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

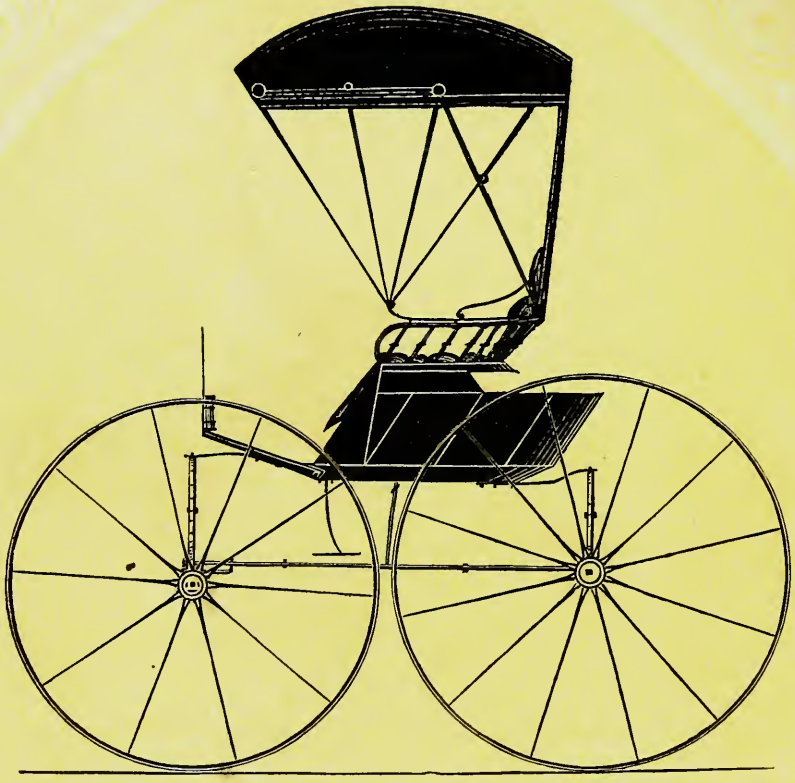
*Explained on page 9.*



LIGHT PHAETON.—½ IN. SCALE.

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

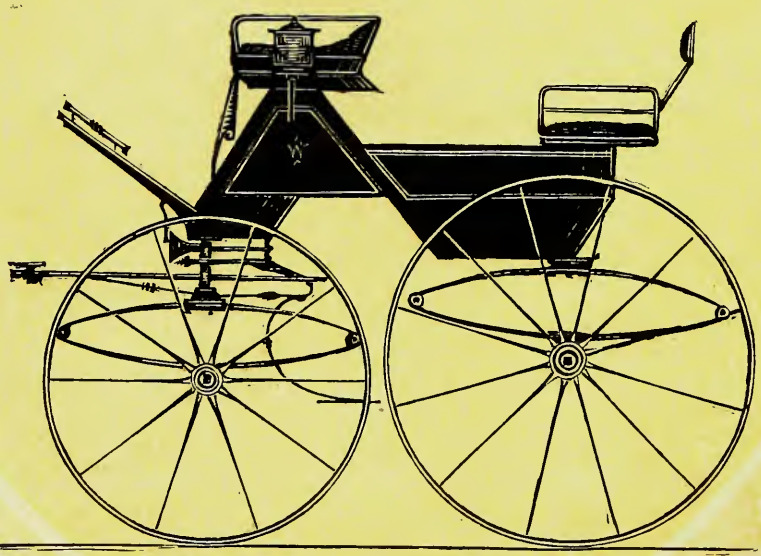
*Explained on page 9.*



BRACKET FRONT COAL-BOX BUGGY.—$\frac{5}{8}$ IN. SCALE.

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

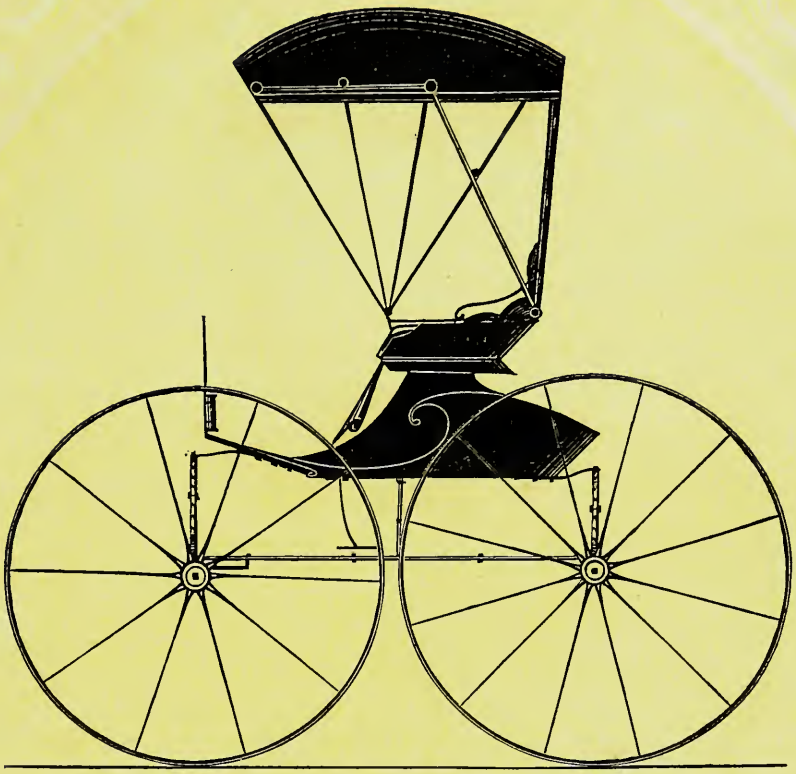
*Explained on page 9.*



DOG-CART PHAETON.—$\frac{1}{2}$ IN. SCALE.

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

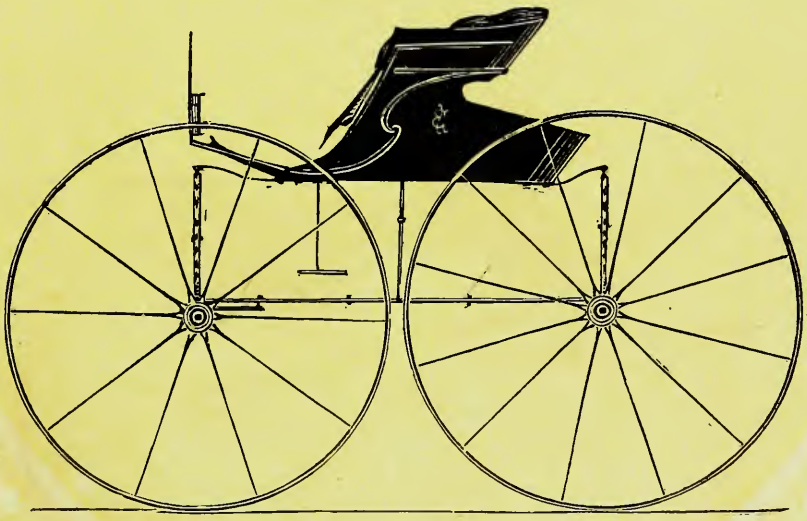
*Explained on page 9.*



SCROLL COAL-BOX BUGGY.—½ IN. SCALE.

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

*Explained on page* 10.



COAL-BOX ROAD BUGGY.—½ IN. SCALE.

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

*Explained on page* 10.