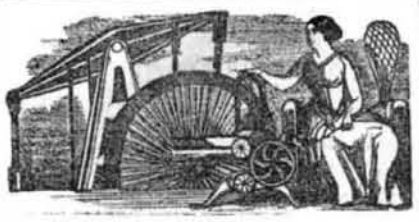


New Inventions.

New Machine for Carving.

Mr. W. B. Gleason of Boston, Mass. has invented a machine for carving ornamental work such as the legs of piano fortes, tables &c. It can also carve statues and cornice work, in fact it can carve any kind of ornamental work, and any figure. A pattern is used from which to carve duplicates, one, two, or more; or it can produce the reverse surface of the pattern, such as an elevated part for the depresson on the pattern, or vice versa,—a fac simile of the pattern. The pattern does not revolve, but is moved by an intermittant rotary motion, while a tracer upon a sliding frame like that of a lathe, traces a horizontal section of the pattern and guides the carving tools, one or more, to carve a fac simile on the rough blocks of a horizontal section of the pattern. One pattern will answer to carve a number of blocks at once. The inventor has taken measuaes to secure a patent, and we hope to present an engraving of the machine to our readers at some future period

New Discovery for Soldering Iron or Steel.

Mr. W. H. Clement of Warsaw, Alabama, has discovered a new composition whereby he can solder pieces of iron or steel, either in plates, or in other forms. The plates of iron are soldered together as plates of tin by the common process. We have seen some rusty strips of steel beautifully soldered by this composition, without the necessity of scouring the edges, and it was done as easily and quick as a tinker would patch up a seam in a milk pan. Mr. Clement has taken the usual measures to secure a patent.

Manufacture of Iron.

Gideon G. Dennis, Esq. of the Mount Hope Mills, Portsmouth, R. I. has made several very valuable improvements in the manufacture of iron, one of which he has disposed of for $30,000.

Explosion Preventer.

Mr. Daniel Burns, of Detroit, Mich., has invented an apparatus for the prevention of the explosion of steam boilers, and also to prevent the breaking down of engines. It is upon the electric principle, and the inventor feels confident that danger from explosion may be entirely obviated by the use of his improvement. The principle of this invention has not been made known to the public, as the inventor is about to apply for letters patent.

To Prepare Cotton Cloth to write on as a Substitute for Paper.

The cloth must be singed, the same as for calico printing to remove the loose fibre, and it must be bleached, after this it must be run through a solution of one pound of resin dissolved in one gallon of a solution of potash, or soda, in which is dissolved about 4 ounces of the alkali, or as a substitue for this but more expensive, the cloth may be run through a solution of resin dissolved in alcohol and then diluted with water. After this the cloth is run through a solution of one pound of alum dissolved in one gallon of water, and well squeezed out of this, when it is then passed through a solution of starch or gum to give it stiffness and fill up the interstices of the fabric. The cloth is then dried by being pressed first through pressing rollers and dried in a stove room, or, over hot copper cylinders heated by steam. The cloth is then pressed between sheets of pasteboard with the hot press to glaze it in sheets, or it may be glazed by the friction rollers in the same way as cloth is calendered. Paper manufacturers understand how to glaze it. There is considerable of this cloth imported for drawings, it being more durable than paper, and it can be wrote upon in the same way as paper.

New Pigments.

The following new paints are described in the Philadelphia Ledger, as discoveries made by H. M. A. Mahn, last year.

COLUMBIAN VERDIGRIS.

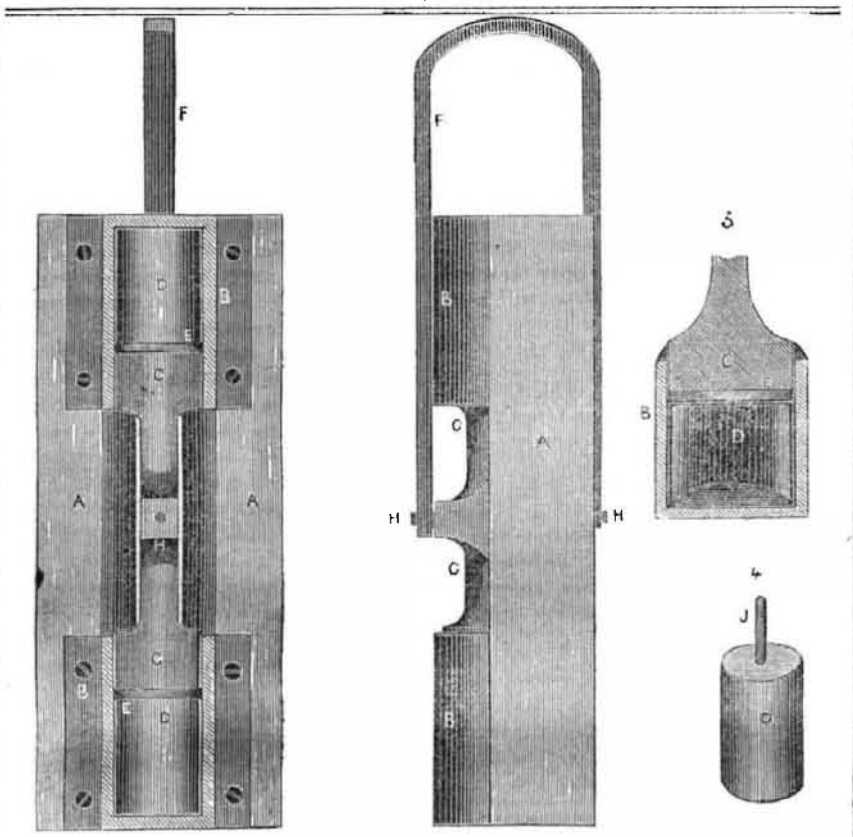
Sulphate of copper, 2 parts; alum 1 part; brown sugar 8 parts, and yellow soap 8 parts; Make a hot solution of the blue vitriol in a proper quantity of water, then add the alum, then put in the sugar, which will almost instantly convert the blue into green; the solution of soap must now be added, which must have been previously made; both solutions being boiling hot at the moment of their junction. The article supercedes the old verdigris, both in durability and color, and will stand all kinds of weather.

MAHN'S GREEN.

This pigment was discovered May 29, 1848. Its preparation is as follows :—1 pound sulphate of copper, 2 ounces alum, and 1 pound good light yellow soap; make a solution of the vitriol in a sufficient quantity of hot water, then add the alum, then pour in the soap, having also been prepared in boiling water to the consistency of cream—a beautiful green immediately floats on the surface.

Several other kinds can be made, by varying the proportions or adopting the different methods. This paint can be used immediately on being made, by being dissolved in a little warm oil or spirits of turpentine and mixed with some white lead or chrome yellow, &c. so as to make it corporeal and heavy.

For Japan ware it is excellent, without any admixture; for making marine paint it is very good; for coloring wax, it is better than most other greens, and in point of cheapness and facility of its production it excels all other pigments



This is the invention of Mr. William Beers, of New Haven, Connecticut, and which was noticed in No. 40 this vol. Scientific American. The nature of it consists in providing an elastic diaphragm, or vulcanized india rubber bag, to contain the air in the cylinder of the air spring, so that there can be no fears of the air escaping from leakage. The accompanying engravings represent four views placed vertically. Fig. 1 is a vertical section. Fig. 2 a side view. Fig. 3 a vertical section of cylinder, air bag, and piston; and fig. 4 a view of the air bag or elastic diaphragm. The same letters on all, refer to like parts. A, is that part of the truck to which the spring is secured. B B, represents the cylinders. They are cast with side flanges by which they are screwed down to the truck, as represented in fig. 1. C C, are the pistons fitted into the cylinders B B. If the pistons were fitted and packed air tight in the cylinders and the cylinders filled with compressed air, a most powerful air spring would thus be formed. This has been done heretofore, but the least leak between the piston and the sides of the air cylinder at once destroys its utility. This invention removes that evil in a very simple manner. D, is a bag of vulcanized india rubber, in which the compressed air is confined, it being filled by the small tube J, of the same material, which can be tied up perfectly tight. E, is a leather washer placed over the bag D, below the piston C. F, is a buffer rod or link, and is only placed here to show how the two pistons air cylinders or springs can be connected to operate simultaneously by one connecting rod at H H; but the principle is as applicable to a spring composed of one piston and cylinder as it is to two. These engravings and this description will convey to any person a clear understanding of the invention. It is founded on the compressibility and elasticity of the atmosphere. It has been held to be superior to any artificial substance for graduating the strain upon important parts of carriages, and thus affording an excellent medium to prevent much breakage from sudden concussions, &c. as the air can be compressed into a very small space by pressure, but after the pressure is removed, it immediately expands to its natural bulk, occupying the same space as before. No wear can destroy its elasticity and no power but a chemical one change its nature. We mentioned before that Mr. Beers han taken measures to secure a patent.

New Uses of Granite.

Those who have taunted New-England with producing nothing but granite, may change their tune. A Mr. McDonald, in Scotland has discovered a method of calcining granite to a fine clay of extraordinary strength for pottery especially for making water-pipes, some of which are as large as 18 inches bore. And a discovery has been made in Ireland that the granite on an extent of 70 miles in Wexford, Ireland, contains so large a proportion of potash that the alkali can be extracted by a chemical process, so as to become an article of commerce. It is estimated that there are 2,000 tons of potash, the produce of America, consumed annually in England and Scotland, the present cost of which is £40 per ton; and that by working the granite of Dalkey, which extends inland to Sandyford, the same quantity would be extracted by means of the capital of $10,000 and sold at £20 per ton, yielding a revenue of £40,000, remunerate the capitalists and diffuse the blessing of employment among the people, and not only render it quite impossible for the Americans to compete with the Irish, but really push an Irish trade in potash into the American Continent.

The above is from the Dublin Evening Post an Irish paper. Ireland has great natural capabilities but there is very little enterprise for manufactures or commerce among her wealthy men. We therefore have no hopes of her granite potash being able to compete with the American in her own market.

Powder to make Iron Malleable, and to Clean it.

Take 1 3-4 lb. of the peroxide of magnese, 3 3-4 lbs. of common salt, and 10 ozs. of potter's clay—the clay and the common salt are the most important elements. By the heat of the puddle oven, the salt mixed with the clay is decomposed. The natrium, either on account of the air, or the peroxide of maganese, attaches itself to the oxygen, and changes to natron, which, with the argillaneous and quartzose earth, forms itself into a silicate, or aluminate, of natron, and goes in the slag. The peroxide of manganese loses a great quantity of its oxygen, and forms itself as oxide of manganese with the silicious earth (from the silicum of the pig iron) to a silicate, and prevents the loss of the metal. This free chlorine, which, with constant stirring is brought to bear on the mass, attaches itself to ths sulphur, phosphorus, or arsenic, and makes combinations, which are carried out of the furnace through the grate. From this it will be seen, that this method not only cleans the iron, but shortens considerably the process of rendering it malleable. The quantity of peroxide of manganese can be considerably diminished, when it is worked in open hearths, as in some places in Germany. It was endeavored to introduce this method of iron smelting by cupola furnaces, but, on account of various reasons, it could not be carried into execution. It was proposed to employ sal-ammoniac instead of salt; the chlorine in sal-ammoniac is double the quantity of that contained in an equal weight of salt. No clay is required, it does not increase the slags, and the quantity of hydrogen gas in sal-ammoniac (7 or 8 per cent.) contributes much to the cleansing of the iron. The expensive cost of sal-ammoniac has prevented its employment on a large scale.

Railroad Speed and Power.

By a pamphlet lately published in England, we learn that "to master an ascending gradient of one foot in 300 feet distance, a trifling rise, a traction force is required twice as great as is sufficient to move the same speed along a level railroad; also the greater speed required on any line, the greater must be the power employed. A good locomotive, of the heaviest kind now used, will draw a train of fifty loaded wagons, or a gross weight of 375 tons, at a speed of from 15 to 20 miles an hour, but the same engine will only be able to draw, on the same line, a train of twenty-five wagons —being half of the above weight—at a speed of 30 miles an hour. Thus the 30 miles speed cost double the slower speed of 15 or 20 miles besides the great additional wear and tear.—the demand for power increases in rapid proportion to the rate of speed. Going at the rate of 10 miles an hour, a locomotive will draw 250 tons; but push the speed to 30 miles an hour, and it will draw only 28 tons On the Continent, railway trains run at a low rate of speed, say 15 to 20 miles an hour, and thus enable companies to charge light fares, while they ensure the safety of the passengers."

A Cuba Rocking Chair.

Mr. Bryant in his letters from Havana, says that the Creole ladies love to recline on sofas; "their houses are filled with rocking chairs imported from the United States, they are fond of sitting in chairs tilted against the wall, as we do sometimes at home. Indeed they go beyond us in this respect; for in Cuba they have invented a kind of chair which by lowering the back and raising the knees, places the sitter in precisely the same position he would take if he sat in a chair leaning backwards against the wall. It is a luxurious attitude I must own, and I do not wonder that it is a favorite with lazy people, for it relieves one of all trouble of keeping the body upright."

Steam Hod Carrier.

At the mill yard of the Lowell Manufacturing Co., Mass., the bricks and mortar of the New Woolen Mill are all raised by the power of a steam engine. The engine is about 6 horse power.