Scientific Museum.

For the Scientific American.

Experiments with Metals.

"A single experiment will impart more real knowledge than can can be derived from reading a volume."

Iron.—1. A steel watch-spring tipped with sulphur and lowered into a jar of oxygen gas, bursts into a most magnificent combustion; the oxyde of iron which is formed falls down in burning globules, like glowing meteors. 2. Mix 500 grains of flour of sulphur with 1000 of bright iron-filings in a Florence flask, and heat it on a chafer of red-hot cinders. Heat and light are evolved, and sulphuret of iron (pyrites) is formed—used in preparing sulphuretted hydrogen. 3. Dissolve fifty grains of green vitriol (copperas) in 2 ounces of water, and pour a few drops into 4 glasses, previously filled nearly full of water. Into one pour a solution of potash; oxyde of iron falls, which soon becomes rust. To another, add pearlash, carbonate of iron falls. Add prussiate of potash to the third, and blue ink is formed. To the fourth add an infusion of galls, and black ink appears. Add oxalic acid to the last, and the color disappears. Add to each perhydrochlorate of iron and observe the difference of tint.

Lead.—1. Dissolve 220 grains of sugar of lead in 4½ oz. of water, and pour into 5 glasses; to the first add pearlash, and white lead precipitates; to another add hydro-sulphuret of ammonia, the solution turns black; to the third add an infusion of galls, a white precipitate is produced; to the next add iodide of potassium, the liquid becomes yellow; suspend in the fifth a piece of zinc, the lead will be deposited on it in beautiful crystalline plates, forming the lead-tree (arbor saturni.)

Copper.—1. Plunge copper at a red heat under water and it becomes very tenacious; cool it slowly and it becomes brittle. 2. Put the blade of a knife in a solution of blue vitriol, it will be coated with copper. 3. Add ammonia (hartshorn) to a solution of blue vitriol, it will lose its color; add more, and the liquid assumes a deep blue color. 4. Into 4 glasses, containing a solution of blue vitriol, add the tests applied to iron, (exp. 3), the tints will be different. 5. To pieces of copper add strong nitric acid (aqua fortis), deep red fumes of nitric oxyde, a poisonous gas, will be evolved.

Zinc.—1. Dissolve tinin muriatic acid (spirit of salt) with a little aqua fortis—tin mordant, used by dyers, is formed; add a little soda and putty of tin is precipitated, which, when heated, becomes a lemon-yellow powder. 2. Melt 90 parts of copper with 10 of tin, gun-metal, one of the strongest alloys known, is formed. J. O.

(To be Continued.)

Spirits of Turpentine a Cure for Poison.

If any person should be stung by a bee or other insect, rub some spirits of turpentine on the place, and pain will nearly cease in one minute. It is said the pain arising from the bite of a copperhead snake may be arrested in a few minutes, by the continued application of this article, and from my own knowledge of its effects in other cases, I have not the least doubt of it. The effect of all poison is to contract the blood vessels and prevent a free circulation; the natural consequence is pain and inflammation immediately. Spirits of turpentine, by its penetrating and expanding qualities, soon overcome the difficulty.—[Farmer's Cabinet.

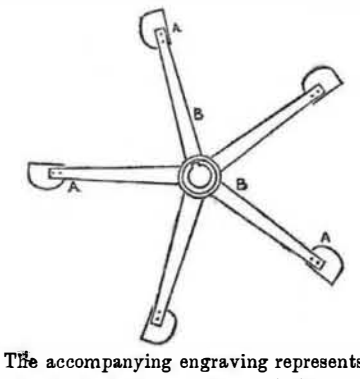
[We have often tried the spirits of turpentine for musquito bites, and such small fry, but never found the least benefit from it. We notice this because we saw the above quoted in another paper, stating that it was good for all kinds of *bites*. The incorrectness of the above lies in the statement that "all poisons contract the blood vessels and prevent a free circulation." If this was true then the poisons would do no harm, but it is not true, for the lymphatic vessels take up the poison, and it is carried to the pulmonary artery, thence from the right ventricle of the lungs, where the air at once, instead of merely oxidizing the blood, produces decomposition, and death ensues. The grand object with all poisons is to contract the lymphatic and blood vessels above the wound, to prevent the poison being carried to the lungs.

History of Propellers and Steam Navigation.

[Continued from page 384.]

HOLLOW CONICAL PADDLES.

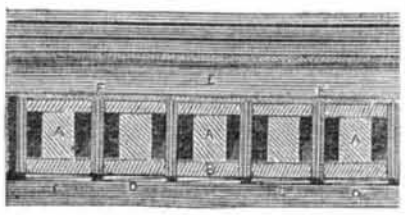
Fig. 79.



The accompanying engraving represents the paddles made of hollow cones, A A, made of metal of a sufficient thickness, and cut at the vertex at right angles to the plane of its base, so as to divide them into two equal parts, which are affixed to the arms, B B, as represented. These half cones may vary in number. The best form is the half cone, with the angle of 32 degrees at the plane of the base, but by extending the surface of the half cone a greater propelling force is the result. This invention is the subject of a patent in England—the inventor being a Gent., as he styles himself—named Thomas Parlour, of Holloway. Experiments were made by Mr. Ewbank, (to be found in his Report,) which prove conclusively that hollow drums or cones are not the things for paddles, as some have supposed.

STEVENS' NEW PLAN TO INCREASE THE SPEED OF STEAMBOATS.

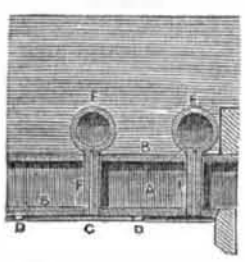
Fig. 80.



A great number have heard that Mr. Francis B. Stevens, of Hoboken, N. Y., had invented a new plan for increasing the speed of steamboats by interposing a stratum of air between the immersed surface of the vessel and the water, but few know any more about it, although it has been patented both in America and in Europe, in 1847.

Figure 1 is a longitudinal section through the bottom of the vessel; and fig. 2 is a transverse section; A A are the timbers of the bottom of the vessel, and B is the planking; C C are pieces of planking of an angular shape, shown first on the planking forming a series of recesses upon the bottom of the vessel, or these recesses may be formed out of the plank-

Fig. 81.



ing itself. These recesses are in a series, divided by strips, D, and run along the whole length of the vessel. Running fore and aft along the whole bottom, inside, are trunks, E E, from which are small branch pipes, F F, through the bottom of the vessel, one at least for each recess, and terminating on the outside behind the angular shaped pieces, C C. This position of the pipes behind the base of the angles, C C, prevents the water from entering the pipes when the vessel is in motion. The bases of the angular pieces being laid towards the stern of the vessel, the main pipes, E, communicate with the air-compressing apparatus by which the air is forced in through the system of conduits, and the recesses kept charged with a stratum of atmospheric air.

A steamboat constructed upon this plan has been employed by Mr. Stevens, and was laid up a short time since, at Hoboken, affording an opportunity for examining her construction. It does not appear to embrace any economical principle, whereby with the same power, the speed of a steamboat can be increased in the least. It was invented to get rid of frictional surface, but the cure is worse than the disease.

Flemish Lace Makers and Lace Making.

The spinning of the fine thread used for lace-making in the Netherlands, is an operation demanding so high a degree of minute caee and vigilant attention, that it is impossible it can be ever taken from human hands by machinery. None but Belgian fingers are skilled in this art. The very finest sort of this thread is made in Brussels, in damp, underground cellars, for it is so extremely delicate that it is liable to break by contact with the dry air above ground; and it is obtained in subterraneous atmospheres. There are numbers of old Belgian thread-makers who, like spiders, have passed the best part of their lives spinning in cellars. This sort of occupation naturally has an injurious effect upon the health, and therefore, to induce people to follow it, they are highly paid.

To form an accurate idea of this occupation, it is necessary to see a Brabant thread-spinner at her work. She carefully examines every thread, watching it closely as she draws it off the distaff; and that she may see it the more distinctly, a piece of dark blue paper is used as a back ground for the flax. Whenever the spinner notices the unevenness, she stops the evelution of her wheel, breaks off the faulty piece of flax, and then resumes her spinning. This fine flax being as costly as gold, the pieces thus broken off are carefully laid aside to be used in other ways.

Notwithstanding the overwhelming supply of imitations which modern ingenuity has created, real Brussels lace has maintained its value, like the precious stones and metals.—Fashion has adhered with wonderful pertinacity to the quaint old patterns of former times.

Each of the lace making towns of Belgium excels in one particular description of lace; in other words, each has his own point. Hence the terms point de Bruxelles, point de Malines, point de Valenciennes, &c.

Many of the lace workers live and die in the houses in which they were born, and most of them understand and practice only the stitches which their mothers and grandmothers worked before them. The consequence is, that certain points have become unchangeably fixed in particular towns or districts. Fashion assigns to each a particular place and purpose; for example, the point de Malines (machine lace) is used chiefly for trimming night dresses, pillow cases, &c., the point de Valenciennes (Valenciennes lace) is employed for ordinary wear, or negligee; but the more rich and costly point de Bruxelles (Brussels lace) is reserved for bridal and ball dresses, and for the robes of queens and courtly ladies.

Egyptian Superstitions.

The beetle was an emblem of the sun, to which deity it was peculiarly sacred; and it is often represented as in a boat, with extended wings, holding in its claws the globe of the sun or elevated in the firmament as a type of that luminary in the meridian. Figures of other deities are often seen praying to it when in this character. It was also an emblem of Pthah, or the creative power; it was, moreover, a symbol of the world: and is frequently figured as an astronomical sign, and in connection with funeral rites. In some one or other of the acceptations in which it was honored, its figure was engraved on seals, was cut in stone as a separate object, and was used in all kinds of ornaments, particularly rings and necklaces. Some of larger than common size frequently had a prayer or legend connected with the dead engraved on them; and a winged beetle was usually placed upon the bodies that were embalmed according to the most expensive process. The beetle was not only venerated when alive, but embalmed after death and some have been found in that state at Thebes. Considerable ingenuity has been exercised in order to discover the real sacred beetle of Egypt, and to ascertain to what extent other species may have partaken of the honors paid to that one. The species usually represented appears to be the *Scarabaeus sacer* of Linnaeus, and which is still very common in every part of Egypt. It is about the size of a common beetle, and its general color is also black; but it is distinguished by a broad white band upon the interior margin of its oval corselet. Perhaps the most remarkable, and certainly the most gigantic, of ancient Egyptian representations of the sacred beetle, is that in the British Museum, carved out of a block of a greenish-coloured granite.