For the Scientific American.

Japanning.

(*Continued from our last.*)

BLACK GROUNDS.

Black grounds for japans may be made by mixing ivory black with shellac varnish, or for coarse work, lamp black and the top coating of common seedlac varnish.

A common black japan may be made by painting a piece of work with drying oil (oil mixed with lead,) and putting said work into a stove not too hot but of such a degree, gradually raising the heat and keeping it up for a long time, so as not to burn the oil and make it blister. This process makes a very fair japan and requires no polishing

TORTOISE SHELL JAPAN.

This varnish is prepared by taking of good linseed oil one gallon and of umber half a pound, and boiling them together until the oil becomes very brown and thick, when they are strained through a cloth and boiled again until the composition is about the consistence of pitch, when it is fit for use. Having prepared this varnish, clean well the copper or iron plate or vessel that is to be varnished (japanned) and then lay vermillion mixed with shellac varnish, or with drying oil diluted with good turpentine, very thinly on the places intended to imitate the clean parts of the tortoise shell. When the vermillion is dry brush over the whole with the above umber varnish diluted to a due consistence with turpentine, and when it is set and firm, it must be put into a stove and undergo a strong heat for a long time, even two weeks will not hurt it. This is the ground for those beautiful snuff boxes and tea boards which are so much admired, and those grounds can be decorated with all kinds of paintings that fancy may suggest, and the work is all the better to be finished in an annealing oven.

PAINTING JAPAN WORK.

The colors to be painted are tempered generally in oil, which should have at least one fourth of its weight of gum sanderac or mastic dissolved in it, and it should be well diluted with turpentine, that the colors may be laid on thin and evenly. In some instances it does well to put on water colors or grounds of gold, which a skilful hand can do and manage so as to make the work appear as if it was embossed. These water colors are best prepared by means of isinglass size mixed with honey or sugar candy. These colors when laid on must receive a number of upper coats of the varnish we have described before.

In our next we shall treat of the finishing of japanned work.

For the Scientific American.

To Dye Indigo Blue on Cotton.

Good indigo is as high in price as cochineal, therefore this color is a valuable one not only on account of its permanency, but because the stuff that makes it is so expensive. It has, therefore, received great attention in the economising of the indigo, so that no particle of its coloring matter may be lost. The art of indigo blue dyeing, therefore is distinct in itself and it takes a long time to be master of it, and unless the operator has a good eye for color, he will never be profitable, either to himself or employer, as the feeding of the vats and the *striking* of different shades of color, all depend upon this faculty. This color is so well arranged and systematized by the dyer, that shades of half a cent in price per pound, in the ratio of prices are made and these must be done, so that there will just be a certain quantity of indigo taken up on the goods and none lost, for such a valuable dye drug cannot be lost with impunity in the smallest quantities.

TO SETT A BLUE VAT.

Take 10 lbs. of good Bengal or American indigo and grind it in water so that it will be as fine as flour, so fine that no grit will be felt in the fingers when rubbed between them.—Indigo grinds easier if steeped in warm water for four hours before being put into the grinding mill. Ten pounds of indigo thus ground is put into a clean cask, such as a wine or oil puncheon, filled nearly full with clear water. To this is added fourteen pounds of the sulphate of iron (copperas) and sixteen pounds of the flour new slacked pure lime. This mixture is to be well stirred every few hours for two or three days, when the liquor in the vat will have a fine deep green color, a sure sign that it is in good order for dyeing. There is one thing to be observed, however, which is, that the rake for stirring the vat must be of an oval shape, or like a disc on the end of a long stick, the disc to be of steel, very thin, as the lime, copperas and indigo unite together and stick in lumps at the bottom of the vat, and the vat must be raked from the bottom until all the stuffs are mixed in a wet powder.

Before a blue vat is used for dyeing, it must not have been disturbed after being raked for twelve hours, and then whatever is wanted to be dyed must be dipped and handled, so as not to disturb the sediment at the bottom, and then where a vat is used, it must be stirred up again and not touched until it is to be used for dyeing. A thin crust gathers on the surface of a blue vat after it is stirred up, which keeps out the action of the atmosphere, and if this thin crust is broken the indigo sinks and will not give out its color until stirred up and left to settle again. The cause of this is the effect of a law which is too abstract to be of any use to explain here, and it would take up too much space to do so. We merely state the fact. When cotton is dipped in a blue vat it is not blue but green, and holds this green color until it is exposed for a short time to the atmosphere, when oxygen is absorbed and a deep blue the result. Blue dyeing is, therefore, an unhealthy occupation, as in a close room the atmosphere is deprived of much of its vital principle. The deepness of blue shades are made by frequent dippings and airings. Two vats, the one set weaker than the other and the cotton squeezed out of the one (the weakest) aired and finished out of the strongest, will enable a small factory to do considerable work. We might describe the system of blue dyeing upon a large scale, but this of itself would require almost a volume of matter; our object is to describe so as to be a benefit to a number who would manufacture a little for themselves. Blue vats must be fed as it is termed, from time to time, that is when they look blackish, they must get a little copperas and lime added, and be well stirred up, as the indigo does not give out its coloring in the blue vat but very slowly, but more economically than by any other plan. By frequent dippings and feedings as we have directed a cotton blue vat will dye a great quantity of goods and work up all its indigo until the liquor is quite whitish. When the vat must be renewed, by saving all the clear liquor and throwing away all the grounds or sediment, and adding as before directed, filling up with clear water what is wanting in the old liquor to fill the vat.

Five vats are called a sett, and to work indigo very advantageously, five setts are necessary. A water tight wooden box may be used for a vat instead of a hogshead, and some vats are made of iron. The proportions we have given for setting a blue vat will enable any person to set a larger or smaller one, by varying the quantities of the dye drugs. The liquor wrung or dripped out of goods must not be thrown away, but always returned to the vat again.

Bengal Lights.

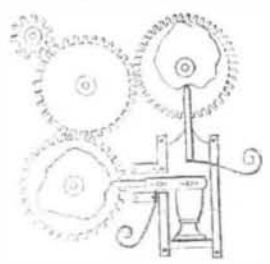
Take of the nitrate of potass (saltpetre) 8 parts, sublimed sulphur 4 parts and antimony 1 part, and let them all be mixed in powder and beat firmly into a stout iron cup and set on fire and it will give an intense luminous light and if a little camphor is added it is still more brilliant. Such lights have been made use of for signals at sea, by communicating to a great distance at night.

Thunder Powder.

If 3 parts of saltpetre, 2 parts of pearl ashes and 1 of sulphur be mixed well together, and sixty grains of this mixture be held over a candle in a metal spoon, or over a fire on a shovel, it will explode with a loud report.—This mixture must be preserved in a well corked phial.

MECHANICAL MOVEMENTS.

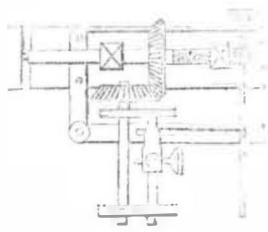
Curved Figures.



The above cut is a represeutation of a movement whereby irregular lines may be cut in a manner different from that of Blanchard's machine. The plan is not so simple, but it is much older and has been long known. By the proper construction and connection of the upper figure and the wheels being put in motion by the pinion and perpendicular and horizontal lines and points of equal length carried to the surface of the first and third wheel, will on being passed over the figure above describe curved lines on the block on the wheel below. Those lines may be so constructed as to produce from an original figure an endless number of duplicates, and by the lines between the upper and lower wheels being of various lengths, any size may be produced.

This cut may be a useful hint to many who are seeking to supersede the traverse mode of mechanical turning of patterns.

Curves.



This is another arrangement whereby spiral lines may be cut on revolving cylinders. The nut which is seen on the horizontal screw in the first figure is attached to a carriage on which is seen an arm fastened by two screws. At the extremity of this arm is a horizontal piece with a slot held at its opposite extremity by a long screw rod which also moves along with the carriage. Thus supposing the bevils to be put in motion, the slot piece would be traversing and the small pointer which is seen against the shaft of the horizontal bevil would remain stationary; but if the slot piece be placed in an oblique direction by means of the screw rod to the right, the pointer will be traversed along the shaft and describe a spiral line thereon.

Chloroform.

This substance, which has lately been discovered by Professor Simpson, of Edinburgh, is made as follows: Four pounds of chloride of lime is added to twelve pounds of water and twelve fluid ounces of rectified spirits and distilled as long as a dense liquid which sinks in the water that covers it over, is produced. Great care must be taken to have this pure, and the test is a perfect insolubility in water; if it mixes in water it is not pure, and it is apt to be attended if so used, with troublesome results. A few drops of it when placed in a handkerchief before the mouth, cause almost instant insensibility, acting far more rapidly than ether. It is inodorous and excites little or no coughing and is said not to cause headache or sickness and those unpleasant effects attending ether. It must be properly prepared and applied Prof. Simpson's discovery must be a great benefit to medical science. We are positive that it will perfectly cure whooping cough if it is properly applied.

Dying in Music.

A bird in captivity has been known to sing more and louder than usual, until it fell dead at the bottom of the cage, to solict attention to its deficiency of food, from the want of which it at last perished; and another instance is related where the little creature sang earnestly when surrounded by the flames of a burning house, Under such circumstances we may be allowed to suppose that an attentive ear might have detected a variation in the notes from the usual song: for under much less exciting circumstances a change is known to occur in the modulation.

A warning to Cockroaches.

A writer in the Express says; This being the season when the cockroach, the pest of our kitchens commence their nocturnal excursions, the following receipe may call forth the grateful acknowledgments of those of our readers who suffer from the presence of this loathsome insect.

Take a sixpenny loaf of wheat bread—the staler the better, reduce it to a crumb, (of course after paring off the crust)then in a pint of water put two teaspoonsful of cayenne pepper, one of pulverised orisseed, half a drachm of saltpetre; the same quantity of white lead, and a wine glass full of extract of hops.—Now throw in your crumbs of bread, and digest for six hours in a moderate heat; then bottle it and keep it in a dark cellar. Three or four drops of this liquor or rather pastry, on a lump of sugar and some dozen lumps strewed about the kitchen will remove the pest in less than no time.

To drive away Ants.

I saw in your paper a plan to drive away red ants by feeding them with bacon; but the following is better than that; it is to drive away black ants; when they trouble your sugar box, &c., just roll up a small piece of camphor gum in a paper, and put inside the box, and it will soon kill or disperse all these intruders; sage tea leaves thrown in their way are also very troublesome to them —*Ohio Cultivator.*

The Shooting Fish.

A fish in Java called the Jaculator, catches flies and insects by throwing water from its mouth. It is said that it seldom misses its aim at a distance of five or six feet, bringing down a fly by a single drop.

Whooping Cough.

A teaspoonful of oil to a tablespoonful of molaases, a teaspoonful of the mixture given whenever the cough is troublesome, will afford relief at once it is said, and in a few days effect a cure. The same remedy it is also affirmed relieves the croup however violent the attack.