KIMBALL PATENT JUMP-SEAT. — ¼ in. scale.
Exhibited at the American Institute Fair, by R. M. Stivers.
Explained on page 122.
CIRCULAR FRONT, THREE-FOURTHS COUPE. — ¾ in. scale.

EXHIBITED AT THE AMERICAN INSTITUTE FAIR, 1869, BY T. E. BALDWIN & CO.

Engraved expressly for the New York Coachmaker's Magazine.

Explained on page 124.
ONE-HALF SPRING NO-TOP WAGON. — $\frac{1}{2}$ IN. SCALE.
Exhibited at the American Institute Fair, by Coe & Merritt.

HAMBLETONIAN ROAD WAGON. — $\frac{3}{4}$ IN. SCALE.
Exhibited at the American Institute Fair, by R. M. Stivers.
Explained on page 122.
ENGLISH CARRIAGES.

BY LEIGH HUNT.

[Continued from the December Magazine.]

Of the hackney-coach we cannot make as short work as many persons like to make of it in reality. Perhaps it is partly by sense of the contempt it undergoes, which induces us to endeavor to make the best of it. But it has its merits, as we shall show presently.

One of the greatest tips to a sense of merit in other things is a consciousness of one's own wants. Do you despise a hackney-coach? Get tired; get old; get young again. Lay down in your carriage, or make it less uneasily too easy. Have to stand up half an hour, out of a storm, under a gateway. Be ill, and wish to visit a friend who is worse. Fall in love, and want to sit next your mistress. Or, if all this will not do, fall in a cellar.

Ben Johnson, in a fit of indignation at the niggardliness of James the First, exclaimed, "He despises me, I suppose, because I live in an alley:—tell him his soul lives in an alley." We think we see a hackney-coach moved out of its ordinary patience, and hear it say, "You there, who sit looking so scornfully at me out of your carriage, are yourself the thing you take me for. Your understanding is a hackney-coach. It is lumbering, rickety, and at a stand. Where it moves, it is drawn by things like itself. It is at once the most stationary and the most servile of common-places. And when a good thing is put into it, it does not know it. But it is difficult to imagine a hackney-coach under so irritable an aspect. Hogarth has drawn a set of hats or wigs with countenances of their own. We have noticed the same thing in the faces of houses; and it sometimes gets in one's way in a landscape-painting, with the outlines of the rocks and trees. A friend tells us that the hackney-coach has its countenance, with gesticulations besides; and now he has pointed it out, we can easily fancy it. Some of them look chucked under the chin, some nodding, some coming at you sideways. We shall never find it easy, however, to fancy the irritable aspect above mentioned. A hackney-coach always appeared to us the most quiescent of moveables. Its horses and it, slumbering on a stand, are an emblem of all the patience in creation, animate and inanimate. The submission with which the coach takes every variety of the weather, dust, rain, and wind, never moving but when some eddying blast makes its old body shiver, is only surpassed by the vital patience of the horses. Can any thing better illustrate the poet's line about

"Years that bring the philosophic mind,"

than the still-hung head, the dim, indifferent eye, the dragged and blunt-cornered mouth, and the gaunt imbecility of body dropping its weight on three tired legs in order to give repose to the lame one? When it has blinkers on, they seem to be shutting up its eyes for death, like the windows of a house. Fatigue and the habit of suffering have become as natural to the creature as the bit to its mouth. Once in half an hour it moves the position of its leg, or shakes its drooping ears. The whip makes it go, more from habit than from pain. Its coat has become almost callous to minor stings. One blind and staggering fly in autumn might come to die against its cheek.

Of a pair of hackney-coach horses, one so much resembles the other that it seems unnecessary for them to compare notes. They have that within them which is beyond the comparative. They no longer bend their heads toward each other as they go. They stand together as if unconscious of one another's company. But they are not. An old horse misses his companion, like an old man. The presence of an associate, who has gone through pain and suffering with us, need not say anything. It is talk, and memory, and everything. Something of this it may be to our old friends in harness. What are they thinking of while they stand motionless in the rain? Do they remember? Do they dream? Do they still, unperplexed as their old blood is by too many foods, receive a pleasure from the elements; a dull refreshment from the air and sun? Have they yet a palate for the hay which they pull so feebly? or for the rarer grain, which induces them to perform their only voluntary gesture of any vivacity, and toss up the bags that are fastened on their mouths, to get at its shallow feast?

If the old horse were gifted with memory (and who shall say he is not, in one thing as well as another?) it might be at once the most melancholy and pleasantest faculty he has; for the commonest hack has probably been a hunter or racer; has had his days of luster and enjoyment; has darted along the course, and scoured the pasture; has carried his master proudly, or his lady gently; has pranced, has galloped, has neighed aloud, has
dared, has forded, has spurned at mastery, has grasped it and made it proud, has rejoiced the eye, has been crowded to as an actor, has been all instinct with life and quickness, has had his very fear admired as courage, and been set upon by valor as its chosen seat.

We wish the hackney-coachman were as interesting a machine as either his coach or horses; but it must be owned that of all the driving species he is the least agreeable specimen. This is partly to be attributed to the life which has most probably put him into his situation; partly to his want of outside passengers to cultivate his gentility; and partly to the disputable nature of his fare, which always leads him to being lying and cheating. The waterman of the stand, who beats him in sordineness of appearance, is more respectable. He is less of a vagabond, and cannot cheat you. Nor is the hackney-coachman only disagreeable in himself, but, like Falstaff reversed, the cause of disagreeableness in others; for he sets people upon disputing with him in pettiness and ill-temper. He induces the mercenary to be violent, and the violent to seem mercenary. A man whom you took for a pleasant, laughing fellow, shall all of a sudden put on an irritable look of calculation, and vow that he will be charged with a constable rather than pay the sixpence. Even fair woman shall waive her all-conquering softness, and sound a shrill trumpet in reprobation of the extortionate charioteer, whom, if she were a man, she says, she would expose. Being a woman, then, let her not expose herself. Oh, but it is intolerable to be imposed upon! Let the lady, then, get a pocket-book, if she must, with the hackney-coachman fares in it; or a pain in the legs rather than the temper; or, above all, let her get wiser, and have an understanding that can dispense with the good opinion of the hackney-coachman. Does she think that her rosy lips were made to grow pale about two-and-sixpence; or that the expression of them will ever be like her cousin Fanny's, if she goes on?

The stage-coachman likes the boys on the road, because he knows they admire him. The hackney-coachman knows that they cannot admire him, and that they can get up behind his coach, which makes him very savage. The cry of "Cut behind!" from the maliciousurchins on the pavement wounds at once his self-love and his interest. He would not mind overloading his master's horses for another sixpence, but to do it for nothing is what shocks his humanity. He hates the boy for imposing upon him, and the boys for reminding him that he has been imposed upon; and he would willingly twine the cheeks of all nine. The cut of his whip over the coach is malignant. He has a constant eye to the road behind. He has also an eye to what may be left in the coach. He will undertake to search the straw for you, and miss the half-crown on purpose. He speculates on what he may get above his fare, according to your manners or company; and knows how much to ask for driving faster or slower than usual. He does not like wet weather so much as people suppose; for he says it rots both his horses and harness, and he takes parties out of town when the weather is fine, which produces good payments in a lump. Lovers, late supper-eaters, and girls going home from boarding-school, are his best pay. He has a rascally air of remonstrance when you dispute half the over-charge; and, according to the temper he is in, begs you to consider his bread, hopes you will not make such a fuss about a trifle, or tell you you may take his number, or sit in the coach all night.

A great number of ridiculous adventures must have taken place, in which hackney-coaches were concerned. The story of the celebrated harlequin, Lunn, who secretly pitched himself out of one into a tavern window, and, when the coachman was about to submit to the loss of his fare, astonished him by calling out again from the inside, is too well-known for repetition. There is one of Swift, not perhaps so common. He was going, one dark evening, to dine with some great man, and was accompanied by some other clergymen, to whom he gave their cue. They were all in their canonicals. When they arrive at the house, the coachman opens the door, and lets down the steps. Down steps the Dean very reverend, in his black robes; after him comes another personage, equally black and dignified; then another; then a fourth. The coachman, who recollects taking up no greater number, is about to put up the steps, when another clergyman descends. After giving way to this other he proceeds with great confidence to toss them up, when lo! another comes. Well, there cannot, he thinks, be more than six. He is mistaken. Down comes a seventh; then an eighth; then a ninth; all with decent intervals; the coach, in the mean time, rocking as if it were giving birth to so many demons. The coachman can conclude no less. He cries out, "The devil! the devil!" and is preparing to run away, when they all burst into laughter. They had gone round as they descended, and got in at the other door.

We remember in our boyhood an edifying comment on the proverb of "all is not gold that glistens." The spectacle made such an impression upon us that we recollect the very spot, which was at the corner of a road in the way from Westminster to Kennington, near a stone-mason's. It was a severe winter, and we were out on a holiday, thinking, perhaps, of the gallant hardships to which the ancient soldiers accustomed themselves, when we suddenly beheld a group of hackney-coachmen, not, as Spencer says of his witch,

"Busy, as seemed, about some wicked gin," but pledging each other in what appeared to us to be little glasses of cold water. What temperament! thought we. What extraordinary and noble content! What more than Roman simplicity! Here are a set of poor Englishmen, of the homeliest order, in the very depth of winter, quenching their patient and honorable thirst with mediooms of cold water! O true virtue and courage! O, sight worthy of the Timoleons and Epaminondases! We know not how long we remained in this error; but the first time we recognized the white devil for what it was—the first time we saw through the crystal purity of its appearance—was a great blow to us. We did not know what the drinkers went through; and this reminds us that we have omitted one great redemption of the hackney-coachman's character—his being at the mercy of all chances and weathers. Other drivers have their settled hours and pay. He only is at the mercy of every call and every casualty; he only is dragged, without notice, like the damned in Milton, into the extremities of wet and cold, from his ale-house fire to the freezing rain; he only must go anywhere, at what hour and to whatever place you choose, his old rheumatic limbs shaking under his weight of rags, and the snow and sleet beating into his puckered face, through streets which the wind scours like a channel.
THRIC BUILED.

The writer assures us that the following incident is a true one, and that the description of the sleigh is correct in every particular. This story illustrates and verifies the proverb that "the third time never fails."—Ed.

Dear Editor: While reading your description of the sleighs on exhibition at the American Institute, it occurred to me that a few remarks, on one that was not on exhibition there, might be interesting to you, if you wish to keep fully posted on the different styles in use in various sections of the country, as I believe you have expressed.

A few days since I was startled by a severe pounding on the varnish-room door, and cries of "Hello, Mister! I say, Boss! come out here!"

I came out in a hurry, and was confronted by the author of the noise with, "I say, yeou boss, got a sleigh to paint; heered you could du it up pretty slick, 'cause yeou learnt how in York, so I've cum a good ways to git yeou to du it. Want ya to go and look at it."

I went and looked at it, and it needed but to be seen to be appreciated. The "style of 1816," published in The Hub supplement, could not approach it. To say it was heavy would be no name for the weight. It was built originally for one horse, but would weigh as it stood from 375 to 400 pounds.

My friend said: "I made that 'ere cutter myself."

I could not dispute it. The back panel was nearly one inch pine board, and an attempt to bend it had resulted in several cracks nearly across the back, which had been caulked in a manner similar to the seams in a ship's deck; that is, wedged full of oakum and tarred over. How is that for hard stopper nail holes in the job; in fact, more holes than nails.

"Waal, yeas, there du seem to be a few mor'n wanted. But yeou see, Mister, when I made that sleigh I jest gittin over the measles and cud'dent go eout door, so I built her up garrit, and when she was dun it wud'dent go down stairs. So I pulled her apart and, sot her up in the kitchen again, and then, darn it, she wud'dent go eout the kitchen door, so blamed ef I did'ent have to do out the door, so I sent her up in the yard, and—blast ye, wat yer laffin at?"

"Nothing but to see that man's hat blow off."

"Beg yer pardon, thought you was laffin at me. I think its a pretty good un, seeing I tore her to pieces twice, and had the measles when I was doin it."

I agreed with him, but dared not question him on the trimming, which consisted of a piece of unbleached muslin, drawn over the back seat and stuffed with hay, tacked on to the back with carpet tacks, without any binding or hemming, and the hay sticking through between the tacks. The whole was primed with fish oil and whiting, which resembled the P. W. F. in one point only, being decidedly tacky.

The painting, when finished by us to his order, was a beautiful brown, composed of lamp black and Venetian red, with a somewhat irregular and very heavy stripe of chrome yellow on the body. A splendid buff of yellow ochre and white lead was put on the gear, with meandering black stripe ornaments. Moreover, there were two goats on the side panels, eagles on back, besides pastoral scene on dash-board, scrolls, &c.—put on, in an indescrib-
beauty is stiff to the eye, monotonous to the car, and barren to the mind.

In the mechanical arts, on the contrary, as in our furniture, utensils, carriages, machinery, etc., regularity seems to be the true principle of form. At least, it is the tendency of the taste of our time, and we think the tendency is a good one. At the age of Louis the Fourteenth (1643–1715), who conquered the whole civilized world with his taste, if not with his sword, the old-fashioned regularity, with its straight lines and plain circles, disappeared, and gave way to wide sweeps and all sorts of fanciful curves. Tables were supported by a frame of hanging garlands, and by legs of drooping wreaths, swelling with fantastic foliage, and—to consummate the absurdity—these often ended in an eagle's claw or a lion's paw. The ceilings were studded with grapes, lianthus leaves, mermaids, and bouncing angels with fish-tails and trumpets. Door-posts, window-frames, and all straight lines were curved and bent, and the corners were stuffed with clustering ornaments. It was a singular taste. At Versailles, the trees in the garden were constrained into architectural forms, while the stone-walls of the palaces were forced into the shapes of organic nature. The trees were cut in the form of pyramids, obelisks, minarets, and arcades, and the walls abounded, from the roof to the ground, with fruits and flowers and foliage combined in wreaths and garlands. And so extended was this taste that the butter-plate on the farmer's breakfast-table was often cut as a vine-leaf and painted green, while the butter was cast in the form of a cluster of grapes. Our age has turned away from this error. We laugh at all superfluous, meaningless curves. We will have a simple thing simply done, because it is the only way to do it well. In our furniture, utensils, carriages, machinery, etc., we are returning to the straight lines, the equal angles, the plain circles, and to the general forms of regularity.

Some of our readers may perhaps think that this statement is a little too hasty as far as carriage-building is concerned. It is apparent that, in the carriages of our time, straight lines are greatly outnumbered by the curved ones, and though there are several sorts of carriages, for instance, the dog-cart and the char-a-bancs, whose bodies are made exclusively of straight lines, these are generally built so on account of special purposes. Yet, take a series of drawings of carriages, extending from the middle of the seventeenth century, when coaches came first into general use, up to our own time, and a glance will show that there is a tendency toward the straight line prevailing throughout the whole history of carriage-building. The development of the art of carriage-building, may be called a struggle to get rid of the curves and to reach the straight line. Compare the two species of carriages latest invented, namely, the buggy and the six-seat rockaway, with the two that were invented next previously, namely, the berlin and the landau; or look at the branching-out of some sub-species of carriages, for instance, the phaeton proper, into the park phaeton, the excelsior park phaeton, the Beaufort phaeton, the Phoenix phaeton, and all other such unmentionables; and it will become evident that the straight line is growing upon the taste of our time, just as it is an individual idea with us that the "carriage of the future" will have as few curves as possible, if any at all.

The forms, however, which are generally used in the mechanical arts are not strictly regular, but belong to two groups of forms intermediate between regularity and symmetry. Regularity is sameness. Symmetry is the same on both sides of some other thing. When all parts are equal and all relations are the same, they are regular. When two parts are equal, and placed in the same relation to an interpolated, different, third part, the whole is symmetrical. But between regularity and symmetry are two intermediate groups of forms, which in the English language have received their names, uniform symmetry and respective symmetry, from that order to which they are tending, while in other languages, they are named after that point from which they started, namely, regularity in repetition and regularity in opposition. To these two groups belong the forms which are generally used in the mechanical arts.

Respective symmetry, corresponding with regularity in opposition, has advanced beyond regularity proper, because only the opposite sides are equal, yet still it does not reach symmetry proper, for it lacks the different third part, which should be interposed. It is the ground-form in the organic sphere. Leaves are respectively symmetrical, and some trees, as the pine, the linden, and the beech. The human and the animal body are respectively symmetrical when seen face to face or from behind; but when seen sidewise, their forms belong to another class. And in the same manner almost all the products of mechanical art are respectively symmetrical, as the chair, the table, the spoon, most vessels, the carriage, etc. Even a new carriage would look old and worn out or broken down if inaccurately hung, so that its respective symmetry were infringed upon. And no one would buy a carriage whose curves to the right and left were apparently unequal. It has sometimes occurred to the carriage-makers that it would be an improvement to introduce the respective symmetry also in the side-view of the carriage, and to this end the seat for the footman was arranged in exact symmetry with the seat of the driver, so that it was impossible to tell, when the carriage was unharnessed, which was the front of it and which the back. But this arrangement is an error. As the common carriage is intended to be drawn only from one end, it should be planned so that this purpose is shown. Its side-view has nothing to do with regularity or symmetry. Every irregularity is admissible if the form is expressive of the true design, namely, that the carriage shall be drawn from one end only.

Uniform symmetry, or regularity in repetitions, is produced by repeating the same ordonnance throughout the whole. This form is very seldom used except by the architect. In nature some caterpillars are moulded in this shape, and they are very ugly. In architecture, however, this form is often very pleasant, and it is often the only one which is proper; for instance, in the building of a warehouse, a casern, a hospital, or an insane asylum. A. T. Stewart's establishment in this city, between Ninth and Tenth streets, is built on this principle.

Uniform symmetry is, like symmetry proper, of very small consequence to the coach-maker. Its use in the department of vehicles is confined exclusively to the building of railway cars, and nothing shows so well the difference between car-building and coach-building as the difference between the forms which are applied in these two arts. The car-builder uses uniform symmetry and sometimes symmetry proper, and uses these and nothing else...
in the side-view of his workmanship, while the coachmaker builds a quite irregular side, with a respectively symmetrical front.

Upon the next group of forms we have treated in a former article, entitled “The Golden Rule of Proportion.” We therefore pass over it now, and close our article with some remarks on harmony. Proportionality is often called harmony, and not without some propriety, as good proportions always make the parts of a whole harmonious. Still, it is better to call this harmony of the parts proportionality, as good proportion is the true originator, and to thus limit the word harmony to its proper sense, namely, correlation between idea and form.

That this is the true significature of the word is easily understood, and we are sure that the reason for its being overlooked so commonly can be only a certain indifference and carelessness of imagination very prevalent now-a-days. We have seen, for instance, a house built of white marble and decorated with pillars and columns and a whole swarm of sweeping ornaments from the style of the later renaissance. It bears exactly the expression of the refinement and voluptuousness of a courtesan’s life in the age of Louis XIV., and conveys the idea that some young marquis, with his still younger marquise, had built the house in which to give splendid dinner-parties, elegant balls, and receptions.* But when this house contains nothing but offices and desk-rooms, and has all its windows crowded with advertisements of life-insurance and railway-ticket offices, is not the whole art of the architect a mockery? Or when a public auctioneering house is built in imitation of the famous Theseus’ temple at Athens, with doric columns and large flights of steps, is not that a mockery? Of course it is. The highest form is that one which expresses the idea exactly—nothing more and nothing less. The first constituent of beauty is that the purpose, the use, the idea, be clearly yet gracefully apparent in the form, and this correlation between inward and outward is the true harmony.

We have often had occasion to mention this as the true principle of carriage-building. Yet a good word cannot be spoken too often, and, in concluding our remarks on forms, we repeat once more the leading thought which we have in this connection, namely: the form of a carriage should be determined solely by its purpose, and the beauty of its form should consist in making the purpose gracefully apparent.

OAKS AND ELMS.

There is a mother-idea in each particular kind of tree, which, if well marked, is probably embodied in the poetry of every language. Take the oak, for instance, and we find it always standing as a type of strength and endurance. I wonder if you ever thought of the single mark of supremacy which distinguishes this tree from all our other forest-trees! All the rest of them shirk the work of resisting gravity; the oak alone defies it. It chooses the horizontal direction for its limbs, and then stretches them out fifty or sixty feet, so that the strain may be mighty enough to be worth resisting. You will find, that, in passing from the extreme downward droops of the branches of the weeping-willow to the extreme upward inclination of those of the poplar, they sweep nearly half a circle. At 90° the oak stops short; to start upward another degree would mark infirmity of purpose; to bend downward, weakness of organization. The American elm betrays something of both; yet, sometimes, as we shall see, puts on a certain resemblance to its sturdier neighbor.

I must tell you about some of my tree-wives. I was at one period of my life much devoted to the young lady population of Rhode Island, a small but delightful State in the neighborhood of Pawtucket. The number of inhabitants being not very large, I had leisure, during my visits to the Providence Plantations, to inspect the face of the country in the intervals of more fascinating studies of physiognomy. I heard some talk of a great elm a short distance from the locality just mentioned. “Let us see the great elm”—I said, and proceeded to find it,—knowing that it was on a certain farm in a place called Johnston, if I remember rightly. I shall never forget my ride and my introduction to the great Johnston elm.

I always tremble for a celebrated tree when I approach it for the first time. Provincialism has no scale of excellence in man or vegetable; it never knows a first-rate article of either kind when it has it, and is constantly taking second and third-rate one’s for Nature’s best. I have often fancied this tree was afraid of me, and that a sort of shiver came of it, as over a betrothed maiden when she first stands before the unknown to whom she has been plighted. Before the measuring-tape the proudest tree of them all quails and shrinks into itself. All those stories of four or five men stretching their arms around it and not touching each other’s fingers, of one’s pacing the shadow at noon and making it so many hundred feet, die upon its leafy lips in the presence of the awful ribbon which has strangled so many false pretensions.

As I rode along the pleasant way, watching eagerly for the object of my journey, the rounded tops of the elms rose from time to time at the roadside. Whenever one looked taller and fuller than the rest, I asked myself,—“Is this it?” But as I drew nearer, their size grew smaller,—or it proved, perhaps, that two standing in a line had looked like one, and so deceived me. At last, all at once, when I was not thinking of it,—I declare to you it makes my flesh creep when I think of it now,—all at once I saw a great, green cloud swelling in the horizon, so vast, so symmetrical, of such Olympian majesty and imperial supremacy among the lesser forest-growths, that my heart stopped short, then jumped at my ribs as a hunter springs at a five-barred gate, and I felt all through me, without need of uttering the words—“Is this it?”

You will find this tree described, with many others, in the excellent Report upon the Trees and Shrubs of Massachusetts. The author has given my friend the Professor credit for some of his measurements, but measured this tree himself, carefully. It is a grand elm for size of trunk, spread of limbs, and muscular development,—one of the first, perhaps the first, of the first-class of New England elms.

What makes a first-class elm? Why, size, in the first place and chiefly. Anything over twenty feet of clear girth, five feet above the ground, and with a spread of branches a hundred feet across, may claim that title, according to my scale. All of them, with the questionable exception of the Springfield tree above referred to, stop, so far as my experience goes, at about twenty-two or
twenty-three feet of girth and a hundred and twenty of spread.

Elms of the second class, generally ranging from fourteen to eighteen feet, are comparatively common.

O. W. HOLMES.

THE STATE Coach of George the Third, built in the year 1762, cost £7,662, divided on his bill into the following items. The charge for carving will probably attract the particular notice of those of our readers who are wood workers:

To the Coach-maker was paid £ 1,763 15
" " Carver, " 2,500
" " Gilder, " 933 14
" " Painter, " 315
" " Lace-man, " 737 10 7
" " Chaser, " 665 4 6
" " Harness-maker, " 385 15
" " Mercer, " 202 5 10
" " Bit-maker, " 99 9 6
" " Milliner, " 31 3 4
" " Saddler, " 10 6 6
" " Woolen-draper, " 4 2 6
" " Cover-maker, " 3 9 6

Total, 7,662 4 3$

Smithy Shop.

SAW-DUST IN THE SMITH-SHOP.

Saw-dust is a grease neutralizer and annihilator and a file saver.

No well regulated smith shop should be without a well filled box of saw-dust at each drilling machine. The box should be large enough to place the rim, when it is drilled, inside.

Give the iron a thorough rubbing with the saw-dust, which, from its great power of absorption, will remove all the grease or oil, or so nearly so that but a light rubbing with waste is necessary to make the iron quite clean. This rule applies to the screwing and nutting of clips and bolts, or to other purposes where oil is used about iron.

Oak or ash saw-dust is the best. Pine saw-dust has greater absorptive power, but leaves a resinous surface on the iron that is more destructive to the file than iron. My average weekly consumption for twenty-five files, using eight drills, is about three bushels per week.

New York, December, 1870.

J. L. H.

USES OF THE BESSEMER METAL.

In this country but little use has been made of the Bessemer metal, save for the manufacture of rails, while in Europe it has been successfully applied to many other purposes, among which we may mention boiler-making, and the construction of many running parts of machinery.

It has generally replaced wrought-iron, and not steel. The use of the misnomer steel has doubtless been the reason that this metal has not been applied to many purposes for which it appears to be better adapted than either cast-iron, wrought-iron, or steel. Cast-iron and crucible steel, though they are harder than wrought-iron, possess less tenacity; hence, for constructions intended to resist jars or strains, neither of these metals has of late years found any extended use. The only other metal former known possessed of sufficient tenacity for such purposes was wrought-iron, which, in the course of time, has gained for itself so high a reputation that much prejudice has to be overcome before people will use any thing else. In fact, iron-men are noted for their conservatism, and we readily admit that they ought to be conservative, when we consider the vast interests committed to their charge, often involving numerous human lives, as well as large amounts of money.

By the pneumatic or Bessemer process it is doubtless possible to make a metal resembling steel so closely that for many purposes it could be substituted for it. But in practice we find that what is actually made differs very widely from steel, and comes in compact rather with wrought-iron. Let us keep this point fully in view, while we compare the relative merits of wrought-iron and Bessemer metal. Every body knows that it is impossible to handle very large masses of iron at once in a puddling furnace; and hence, if we want a heavy piece of wrought-iron, it is necessary to weld together two or more blooms in order to get it. It is also notorious that blooms are too likely to contain slag and other impurities, to be directly used in the manufacture of wrought-iron articles. They must first be subjected to the process of hammering, drawing out, and welding.

However carefully the process of welding is conducted, there is always a possibility of leaving the welds imperfect, and hence the product, though externally perfect, is subject to flaws in the interior, which render it liable to fracture under strains which it ought to resist with ease. Bessemer metal, however, can be cast in ingots of five tons each, free from slag, and capable of being used directly for the manufacture of heavy articles. In this case, instead of flaws from imperfect welding, such as occur in wrought-iron, we are liable to find defects in the form of bubbles. Practically, it has been found that bubbles are much more frequent close to the periphery of the ingot than nearer the center, so that the external appearance of a Bessemer ingot furnishes us with a correct idea of its internal condition. It is, moreover, asserted that when bubbles occur in the interior, they are free from rust, and present clean metallic surfaces, which weld together perfectly when the ingot comes to be drawn out.

A correspondent of the Maschinen Constructeur says that he has seen Bessemer metal used with great advantage for making the piston-rods of steam hammers which were used for hammering steel. Wrought-iron pistons and piston-rods of the same dimensions were used up in a short time, by the change of the iron from a fibrous to a granular structure, in consequence of the repeated concussions to which they were subjected. Bessemer metal has also been used for locomotive axles with excellent results. Its use for this purpose, as well as for boiler plates, is continually increasing in Europe, though we have not yet heard of its application to either purpose in this country. The fact that it resists the oxidizing effects of a flame much better than wrought-iron is a strong argument for its use in boilers. It is only about thirteen years since the first introduction of Bessemer metal, and though its adoption for rail-making has been contested, step by
step, until it proved itself far superior to other iron, it is now almost universally commended for that purpose.

It is scarcely to be expected, however, that because its merits for rail-making has been recognized, its other uses will meet with no opposition. Boiler-makers, for example, who have been all their lives accustomed to the employment of wrought-iron, will not discontinue to use it at once—though in the long run a superior material is certain of adoption. A large number of the boiler explosions of which we hear so often are doubtless due to the partial destruction of the iron, by oxidation, in boilers which were originally equal to the task imposed upon them. This fact was fully proved in England, by evidence recently given before the committee appointed by Parliament to inquire into the cause of the alarming number of boiler explosions occurring annually in that country, and to suggest remedies. The sulphur contained in the soft coal, which is used almost universally in England, may cause the destruction of the iron to take place more rapidly there than it would in this country, where so much anthracite and wood are used. Still, this destruction is, in a great measure, due to the oxidizing effects of the flame, which Bessemer metal resists much better than wrought-iron. So that the conclusions of the English committee are almost equally applicable to this country. This, in connection with its greater tenacity, would seem to recommend especially the use of Bessemer metal for boilers, and will doubtless lead, before long, to its experimental adoption for that purpose in this country.—Engineering and Mining Journal.

Paint Shop.

OIL FOR WHITE STRIPING.

To make a drying oil for use in white and other delicate colors used in striping, pulverize sugar of lead, very fine; put about half an ounce into a pint of linseed oil, shake up, and place in the sun to settle and bleach. In about two weeks it will become perfectly colorless, and can be used without detriment in mixing the most delicate tints. The best painters, who stripe in oil, always can be used without detriment in mixing the most delicate colors used in striping, pulverize sugar of lead, very fine; put about half an ounce into a pint of linseed oil, shake up, and place in the sun to settle and bleach. In about two weeks it will become perfectly colorless, and can be used without detriment in mixing the most delicate tints. The best painters, who stripe in oil, always

COACH-PAINTING IN LEEDS, ENGLAND.

The following letter comes from a practical coach-painter of Leeds, Eng., who has had an experience of over thirty years; and he is therefore well calculated to talk with the painters in detail upon every point connected with painting as practiced in that city. It contains facts which will be of interest to every practical painter.

The body.

In the first place, Mr. Editor, it will be necessary for me to explain to your readers that the English coach differs somewhat from the American coach when it comes from the wood-room into the paint-shop. All the panels of the body are of mahogany, which I do not think is often employed in the United States for this purpose. Moreover, the roof and quarters of the coach are covered with a raw hide of leather, which is nicely stretched and rubbed down, and presents a fine and even surface. The leather-coated parts are first primed with two thin coats of Black Japan (corresponding to the Black Body Varnish used in America), reduced with a little turpentine. The remaining portions of the body are primed with light lead color, mixed with a little raw oil and turpentine, and a small quantity of sugar of lead to help its drying. This drier is necessary from the fact that in England the paint-shops are kept much cooler than in America, and the atmosphere is moister and less calculated to assist the drying process.

The body receives, in the next place, two thin coats of color, and the nail holes, etc., are stopped up with hard stopper, made of dry lead mixed with Japan Gold Size. Five coats of English filling-up are next added, being mixed as follows:

1 priming coat of lead (on leather parts 2 coats of black varnish instead),
2 thin coats of color,
5 coats English filling-up (8 coats on leather parts),
1 staining coat,
stoppered up,
2 coats dark lead, rubbed down and cleaned off,
1 coat dark lead,
12 coats, and ready for color.
FINISHING THE BODY.

If the body is to be black, we proceed as follows: Grind drop black in raw oil, stiff, and add a little sugar of lead, very fine, for a drier, and thin to the required consistency with Black Japan (Black Body Varnish) and turpentine. Apply two coats of this, and then give two coats of Black Japan (Black Varnish), and rub it down. Then face off the mouldings, and give a thin coat of dead black, and then apply a second coat of Black Japan, and flat again. The whole is then varnished with Hard-drying Varnish, and after the fine striping and coat of arms are painted, the whole is finished with Wearing Body Varnish.

If the body is to be blue, mix ultramarine blue with one-half raw oil and turpentine, stiff, and make of the proper working quality by thinning with Hard-drying Body Varnish. Two coats are applied, and after each coat a slight flatting is necessary, and then two additional coats of the same are applied with varnish added. When Prussian Blue is used, two coats are applied, and white is added if necessary for the purpose of producing the shade required. The blues will dry sufficiently well when merely ground in raw oil, stiff, and reduced with turpentine, and it is better not to add any drier. Over blues only one coat of Hard-drying Varnish is given, and one finishing coat.

If the body is to be lake, the lake should be ground in raw oil, stiff, and reduced with turpentine and Hard-drying Varnish. The same with drop black and Indian red. Over lakes and greens, two coats of Hard-drying Varnish are applied, and one coat of finishing.

The painter must in no case allow his oil colors to dry with a gloss, but he must always flat them, and give them the appearance of dead color. This is particularly important in case rough-stuff or quick-drying color is to be used over it.

Below we give a synopsis of the painting and varnishing of a black body.

2 coats drop black,
1 " black varnish,
rubbed down and mouldings faced off,
1 thin coat of dead black,
1 coat black varnish,
rubbed down,
1 coat Hard-drying Varnish,
striped and ornamented,
1 coat Wearing Body Varnish,
7 coats, from beginning of color,
12 " in preparation for color,
19 coats in all, upon bodies.

CARRIAGE PARTS.

Two priming coats are first applied, being mixed the same as that used in priming the body. The cavities are then stopped with hard-stopper, to which a little turpentine is added, in order to make it sand-paper easily. The wood parts then receive two coats of quick drying lead color, mixed of dry lead and lamp black ground in Japan Gold Size, and thinned with turpentine. The whole is then sand-papered down thoroughly, and the grain will be found to be well filled and perfectly smooth. A thin coat of oil lead color is then added, and well sand-papered, and any joints or open parts between the tire and felloe are carefully puttied up with oil putty. The carriage parts are then ready for color. Below is a synopsis:

PREPARATION OF CARRIAGE PARTS FOR COLOR.

2 coats of lead priming, stoppered up,
2 coats of lead, sand-papered thoroughly,
1 thin coat of lead color, sand-papered, and puttied up,
5 coats, and ready for color.

FINISHING THE CARRIAGE PARTS.

Two coats of lead color are first given, made the same as those last given to the body before the application of color. Then stopper up with hard stopper, to which a little turpentine is added, to make it sand-paper easily. Then give the wood parts two coats of quick lead, mixed of dry lead and lamp-black ground in gold size, and thinned with turpentine. The whole is next sand-papered thoroughly, when the grain will be found well filled and perfectly smooth. A thin coat of oil lead color is then applied, and finely sand-papered, and at this point any joints or open parts between the tire and felloes should be carefully puttied up with oil putty. A coat of color-varnish follows, and a second coat of same to which more varnish is added. The gears are then flattened and striped, another light coat of clear varnish is given, flattened, and the fine lines given, and the whole is then finished with wearing varnish:

Below is the synopsis of the foregoing,

2 coats lead color,
stoppered up,
2 coats quick-drying lead, sand-papered thoroughly,
1 thin coat of oil lead, sand-papered, and puttied up,
2 coats color-varnish, flattened and striped,
1 thin coat clear varnish, fine lines given,
1 coat finishing varnish,
9 coats from beginning of color,
5 " in preparation for color,
14 coats in all, upon carriage parts.

In conclusion, Mr. Editor, I will say that I have used the process which I have described in detail for twenty years, and never knew the rough-stuff to crack. It is a long job, but it is a sure one. By allowing each coat sufficient time to dry thoroughly, the quality of durability is insured, and I think this is the reason why our English painted carriages generally stand so well. Burning off a job for repainting is a very exceptional case in England. Indeed, during an experience of thirty years, I have never had more than three or four jobs to burn off; and in cases where it becomes necessary, it is where a carriage has had very bad usage, or has been exposed to the action of ammonia. Generally, we merely rub down to the rough-stuff; and in most cases we find that sound and firm, and a good foundation on which to paint over. I will try and write you again some time.

Yours, truly, W. H.

LEEDS, YORKSHIRE, England.
THE PICTURE AND THE PAINTING.

There is a difference between painting as an art and painting as a fine art. Each of them demands a considerable scientific knowledge to produce and prepare the colors, and manual skill to apply them. But while the painting of a carriage is an adornment only, the picture of a battle is expressive of an idea. Painting as an art is the finish of a work; painting as a fine art is a medium to convey thought. Painting as an art is the work of taste; painting as a fine art is the work of genius. This difference is indicated by a difference of origin.

It is generally imagined that painting as a fine art is a direct development of painting as an art, and that the development took place in the following manner: When it became necessary to find out a covering by which to make water-proof the surfaces of ships, walls, and wooden utensils, painting was invented. Noah's ark and the Homeric ships were painted in this sense of the word; that is to say, they were protected from the influence of water and dampness, by a covering of some glutinous substance. Next, when necessity was satisfied, it was quite natural that men should wish to make it still more pleasant by adding signification to color, and making the colors express ideas. Utensils, walls, and even ships were covered with colored imitations of men, animals, trees, &c., and thus the art of painting, by degrees, became a fine art; that is to say, a means by which to convey ideas.

This account of the origin and development of the art of painting reads well. Yet, it contains some mistakes. History proves that painting as an art, and painting as a fine art, originated quite independent of each other. We find with every people that, from the very beginning, there was one kind of painting which colored surfaces in order to adorn them, and another one which imitated natural objects in order to convey thoughts; and the former is so far from being the progenitor of the latter, that the craft is indebted to the art for many of its most important impulses. We will mention Greece as an example.

The Greeks, when convinced of a truth, yet not possessed of any historical or logical evidence of it, were accustomed to tell some fanciful story in order to introduce the truth to the imagination. Thus they told how a young girl, when parting from her lover, and watching the shadow of his features while he sat silent in sorrow, traced the outlines with chalk on the wall, and showed him how mercifully the gods had permitted a part of his soul to remain with her while he himself was absent. And they told this story as the origin of painting as a fine art. They believed that painting as a fine art had originated from drawing, from the imitation of natural objects, and not from the covering and coloring of surfaces.

In the Greek language, furthermore, the same word, graphein, is used to signify both writing and drawing, and the two kinds of pictures first invented are defined by their very names as a sort of writing; that is to say, as a means of conveying thoughts. The Greek drew, not as we do, with a lead-pencil on paper, but with a metallic pen called stylus, on tablets of wood covered with wax, and such a picture was called a monogram, from monos, only, and gramma, letter, because it consisted only of outlines. These outlines of the monogram were, in early times, produced by simply inscribing with the metallic point of the stylus in the wax; but, afterward, the outlines were filled in with black. This improvement was admired as a great invention, and the picture thus formed was called a skiagram, from skia, shade, and gramma, letter.

Thus we see that the difference between painting as an art and painting as a fine art was, with the Greeks, not only a difference of ideas, but also a difference of origin and history. Painting, as a fine art, was, from the day it was baptized and given a name, a means by which to convey ideas, and not an adornment; and it originated from a wish to imitate natural objects, and not from a necessity of covering surfaces to protect them from dampness. And it can be proved that the same distinction existed in early times with all people who knew painting both as an art and as a fine art.

Trimming Shop.

THE FASHIONABLE TRIMMINGS.

In visiting, during the past months, some of the leading carriage repositories in New York, we have observed that leather and silk are becoming more and more fashionable, and that in trimming they are even taking the place of cloth to a great extent. Leather is used in all classes of open carriages, and somewhat in coupés; silk only in the most elegant closed vehicles. The color of the leather is generally brown, sometimes green, but the latter is less pleasant, as green when applied to leather easily takes a dull and greyish hue. The color of the silk is generally blue or crimson. We have seen two coupés trimmed in black silk, one having yellow and the other with black minor trimmings. Both of them were elegant. The most popular color in trimming with silk seems to be crimson, to which is applied minor trimmings of black lace and buttons, which suits it very well, as crimson silk is so lustrous that it would be glowing if not softened and subdued by application of darker colors. In cloth, on the contrary, we still consider the fashion of trimming with
black on a brown ground very improper, because brown cloth is lustreless, and ought to be enlivened and brightened by application of light colors.

Pen Illustrations of the Drafts.

We present our subscribers, this month, with an unusually valuable series of carriage drafts, in which we believe they will all take an interest.

THREE-QUARTER LANDAULET.
Illustrated on Plate XXIX.

An English pattern. In one of our late numbers we had occasion to refer to the "Carriage of the Period," the Landaulet, and in giving this draft we feel assured that in its general outlines it is one of the finest drafts of this pattern ever published. It was selected by us at the request of a carriage builder in Washington. Much has been said of the many improvements which have been introduced into carriage building during the past ten years, and we could scarcely find a better illustration of the truth of this fact than by comparing patterns like this one with similar styles made fifteen years ago. Several clumsy details, that were once thought indispensable, have now given place to the more natural and graceful lines. Our plate certainly gives a fair specimen of these improvements.

Dimensions.—Wheels, 3 feet 3 inches, and 4 feet. Body; length at arm-rails, 4 feet 2 inches; width, 48 inches all over at door. No mouldings on body. Width of toe-board in front, 2 feet 4 inches. Rocker plates, 2½ inches wide, ⅛ inch thick. Track, 4 feet 6 inches. Springs; 4 leaves, steel, Nos. 3 and 4, 1½ inch wide.

Trimming.—Brown cloth is still popular with this class of work. If dark brown be used, black trimmings generally accompany it, but trimmings of light brown would be much preferable when used on the dark ground, as we explained in the December magazine. Silk is used for the more expensive class of work, and the deep shades of blue and green are popular.

Painting.—The upper quarters may be painted dark lake, and the lower quarters black. No striping on body. Broad stripes on the sides of the spokes seem to be coming into fashion with some New York houses, but we much prefer the more delicate ones.

Mountings.—Gold is fashionable, but silver mountings and silver-lined lamps are preferred on many of the richest carriages, as being less showy.

KIMBALL PATENT JUMP-SEAT.
Illustrated on Plate XXX.

This is a well-known and very convenient style of vehicle, for which Mr. Stivers has a manufacturer's shop-right. This specimen, exhibited at the American Institute Fair, weighed 402 pounds.

Painting.—Running parts, carmine, striped with one broad and two fine lines of black. Body, black, striped with gold.

Trimming.—Blue cloth.

CIRCULAR FRONT, THREE-FOURTHS COUPE.
Illustrated on Plate XXXI.

The body has the usual cut-down door, and the lines of the dickey-seat, forming a square cut-under, are fashionable at the present time. The light in the back quarter is stationary, and six inches wide. This light is not only a great convenience to the occupant of the carriage, but it serves to lighten the appearance of the vehicle.

Painting.—Running parts, deep crimson lake, striped with black, and edged with two fine lines of glazed carmine, giving a beautiful effect. Body; upper-quarters, black; below the arm-rail, deep crimson lake, striped, like the carriage parts, with fine line of glazed carmine.

Trimming.—Brown satin lining, brown lace, with crimson ornament. Mountings of gold.

This coupé was exhibited at the American Institute, by Theodore E. Baldwin & Co., and is very graceful, although we think there are some combinations of lines which are improved upon in the Landaulet, given on the first plate. We beg our readers to please compare the two. Mr. Baldwin's coupé looks lighter than the other, but this is due mainly to the light in the back quarter, and to the lightness of the dickey-seat. On the other hand, we think the lines of the dickey-seat and body, in the Landaulet, are better proportioned, and that it appears to ride firmer. We were never in favor of the projection in front of the door, which breaks the line of connection between the seat and body, until experience taught us what a very comfortable refuge it gave for the feet. This coupé is intended for either one or two horses.

ONE-HALF SPRING NO-TOP WAGON.
Illustrated on Plate XXXII.

This pattern is rather old. Width of body at front of seat, 1 foot 7 inches.

Painting.—Carriage parts, straw color, striped with two fine and one broad line of gold, the effect of which is tame. A better striping would have been thus: two fine lines of light emerald green, with fine line of white between them. We saw the latter in a Broadway repository the other day.

HAMBLETONIAN ROAD WAGON.
Illustrated on Plate XXXII.

This wagon is of very light and graceful pattern, and is well painted and carefully finished. It is a good representation of the class of light work built by Mr. Stivers. This concludes our series of American Institute drafts.

Painting.—Carriage parts, snuff-color brown, with broad black stripe and two fine lines of gold. Body,
black, striped with gold in the lower mouldings, and on the seat-rail.

Trimming.—Leather, of light snuff-color, with black borders.

OPEN-TOP JAGGER WAGON.
Illustrated on Colored Plate.

We believe this is the first colored draft of a carriage that was ever issued by any American publication. This jagger wagon was lithographed, and then each plate was colored by hand by Mr. A. Muller of this city. The design was selected with care, and, presented in this manner, we trust it will be valuable to every one of our subscribers. It may be deemed worthy of a frame.

This style of wagon is very popular in New York, being admired not only for its tasteful and jaunty appearance, but more particularly from the fact that it is considered more easy riding than the end-spring wagon. This is undoubtedly true, as the body is supported, not only by the half springs, but also by the two wooden bars and spring plates, and, moreover, the seat rests on wooden bars.

Dimensions.—The width of the body is usually 26 inches, and the three cross-bars are made to project about 1½ inch over the sides of the rocker, to give ½ inch between the bolts and body. These cross-bars are ½ inch by 1½ inch middle, lightened toward the ends, and the center one is fastened by collars to the side-bars. The side-bars of gearing are 1½ inch by 1½ inch, and the body is set forward of center ⅛ inch. These wagons have mostly two reaches (or perches) with or without stays. The seat-bars and riser are of one piece, and they rest on four corner blocks, held down by leather straps.

Half-springs, 3 plates, 1½ inch.
Axle, ⅛ inch.
Trimming.—Blue cloth.
Painting.—Body, dark lake. Carriage parts, vermilion, striped black.

Editor’s Work-bench.

OUR CARRIAGE DRAFTS.

A subscriber withdraws his subscription and writes us as follows:

“Mr. Editor. Dear Sir—I have taken the New York Coach-maker for the last year and a half, and I have never used a single carriage drawing contained therein. I therefore think it unnecessary to take it longer.

Yours, truly, New Jersey.”

In reply, we cannot agree with our subscriber in his reason for not taking the magazine any longer. It may be that he has not used any carriage draft contained in it, but that does not prove that the drawings were poor, or that they have not been useful to him. The American carriage trade would be in a very imperfect and primitive state if it renounced all individual ideas, and fed only on those which were given it by the trade papers. We take a great deal of care in selecting the drafts for the Coach-maker’s Magazine, but as a general thing they are intended as suggestions only, or for giving a general view of the present fashions and the prevailing taste. In this respect they have been chosen with such attention that we are led to believe the fault is not wholly theirs, if they have been of no use.

For instance, were not the drafts of the carriages exhibited at the American Institute Fair of considerable interest? We heard the wish expressed by many carriage builders that they could visit the fair in New York and see the styles, and it was from this wish that we conceived the idea of sending the styles to them. We know these styles were of value. Perhaps none of our subscribers will use them, but to know what is not is often as valuable as to know what is. And even if the drawings were not satisfactory, is the reading matter in the magazine nothing? We should be sorry to hear so.

In this connection, a word as to our plans for the year 1871 may not be out of place. We are rapidly making our arrangements to combine the Coach-maker’s Magazine with “The Hub,” and with the combined forces of these two papers—the youth and energy and correspondence and paint of “The Hub,” and the experience and the cuts and the additional departments of the magazine—we shall endeavor to make a magazine worthy of the trade which it represents. We believe we have the means at our command by which to accomplish this intention. We invite all our subscribers to come forward and assist us, and in a few months we shall be ready to begin to assist them in every means within our power.

PEACE DECLARED.

Our offer of peace to the “Philadelphia Coach-maker” has been accepted by them in the same spirit in which it was tendered. We thank them for the kind wishes expressed in the following:

“In the November number of the Coach-maker’s Magazine of New York, the present editor offers the right hand of fellowship, and asks that ‘violet instead of black ink be hereafter used.’ He sees no reason why there should be any enmity between us, and we in return heartily agree with him. When our journal was first started, we remember sending a similar friendly greeting to the New York Magazine; it was then in other hands—but the response was quite different from that which we now tender to the present editor, in reply to his offering, as he assumes the responsible and onerous duties of his new position. We are not partial to strife of any kind, but when the gauntlet is thrown at our feet, we are not so cowardly as to fear to take it up. The history of the past, in this connection, will prove who was the victor in that tournament of words, and on that we rest satisfied. Being per-
sonally acquainted with Messrs. Valentine & Co., the publishers, and Geo. W. W. Houghton, the editor of the magazine, we can in all sincerity grasp their proffered hand, and wish them well in their new enterprise.

THE LATEST AND MOST FASHIONABLE CARRIAGES.

The "Evening Mail" gives a review of the latest and most fashionable styles in New York, from which we select part of that which follows:

Whether the French war has driven a greater number of our wealthy citizens home, or our people are becoming more wealthy and luxurious than formerly, or both, it is certain that Broadway and Fifth Avenue never appeared more resplendent with gay and costly turnouts than now. All who are able to afford it, and many who are not, are expected to own their equipages. Carriages of some kind are the rule in society, and it is to be expected that no less skill and taste is expended in designing and furnishing these luxurious marks of wealth and refinement than in other departments of human custom. The skilled eye, while watching the ebb and flow of the gorgeous tide up and down Fifth Avenue and Broadway, can detect unerringly the real aristocracy from the shoddy, the persons from the old family, the professional man, the sport, the jockey, or the man about town.

The lady in the rich carriage costume for November, accompanied by her dashing daughter, in full dress, and driven by a coachman in livery, rides in a Landau, made to open or close, according to the season. The upholstery for fall is satin of rich garnet, azure blue, russet brown, and maroon color. On the right door is the card case, curtains looped, lace trimmings to correspond with the upholstery. To communicate with the coachman the bell is abandoned, and the speaking-tube and whistle substituted. A handsome tube is attached to the left side and passes out to the coachman. At either end is a trumpet, and at the outer one, which is looped over the arm of the coachman by a ribbon, is a whistle. A breath from the inside warns the coachman, who applies the trumpet to his ear and receives his orders. The body of the Landau sits very low on C springs. Opening the door discovers the steps. The cost of a fashionable establishment of this kind is $1,900. Match horses are the mode with the Landau. It is not in vogue with shoddy people, as, in consequence of the high sides, the dress is not exhibited—the Victoria, or summer style, remaining in use by parvenus. A fine family carriage, with wide, roomy seats, is the Clarence, close in winter; front open in summer; body low on C springs; coach-box quite high; no rumble. The footman sits with the coachman, and the top is made of enameled leather. Black is the style for the body; running gear, dark colors, striped with red, yellow, or brown. The upholstery is satin, and the prevailing colors are garnet, scarlet, magenta and maroon. The lining is tastefully arranged in folds, diamonds and triangles, fastened by satin buttons, and trimmings and lace garniture to correspond.

A very proper family turnout can be had for $1,000.

A FAMILY COUPE

is a snug, convenient little affair used by ladies for shopping, also by aristocratic physicians and down-town merchants. The body is compact, hung low, one seat, with a small one for children. The front is entirely plate glass, and can be removed; driver's seat is low. The upholstery for business purposes is plain, but for ladies' use plum, garnet and mauve satins are in style. The inside is conveniently fitted with card-cases, reticules, portfolios, mirrors, etc. A very handsome coupé can be had for $1,300.

THE PONY PHAETON

is a handsome little convience for ladies' driving. The groom sits in the rumble, and the lady, in suitable driving dress, hat and gloves, handles the ribbons herself. The body is low, and easy to get in and out without the assistance of the groom. The hind wheels are covered with a broad apron, and dashboard of medium height. The expression of the whole is graceful, roomy and jaunty. Rich brown or navy blue cloth is the style for upholstery; lace and trimmings to match, with jet buttons.

BUGGIES

can scarcely be considered the subject for fashion's delicate attentions, as they are a business and useful article merely, yet the styles are constantly new, and some of the later ones decidedly handsome; but

THE TROTTING WAGON

is a fashionable appurtenance to the elegante, and the box wagon, weighing from 100 to 130 pounds, the latest word from the designers. In shape it is severely plain, being a box literally, about eight inches high, of glossy black, with a seat in the middle. It is nobby to have the wheels yellow or red, striped with black. Another road wagon might be called the cobweb style, weighing only 100 pounds, and consists of running gears and skeleton seat without a box.

ROBES.

The mode for robes is bearskin, although buffalo and lion are in use. A fine bear is worth $100. For inside lap robes imitation Astrachan lined with bright flannels are the style. Zephyr wool, woven in stripes of different colors and delicately blended shades, are much in vogue.

HORSE BLANKETS,

for dress, are dark colors—gray the favorite, trimmed with bottle green cloth, chain stitched with white silk.

LIVERY

is, of course, the last consequence. In Europe it designates the family and rank and is an heir-loom, but in more modern America it is adopted and altered at the fancy or caprice of the parties who use it. Nevertheless, fashion has a word to say in regard to the propriety and taste of livery. Capes are not in mode. The coat is drab; cut below the knee; double breasted, buttoned close with five silver buttons on each side; six buttons, nine inches apart, on the back; four buttons, latterally, on the sleeves; corduroy breeches. Footman and coach-
man dressed alike; gloves of buckskin, with fur cuffs; silk hat with a cockade.

FOR GENTLEMEN'S DRIVING GLOVES,
white buckskin, fleece-lined, plain cuffs, is the style, although drab may be worn; for the drive, of course, all elegantes understand that velveteen suits is the mode.

EXCHANGES.

We are favored with a great number of exchanges, including many in which we take special interest. We would be glad to give detailed reviews of some of them, but our space allows us to make only a mention of the most prominent and those which pertain most closely to the departments which we represent.

"THE HUB" occupies one-half our office and one-half our attentions. We, of course, regard it with feelings of most brotherly—not to say fatherly—interest, and its friends report that each successive number is better than the last. We cannot ask more. Most of our readers are probably aware of the fact that an engagement exists between the Magazine and this younger publication, and that it is expected the marriage will take place in March. Congratulations arrive daily.

The Philadelphia Coachmaker comes to New York monthly, and its editor, Mr. Ware, came last month, but we were disappointed in not being in the city when he called upon us. This paper has accepted our offer of peace, and the magazine and the journal are to-day fast friends.

The Harness Journal is published in New York, not far from the Magazine, and it contains many articles of interest to the carriage maker. Its editor, Mr. Fitzgerald, was formerly engaged in the carriage business in Newark, N. J.

The Cabinet-Maker, published in Boston, often has good articles on the different varieties of wood and the methods of working it, which would help the wood-worker. Its price is $2.50 per year.

Scientific American.—From time to time we have selected articles from this valuable exchange, which illustrates its practical character. Beside those which refer to our specialties, it contains many articles of the highest general interest; for instance, Prof. Tindall's lectures about the "Scientific use of the Imagination."

The American Artisan contains an occasional article of special interest to our readers.

Architectural Review.—We intend giving in the next magazine a valuable article on the formation of woods taken from this journal, which we know will interest every carriage wood worker.

The Technologist is devoted to engineering, manufacturing, and building. Its price per year is $2.

Boston Journal of Chemistry treats upon the subject which it represents, in a manner which brings it home to every reader. Its cost is $1 per year, and every number contains articles of general interest. We wish it might touch more upon paint questions than it has done.

Atlantic Monthly.—Though not connected with carriage building, we must, in conclusion, mention this most high-toned monthly, which has for so many years been a standard authority on questions of literature, science, and art. We always read it with interest, and have occasionally clipped from it.

INDUSTRIAL ASSOCIATION.

In reply to requests received from various quarters, we publish, in full, the Constitution of the Brewster & Co. Industrial Association, which is an experiment that will be watched with interest by many of our readers. The arrangement was entered into with a view of making every employee directly interested in the quality of their productions. It will be seen by an examination of the agreement that, in addition to their wages, the employees are allowed a half yearly dividend of one-tenth of the net profits of the firm, to be divided among them according to the greater or less amount of work performed by each. On the first of July last, the first dividend was declared, giving three and a half per cent. on the earnings of each man. We learn that some of them thus received from $32 to $52; and others, from $5 to $10.

Constitution.

Whereas, Messrs. Brewster & Co., of Broome Street, New York City, Carriage Builders, have proposed to their employees that at the end of each fiscal year, viz.: on the first day of July, said firm will divide a sum of money equal to ten per cent, of their net profits in their Broome Street factory and Fifth Avenue warerooms, during the year then ending, among certain of their employees, in proportion to the wages earned by them respectively, and in addition to such wages (the persons so to share in said sum to be determined by the employees of said firm); and have also proposed that, in determining the amount to be thus divided, the members of said firm shall make no charge for their services, nor for interest upon the capital invested in their business, and that the business of each year shall stand by itself and be independent of that of any other year;

And whereas, the next fiscal year of said firm does not begin until July 1, 1870, but said firm have proposed to inaugurate the above plan as of the date of Jan. 1, 1870, and in July, 1870, to divide a sum of money equal to ten per cent, on one-half of their net profits in said Broome Street factory and Fifth Avenue warerooms (to be determined as above mentioned), for the year then ending;

And whereas, the next fiscal year of said firm does not begin until July 1, 1870, but said firm have proposed to inaugurate the above plan as of the date of Jan. 1, 1870, and in July, 1870, to divide a sum of money equal to ten per cent, on one-half of their net profits in said Broome Street factory and Fifth Avenue warerooms (to be determined as above mentioned), for the year then ending;

Now, we, the delegates elected by said employees to confer with the members of said firm, with a view to adopting measures suited to the above proposals, and calculated to promote the general interests of said employees, and to insure greater harmony among them, do, on behalf of said employees, ordain and establish this Constitution for the "Brewster & Co. Industrial Association."
Article I.

There shall be a "Board of Governors" for the shop at large, and a "Board of Control" for each department.

Article II.

Said employes shall be divided into seven Departments, as follows, viz.:
Department Number One shall consist of the Heavy Smiths, Light Smiths, and Finishers, each calling to be represented by at least one of its own members in the Board of Control.
Department Number Two shall consist of Wheelwrights and Carriage-makers, each to be represented by at least one of its own members in the Board of Control.
Department Number Three shall consist of the Jobbers, Cleaners-off, Filers, and Platers, and the first and second floors shall have two representatives, and the third and fourth floors one representative, in the Board of Control.
Department Number Four shall consist of the Heavy Trimmers, Light Trimmers, and Stitchers, and each shall be represented by one of its own members in the Board of Control.
Department Number Five shall consist of Heavy Body-makers and Light Body-makers, and each shall be represented by at least one of its own members in the Board of Control.
Department Number Six shall comprise the Body Painters alone.
Department Number Seven shall comprise the Carriage-part Painters alone.

Article III.

The Boards of Control shall have three members each, who shall be chosen by the members of their respective Departments, one of whom shall be designated by the President of the Association as Chairman, who shall serve one year (but the persons who shall serve as Chairman of the several Boards of Control, and as ex officio members of the Board of Governors for the year beginning on Jan. 1, 1870, shall be designated by the Chairman of the Delegates who have ordained and established this Constitution); the remaining members of the Board of Control shall determine by lot the duration of their respective terms of office—one shall serve three months and the other six months. In case of a vacancy, an election for the unexpired term shall be held within a week after its occurrence, on the order of the Chairman of the Board of Governors.

Article IV.

The Boards of Control shall carry out and enforce in their respective Departments all rules and regulations made by the Board of Governors; and at each monthly meeting of the latter, the Chairman of the Boards of Control shall report, in writing, the working condition of their respective departments.

Article V.

The Board of Governors shall be composed of the Chairmen of the Boards of Control and the Representative of the Shop at Large, in Article VIII. mentioned, and within one week after the members of the Board of Governors have been designated, as provided for in Article III., they shall elect one of their number as their Chairman, who shall serve six months as such, and while acting as Chairman shall have no vote except in case of a tie; and they shall choose their other officers, whose term of office shall be six months, also a Chairman pro tempore in the absence of their Chairman. They shall, also, within one week after their organization, elect a President of the Association from among the members of the firm of Brewster & Co., and he shall serve one year and until his successor is chosen.

Article VI.

The Board of Governors shall assemble once in each month, or oftener, if the President of the Association or its Chairman shall so direct, or a majority of its members request it. Five shall constitute a quorum for the transaction of business. The Secretary of the Board shall receive a salary, the amount of which shall be fixed by the President and by him be paid quarterly.

Article VII.

The Board of Governors shall have power to make rules and regulations for the shop.

Every resolution or measure of any kind which shall have passed the Board shall, before it becomes binding upon the Association, be presented to the President; if he approve he shall sign it, if not he shall return it with his objections, in writing, or with a verbal statement to the Board, at its next monthly meeting, and the Board shall then proceed to reconsider it; if, after such reconsideration, two-thirds of all its members shall vote to pass it, it shall become binding, notwithstanding the objections of the President; but in all such cases the vote shall be determined by yeas and nays, and the names of the members voting for, as well as those voting against it, shall be recorded in the journal.

Article VIII.

The Board of Governors shall, within one week after its organization, elect, as a Representative of the Shop at Large, a member of the Association having a general knowledge of the business of the several departments, who shall serve six months as a member of the Board, and have all the rights and privileges of any other member of the Board.

Article IX.

All persons employed in the Factory shall have the right to vote, except clerks, salesmen, boys, porters, apprentices, cartmen, and persons under instruction in any of the Departments; and all questions as to the status of any person or persons not directly employed in mechanical labor shall be referred to the firm of Brewster & Co., whose decision shall be binding on the Association, and on all the Boards.

Article X.

A member of the Association to be eligible to any office therein, must be twenty-one years old, a skilled mechanic, and have worked in the Factory not less than six months; and any question as to whether an employee shall be ranked as a skilled mechanic, or a laborer, shall be decided by Brewster & Co.

Article XI.

Neither this Association, nor any member thereof other than its President, shall have any voice or authority in the management of the business of Brewster & Co.; nor shall this Association, nor any member thereof, have the right to bring suit against the firm of Brewster & Co., or
any member of said firm in any court of law or equity, to determine or recover the amount of any share or shares in the moneys mentioned in the preamble of this Constitution; and it is expressly understood that the wages agreed to be paid by Brewster & Co. shall be full compensation for all services rendered by any member of this Association while in the employ of Brewster & Co.

Article XII.

Any member who shall voluntarily leave the employment of Brewster & Co. (when full employment is offered by them) before the close of any fiscal year, without the written consent of said Brewster & Co., shall receive no share or portion of the moneys mentioned in the preamble of this Constitution, but the share of such moneys proportioned to the wages earned by said member during said fiscal year shall be paid into the Treasury of the Benevolent Fund to be hereafter established by the members of this Association.

Article XIII.

Any member who may be discharged from the employment of the firm shall, notwithstanding such discharge, at the end of the fiscal year, receive the share of the moneys in said preamble mentioned, proportioned to the wages earned by him during said fiscal year, provided such wages amount to the sum of two hundred (200) dollars; and all the shares in the moneys, in said preamble mentioned not called for within six months after they are declared shall be forfeited, and paid over to the Benevolent Fund.

Article XIV.

This Association may be dissolved at the close of the fiscal year after July, 1870, or within thirty days after such close, either by Brewster & Co. or by a two-thirds vote of the members thereof taken by tellers appointed by the Board of Governors.

Article XV.

All persons employed in the factory and sales rooms of Messrs. Brewster & Co. shall share in the moneys mentioned in said preamble ratably, in proportion to the wages earned in such share of the moneys mentioned in said preamble to each person so employed shall be posted in each Department for a period of ten days, after which the Board shall proceed to vote upon it; and, if two-thirds of all the members thereof vote in favor of it, it shall then become a part of this instrument.

Article XVI.

All fines imposed and collected under the By-Laws of this Association shall be paid over to the Benevolent Fund in Article XII. mentioned.

Article XVII.

All complaints against the working management of any department shall be made by the President to the Chairman of its Board of Control, and, if such complaints are not properly heeded, and a remedy applied, he shall then report the matter, in writing, to the Board of Governors for action.

Article XVIII.

All charges against officers of this association (except the President), of neglect of duty, or violation of any of the laws or regulations, must be made in writing to the President, who shall lay them before the Board of Governors, and within ten days thereafter (unless a regular meeting is to take place within fifteen days) the Board may order a special meeting of the Board to investigate the charges, and the accused shall be summoned to appear before them in his defense. If adjudged guilty, the Board may remove him from office, or inflict such fine as in their opinion would be just.

Article XIX.

Any member of this Association, other than officers, who may violate any of the laws or regulations of the shop, shall be complained of to the Chairman of the Board of Control of his Department, who shall investigate and report the fact as ascertained to the President, who shall take such action as the case may seem to demand, or refer it to the Board of Governors, as he may elect.

Article XX.

Any member of this Association who shall make a false and malignant charge against a fellow-member, affecting his standing as an employee of Brewster & Co., shall, upon good and sufficient proof, be fined, or dismissed from employment by a vote of the Board of Governors.

Article XXI.

The terms of office of those first elected as officers either of this Association or of any of its Boards, and the official terms of the members of said Boards, shall be deemed as beginning on the first day of January, one thousand eight hundred and seventy—and all officers and members of the Board of Governors, and of the several Boards of Control, shall hold over and continue to serve as such officers and members until their successors are respectively appointed or chosen.

Article XXII.

The foremen shall exercise authority in their respective Departments, in behalf of the firm, when no member of the firm is personally present.

Article XXIII.

A proposition to amend this Constitution must be presented by the Board of Governors to the President; and, if he approves, a copy of the proposed article or articles shall be posted in each Department for a period of ten (10) days, after which the Board shall proceed to vote upon it; and, if two-thirds of all the members thereof shall vote in favor of it, it shall then become a part of this instrument.

John D. Gibbon, Thos. Sedgwick,
Alpheus E. Ferris, Samuel Lyon,
Edward Rowe, Henry S. Whitney,
Joseph F. Scanlon, Richard Coleman,
James Haggerty, Jacob Krummenauer.

Errata.—In the November Magazine, the design of the Square-box Top Wagon was in the plate credited to Mr. E. Smith instead of Mr. G. J. Moore. It was referred to under the “Pen Illustrations” as Mr. Moore’s, and this was correct.
CORRESPONDENCE.

GOLDEN RULE OF PROPORTION.

SPRINGFIELD, Dec. 3, 1870.

Mr. Editor—Dear Sir—I was at first very much pleased with your answer to my letter. “Proportionality,” you said, “is one part of beauty, and correlation between idea and form is another.” That I understand. Next you said, “as correlation between idea and form is a more essential part of beauty than proportionality, it may happen, that something which possesses the former may be found beautiful, though it falls short of the latter.” That I understand too, and I was very much pleased with the conclusion, that “the buggy is the nicest thing in the world, though it does not agree with the Golden Rule of Proportion.”

I sat meditating on what a singular thing beauty is since it can be produced in so many different ways, and I wondered whether there could be found anything that was beautiful in all respects. I was always fond of a little philosophy, and like very much to know the reason for everything. Thus, I was just going to write you a letter, and ask why you called Correlation between idea and form a more essential part of beauty than proportionality, when I remembered that I had not finished reading the article. I took up the magazine once more and read the article through, but when I reached the last sentence and read: “We are, however, by no means sure that it (the buggy) defies the golden rule of proportion so utterly as our correspondent thinks.” I said to myself what I now say to you: Mr. Editor, you will swim under the water, but I will catch you. I read newspapers before you were born. I know the tricks of the editors. When they do not wish to tell the truth and dare not tell a lie, they always begin so: “We are, however, not sure”—and then go on swimming under the water. I know them.

Therefore, I ask you directly: Is the buggy not in every respect an infringement of the golden rule of proportion, and is it not, in spite of this, the nicest thing in the world? No or yes?

Yours truly,

P. Jones.

In reply to this letter we would give the following explanation:

The top-buggy is, without doubt, an infringement on the golden rule of proportion. It is three or four inches too high in proportion to its length, and the reason why many persons do not feel this infringement of the rule as a real disproportion is, that they have become so used to it that their eyes have ceased to give any judgment upon it, just as now-a-days we have become so used to ladies’ waterfalls that our eyes have ceased to notice that this immense bulk of hair must necessarily be false.

The infringement is not accidental however. It was planned deliberately, and has been accepted as proper, from a regard to usefulness. The top is made three or four inches higher than it otherwise would be, in order to give sufficient room to accommodate the chimney-pot hat.

If we were in the habit of riding and walking bare-headed from a regard to usefulness, the tops of our buggies undoubtedly would then be made several inches shorter, and would then accord with the golden rule of proportion. We wear stove-pipe hats, and thus the buggy-top is thrown out of proportion for three or four inches.

This hat, like the waterfall, is only a fashion, and fashion is often only a kind name for foolishness of fancy. We will not preach a crusade against the chimney-pot hat. We do not consider it worth while. But we think it sufficient when these monstruosities have been allowed to deform our heads, and too much when they are allowed to disproportion our carriages. Yes, we feel sure that when the stove-pipe hat once takes its leave and returns to that garret of folly from which it came forth, the top-buggy will submit to the golden rule of proportion, from which it was deviated—only by your hat, sir.

JUNEUS.

WEST INDIAN CARRIAGES.—In a paper on “Timber,” read before the London Society of Arts in 1858, by Leonard Wray, he mentions the varieties of wood used in the construction of a West Indian buggy, as follows: Calabash for the naves of wheels, brazileia for spokes, acacia for felloes, cedar for body, and lanewood for the shafts.