

## New Inventions.

**Improvement in Manufacture of Iron.**

An iron master in Fragen, Germany, has lately taken out a patent for a new species of puddling furnace, which he employs for the purpose of converting the iron into steel, during the puddling operation. The product is stated to be of superior quality, and is, of course, much cheaper.

[The above we take from an exchange. We have noticed it in more than one. It must refer to the celebrated iron works of Yasselfragan, and the improvement we are inclined to believe, is the same as that described on page 322, Vol. 3, Sci. Am.]

By the Newark (N. J.) Sentinel, we learn that a Mr. Renton, of that place, has also made some valuable discoveries to cheapen the price of iron, by lessening the cost of manufacture. We have seen and noticed quite a number of recent alleged improvements in the manufacture of iron in our country. The notices which we have seen of these improvements are very flattering, and yet, for all this, we are told by Conventions of Iron Masters, that we cannot compete with the foreign manufacturers.—There must be something wrong on the one side or the other, we cannot solve the difficulty, we mean in respect to the economy of the manufacture on both sides of the water.

**Gutta Percha Tires for Wheels.**

We see it noticed in three or four of our Philadelphia exchanges, that some tires of carriages have been made in that city of gutta percha. In our opinion no tire can equal one made of iron. We have never seen any prepared gutta percha that could endure much heat without becoming soft, and owing to this fact it is not suitable for bands to drive machinery in warm apartments. Gutta percha-horse harness was made in England, and was found to be well adapted for *drawing* in warm weather, or when the animal was warm, as the traces expanded beautifully and allowed the animal, donkey, or *rosinante* to *clasp it over* a number of rods before the cart or wagon.

But gutta percha is a very valuable substance, and possesses qualities unknown to any other vegetable product. At 60° of heat it becomes soft and capable of moulding into any form, and at 40° it becomes hard as horn. Plumbago and the sulphuret of antimony are the best substances with which we are acquainted to render gutta percha a non-conductor of heat, and capable of standing changes in the weather.

**Plan for Lowering Steamboat Tunnels.**

A model of an arrangement for lowering or raising steamboat chimneys, says the Philadelphia Ledger, has been made by Mr. Mason, of that city, for captain R. F. Loper, and will be sent to Washington for the purpose of being used on the trial of the Wheeling Bridge Case, before the Supreme Court. The upper part of the chimney slides into the lower part, and is calculated to reduce the height of the chimneys, when passing the bridge, from 90 to 50 feet. The upper part is raised or lowered by means of chains attached to the lower end of the movable portion by means of a winch on either side.

**New Railroad Chair.**

Mr. L. A. Gouch, of this city has invented a new railroad chair, which has been highly approved of by eminent civil engineers. It is adapted to secure the rail by one spike, to fasten only one jaw, and simply by the removing of one spike the rail can be lifted at any time. There is also a provision on it to prevent the moving of the rail longitudinally, as well as securing it down and from lateral motion. This is a very important object. He has taken measures to secure it by patent both at home and in Europe.

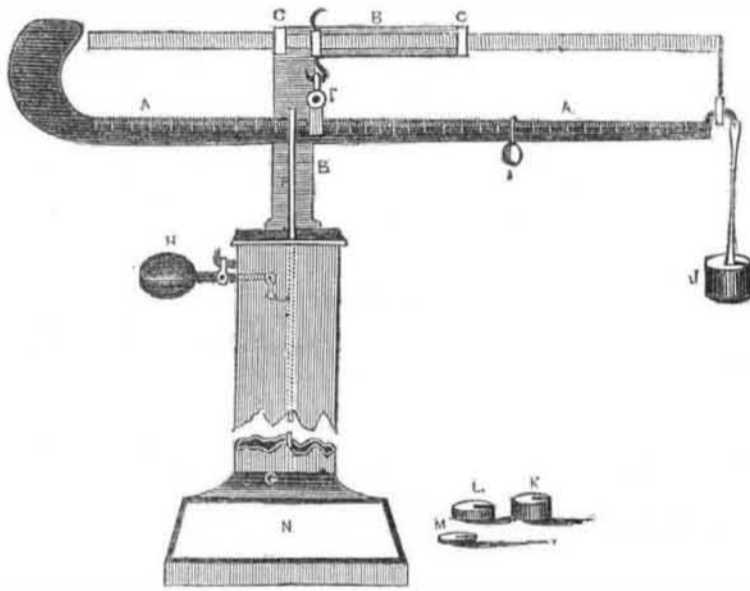
The American Gutta Percha Co., proposes to connect the President's House, at Washington, and the Capitol, and the several Departments, with gutta-percha speaking-tubes, laid under ground, and to guarantee that ordinary conversation can be carried on between these remote points with as much fidelity as if the different parties were in the same room

**FLINT'S COMPUTING SCALES.**

This invention is a scale resembling Fairbank's in appearance. It is arranged to give the amount of any weight in dollars and cents, the given price being understood. The correct weight is also given. It is a calculating, weighing scale, and is a check upon the calculators of weight. It is well adapted to the use of country stores, where part of the business is barter. The scale of figures represents prices, and the weight can be so fixed that the exact given amount in barter will be designated in dollars and cents, by shifting the position of the fulcrum to suit the price agreed upon. A A is the weighing beam. B is an iron standard, with a shoulder, B, fastened on

A, to raise the weight. I is the indicating weight, which is like those in common use. M L K, are extra weights, to be put on the rod from which the weight, J, is suspended for the use of centennial quantities. H is a ballancing lever of the stirrup, which is attached to the scale platform, N.

If it is desired to know the price of a bale of merchandise, or a barrel of pork, at 10 cents per pound, (the beam, A, being divided into 100ths and decimals,) the fulcrum of the beam is shifted until the stirrup, F, is over 10, when by sliding the indicating weight, I, along, as is known to all till the beam comes to an equilibrium, it will indicate 101 pounds at



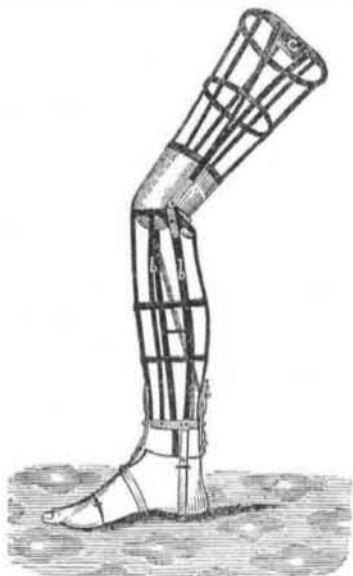
the top of the upright case. C C are metal loops, through which the top parallel bar slides, and which is attached by a stirrup loop to the beam, A, to prevent too great a vibration of the bearer. D is a loop which forms the shifting fulcrum of the beam, A. It is connected to the parallel bar above, and they are both shifted endwise when required for weighing. F is the stirrup that is connected with the scale, N, and the beam, A. It is double or of a loop form at the top, with the beam passing through it, and any weight placed upon the scale, N, will act by this rod upon the beam,

10 cents, 10,10. It is by changing the fulcrum and the plan of steadying the beam that these objects are nicely attained. This beam might be applied to all scales now in use, and it is at once a ready-reckoner for the valuation of all articles to be weighed.

This scale was patented by Messrs. T. & W. Flint, of Westford, Mass., on the 20th of last March. Mr. E. C. Jones is in this city, at Earles' Hotel, as agent for the patentees, and a model is at No. 54 Wall street. Arrangements have been made for their manufacture in this city.

**Yerger's Artificial Leg.**

This leg is the invention of Mr. Geo. W. Yerger, of Philadelphia, the inventor of the "Ankle Supporter," which was illustrated and described on page 308, Vol. 4, Scientific American. The proprietors of this leg and the ankle apparatus, are Messrs. Yerger & Ord, Philadelphia.



Mr. Yerger was in this city last week and exhibited his invention to Dr. Mott and the most eminent surgeons in our city. Only one opinion has been expressed about it by them, and that is, "it has no equal." It is called the Metallic Skeleton Leg, and it embraces a very simple and beautiful compensation for the natural muscle that operates the leg, from the knee downwards—viz., a coiled spring, which always brings forward the foot to its proper position. The old kind of legs, as a general thing, are heavy, weighing from six to eighteen pounds, rendering it very laborious

for a man to carry one. They also had not a very natural motion at the knee and ankle joints, and they were not well adapted to the various forms of amputation. This leg obviates all these evils. It is constructed of fine steel ribs, put together so that one piece sustains the other, enabling it to support three times the weight of the bearer. The knee is a true ball joint, A, working into its circular skeleton socket, upon two fine centre steel pins, one at each side, as now shown in the cut; b b are the fine steel ribs, showing the coiled spring between them, which is secured above to the circular knee ball, and below to the back part of the ankle. It is therefore obvious that this spring will always bring forward the foot to its proper position, and that a very little time will be required before its peculiar use in this respect will be fully understood by the person who is to use it. This has been proven by all those who have used them. The weight of a full leg never exceeds four pounds. C is the receptacle for the stump, and it affords a most excellent form to keep it cool—an important consideration. At the ankles, one before and one behind, are small studs that work up and down in small grooves to give the requisite play to the bend of the foot. This makes it very easy for the wearer. A gentleman with one of these legs on, who had it but for a short time, came all the way from Philadelphia to show how well he could walk, out of respect and gratitude to the inventor. It was a source of pleasure to us to see the gladness which filled his heart. Any communication (p. p.) addressed to Messrs. Geo. W. Yerger & J. F. Ord, Philadelphia, will meet with prompt attention.

Good rice is grown upon the uplands of Georgia, on the pine lands, yielding about fifty bushels to the acre.

**Foreign Invention.**

Abstract of some English Patents recently issued at the London Patent Office, November, 1849 :

**COTTON MACHINERY.**

George Henry Dodge, of the United States—now of Manchester, England, for improvements in machinery for spinning and doubling cotton yarns, and apparatus for winding, reeling, balling and spooling it. This invention of Mr. Dodge was exhibited by his father at the late Fair of the Institute, held in this city, and was noticed by us at the time. It is a most important invention to our cotton manufacturers.

Robert Sutcliffe, of Idle, in Yorkshire, obtained a patent for employing a fixed stud to carry the bobbin instead of a revolving spindle, as is ordinarily the case in throstle-frames.

Samuel Waller, of Bradford, in Yorkshire, for improvements in Power Looms. This is for weaving figured fabrics, and it consists in using a series of small shuttles attached to the *slay* of the loom, and these carry the threads for weaving the figures upon the fabric, independent of the ordinary weft threads which form the body of the fabric.

**MANUFACTURE OF SUGAR.**

Messrs. Robert and John Oxland, of Plymouth, for improvements in the manufacture of Sugar. This improvement consists in employing the acetate of alumina for removing the color from the syrup while refining. The acetate may be added to the syrup either before or after it is concentrated. After it is added the temperature is raised to 220° Fahr., until the greater portion of the acid is evolved. An equal quantity of tannin in water is then added, which precipitates the alumina and the carbonate of lime, which is employed as usual in the first boiling. About four lbs. of alumina dissolved in acetic acid is sufficient for about one ton of sugar.

**INDIA RUBBER SOLVENTS.**

George Simpson and Thomas Forster, chemists, for improvements in solvents to treat india rubber and other gums. The substance used is the chloride of carbon in a liquid state. TO PREVENT INCRUSTATIONS IN STEAM BOILERS.

Mr. J. Horsley, in the Isle of Wight, for substances to prevent incrustations. He employs for ordinary sea water, two drachms of the oxalate of potassa combined with two ounces of ammonia phosphate of soda to each gallon of water operated on. This precipitates the adventitious matter in the boiler, and keeps it from forming on the plates in crusts. It is evident that this is far too expensive an anti-crustant ever to come into use; but he states that this mixture will render salt water fresh and fit for common cooking uses. This itself is a chemical fact of no small value.

**METAL ALLOYS.**

Alexander Parks, of Harborne, Stafford Co., for improvements for making certain alloys. This invention consists in using phosphorus to assist different metals to combine and form valuable metal alloys—it possessing the quality of lowering their melting points. Metals can be coated with alloys thus formed, while the alloys are in a molten state, by dipping the metal to be coated, which must be clean, into it. The metal to be coated must have a higher melting point than the molten alloy. An alloy can be made of copper, chromium, tungsten, or manganese, by mixing the sulphate of copper with any of the metals mentioned, and heating them in a crucible with a flux of chareoal, to which is added, from time to time, a little phosphorus.

**New Psychological Discovery.**

Raspail, the French socialist, has pointed out, the Medical Journal says, one of the powers of camphor, which, in a psychological point of view, is most important, that of putting a stop to that fearful insomnolence which accompanies the incubation and first development of insanity; when opium, hysocyamus, conilum, stramonium, and "all the drowsy syrups of the East" fail to produce any effect, a grain of camphor, formed into a pill, and followed by a draught of an ounce and a half of the infusion of hops, mixed with five drops of sulphuric ether, is his usual remedy for procuring sleep.