The Art of Dyeing—No. 13.

COTTON, BLUE AND RED MIXED COLORS—DARK LOGWOOD PURPLE—This color is a mixed blue and red—binary—the former predominating, but in olden time we find crimson sometimes called purple, which is a color with the red ray predominant. Common purples on cotton are prepared by steeping ten pounds of cotton in sumac liquor, (3 lbs. boiled or scalded) for twelve hours, then taken out, wrung or squeezed, and shaken out, then handled for five turns in a spirit tub of nitro-muriate of tin at 3° Twad., then steeped for an hour, taken out, wrung, well washed, wrung, and shaken out again, and then handled smartly for half an hour in a tub of strong logwood liquor at the rate of eight pounds to the ten of cotton. This makes a deep purple. It is not a fast color.

LIGHT LOGWOOD PURPLE—This is performed in the same way as the last, only the cotton is bleached, gets only 2 lbs. of sumach to the 10 lbs. cotton, and 3 lbs. of logwood. These colors receive a *raising*, as it is termed, that it is, when the cotton gets seven turns in the logwood it is lifted, and about half a wine glass of the muriate of tin stirred among the liquor, the goods entered again, getting four handlings or turns, then lifted, washed and wrung for drying.

SUGAR OF LEAD ALTERNATE—If sugar of lead is employed for raising instead of the tin spirits, the color is thrown on the blue shade.

REDDISH PURPLE—This shade is given by the same process as the others, excepting that the dye liquor is composed of half logwood and half peachwood.

A deep reddish purple, sometimes called crimson, is colored by giving four pounds of logwood and four of peachwood, all the rest of the process being the same.

PLUM PURPLE—This color is dyed in what is termed the plum tub. This is made by boiling logwood until it stands at least 6° Twad., then adding nitro-muriate of tin spirits. About 1¼ ounces of tin are employed for one pound of acid. The proportion of acid is 1 lb. nitric to 5 muriatic (hydrochloric.) Some dyers, however, use muriatic alone, and feed in as much tin as the acid will dissolve. For every two pounds of the best logwood used, one pound of the spirits is employed in making up the tub which should stand three days before it is used. Most dyers throw a mysterious air around the preparation of this tub or vat. Owing to the spirits being so strong, the working of goods in it is very severe on the hands.

The way to work the goods is to take some of the strong liquor out of the vat (which is generally a large hogshead) and place it in a small tub, adding some fresh liquor for every new bundle or parcel.

The color produced by this method is very rich, but great care is required in handling the goods, as they are liable to work uneven. By using one-half peachwood instead of all logwood, the color will exhibit more of the red ray. By running the goods through warm water after being dyed, they are thrown on the blue shade.

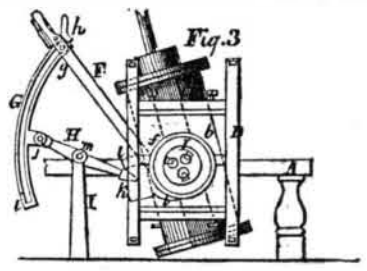
LAVENDER—This is a light purple on the blue shade, and comprehends *puce* and *lilac* shades. Dye the goods a blue in the indigo vat first (to the depth of shade desired) then wash them well, wring or squeeze, shake out, and give ten turns in the plum purple liquor. It must be observed that the old plum liquor is always preserved. This lavender with an indigo blue bottom, is a very beautiful color.

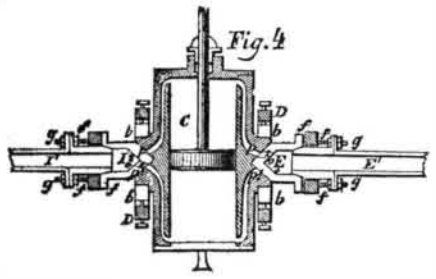
The *puce* shade is dyed by giving a very light blue bottom (to do which the indigo vat must be sharp and in good order) and a light purple dip afterwards; then wash them, Lilac is done in the same manner, only the spirit tub must be made of half peachwood and half logwood. For these light shades—purple, puce, lilac, &c—the goods should all be bleached.

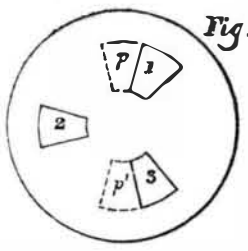
ALKANET ROOT LILAC—This is the most beautiful color, with the exception of Turkey red, that is dyed on cotton. The root grows in the Levant. Its coloring matter is but slightly soluble in water, but is rendered so by the mordants applied to the goods which are designed to be colored by it. The goods are first bleached, then run through a strong solution of soap, then wrung up and dried in the stove room. About one pound of good soap is sufficient for ten pounds of cotton yarn. Next day the goods are run through a saponacious liquor, made with olive oil and pearl ash, dissolved in warm water at the rate of one quart of oil to one pound of ash. These are stirred up together and diluted with milk-warm water, until its strength is reduced to 3° Twad. The goods are padded together, in this in hanks, by hand, wrung up, and dried in the stove room. Two of such liquors are sufficient. The goods are then washed by running them through three tubs of clean milk-warm water. They are then dried again, and are fit to receive the mordant. This mordant is a strong solution of alum, about 4° Twad. It is best to run them twice through this liquor, to provide against unevenness. They are then dried, washed with three waters, wrung up, and are fit for receiving the dye wood. It requires a great quantity of this root to give a full color; no less than two pounds of it for every pound of cotton. It is ground to powder, and put into a copper kettle of cold water, and the goods entered. The heat is then increased, and the liquor brought gradually to boil in about three-fourths of an hour; the boiling is continued for half an hour, when the goods will have acquired a deep rich lilac color. If the shade inclines to the reddish tint, it can be blued by adding a small quantity of sugar of lead in solution.

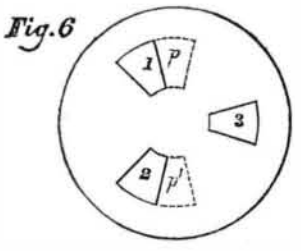
Although this color is very beautiful, it is expensive, and far from being as permanent as Turkey red, inasmuch as light soon affects it, and reduces its brilliant tone from a violet hue to a rusty drab.

OSCILLATING ENGINES.









[Concluded from First Page.]

The arc, G, is attached by a pin, *j*, to one end of a lever, H, whose fulcrum, *m*, is in a standard, I, and whose opposite end, *k*, enters a notch in a piece, *l*, which stands out from the front of the cylinder. The oscillation of the cylinder gives a vibrating motion to the lever, H, and through it gives a rising and falling movement to the arc, G, which gives an oscillating movement to the lever, F, and to the valves, E and I, the valves always moving in the opposite direction to the cylinder. This movement is for the purpose of opening the ports in the cylinder quickly by causing the ports in the valves to move towards them to meet them.

The peculiar characteristics of the operation of this engine are the quick opening of the ports and the simple and easy reversal.

Oscillating engines are very simple and compact, and are fast extending in use. We believe they have not yet been applied to locomotives, but they have to all other purposes.

More information may be obtained by letter addressed to Mr. Wood at Jacksonville, Tompkins Co., N. Y.

Self-Loading Cart.

The claim on another page of the patent for a self-loading cart, granted this week to Dr. Ze Butt, of Lincolnton, N. C., embraces some very peculiar features. The wheels are hung on short axles, the box has no head board, and the body of the cart is hung on a vibrating crank shaft turning in boxes in the frame, and is placed near the back of the frame, so as to allow of dumping the load easily. It is by thus arranging the body of the cart that the adjustment of the front end, or the whole of the cart body can be effected, and the load dumped backward, with dispatch and ease. A scraper is also secured to the front end of the bottom of the cart body, which scoops up loose soil, and deposits it in the cart box, as the cart is moving forward, thus rendering it a most excellent improvement for street wagons in grading, and also for grading railways.

Watchmakers' Lathes.

The claims of the patent of James M. Bottum, of this city, published on another page, embraces an improvement in watchmakers' lathes, whereby such a lathe is rendered more adaptable—because more flexible—to enable the wheels to adapt themselves exactly to the form of the work. A polishing wheel spindle is so secured and applied to the lathe as to allow the polishing wheel to be adjusted to polish any turned surface, either the periphery of cylindrical or conical work, or the faces of shoulders, whether square or bevelled. By the improvement, the faces of the shoulders of journals and pivots may be polished right into the corners in the best manner without any difficulty, by any workman of moderate capacity, and so can other work, which is now performed only by highly skilled workmen.

Air Heating Furnace.

The patent granted to Jas. H. Sutton, of Honesdale, Pa., this week, for an improved air heating furnace, has for its object preventing heating of the air in the cellar or vault in which the furnace is placed, so as to employ the whole of the heat of the furnace in heating the air that passes through pipes described in the claim, and conducting it to one or more different apartments of the building, to heat them. The furnace is constructed so that the cold air for combustion passes down between an outside casing and a second one, then into a space between the latter and the fire chamber, and into the fire. The air to be warmed and conveyed to apartments, for respiration and maintaining a comfortable temperature, passes cold and pure through a tube into the furnace, and is heated and conveyed upwards into a chamber, and from thence conveyed by pipes, or a pipe, to any place where it is wanted.

New Washing Machine.

Although a great number of patents have been obtained for washing machines, it will be observed by the claim of E. Morgan, on another page, that another improvement has been added to a very long list of them. The washing box contains an upper and lower washboard, which are self-adjustable. The upper one is suspended, and is a reciprocating rubber with two motions, whereby it accommodates itself to the quantity of clothes in the machine; a very necessary requirement. By gently adjusted springs, the rubber can wash the finest articles without the least danger of destroying their texture or tearing them.

The Emperor of Russia Dead.

By the latest news from Europe, the astounding intelligence has been received that Nicholas, Emperor of all the Russias, is dead. He died at St. Petersburgh on the morning of the 2nd March, of pulmonary apoplexy. What the effect of this will be on the present war in Europe, no one, at present, can tell. He appeared, a few weeks ago, to be the most important personage in the world—the very axis on which rotated all the great events of the European nations, consequently, the death of no other person, by common methods of reasoning, can affect public affairs so much.

The heir to his throne is his son, Alexander II, aged 37 years, an able and wise prince, it is said. We shall soon see whether Nicholas was the sole will of Russia, or he, though a despot, but the instrument of the nation's will.

English and American Intelligencer.

Messrs. Gardissal and Tolhausen have commenced the publication of a weekly paper in Paris bearing the above title. It is printed in English and French, and will be found very useful for all those who cannot read French, and who desire to get information respecting the Great Exhibition. It also gives a list of the American and English exhibitors. The names of forty American exhibitors, through S. H. Wales, Commissioner of this State, are given. A directory is given of the Protestant and English churches in Paris; and all the public places of resort, such as the Academy des Sciences, &c., &c.

Improved Caster for Billiard Tables.

MESSRS. EDITORS—In your closing remarks as appended to my "Improved Caster for Billiard Tables," you say, "This improvement might be profitably applied to writing tables and school desks." This is a mistake. It was not designed, nor can it be applied at all usefully to such purposes, as no perfect level is therein required. It is strictly intended to be applied to billiard or bagatelle tables in which the utmost accuracy is necessary. For such uses I wish the invention to stand upon its own merits.

F. L. ROUX, Patentee.

Charleston, S. C., March 13th, 1855.

[We were not mistaken in the remarks we made, although Mr. Roux disclaims any intention of the application of his invention to any other use than Billiard Tables. Desks fitted with feet capable of being easily raised and lowered to suit persons of different hights, or by raising to stand and write, and lowering to sit and write, must indeed be very convenient; any person can see this.

Glass Globes Unfit for Fish.

In the first place, the fish require abundance of air. Now, scarcely any other shape than a globular one contains so much water with so little exposure to the air. Fish, too, require shade, not when we choose to give it to them, but when they feel the want of it; and it need scarcely be observed that all day long a glass globe is in a blaze of light. Still more, the water in a globe must be daily changed, consequently the fish must be lifted out, either by the hand or a small net, and it is utterly impossible, however careful we may be, to handle or net these delicate little creatures without injuring them, at one time or another.

Gold Mining in Wales.

Two years ago there was a great ado made in England about such an abundance of gold being found in Wales, and it was said that England had an abundance of that metal within her own borders. Thousands upon thousands were expended on machines to extract the yellow metal from the Welsh gossan. Well, it turns out that they have been truly gossaned, for the Welsh gold has turned out to be gammon.

Extensive fires, we are sorry to hear, have been prevailing in the woods of Georgia and South Carolina.