

heard of a number of cases, in which doctors who have made valuable inventions in the construction of surgical apparatus, or of machinery for preparing certain kinds of herbs, or other medical substances, and who intended to secure the benefits of their inventions by applying for patents on the same, were threatened with immediate ejection from the medical society if they insisted in patenting their inventions. The non-inventors argued that the mechanical inventions came under the same head with professional suggestions, and had to be surrendered accordingly.

It may not be out of the way to call your attention to another danger which threatens the community, although at present only that of the State of New York. The convention now assembled to revise the State constitution, has a bill under consideration which has the object of taking from the physicians the right to prepare and forward medicines, such a right being solely vested in the apothecaries. This is a blow aimed solely against the homœopaths, who have to prepare their own medicines, and who will by this act be banished from the State. For allopaths, this bill may be very beneficial, but if the convention should be short-sighted enough to adopt it, they will destroy a branch of the medical profession which is already very popular, and increasing in the number of its adherents very rapidly. V. B. New York city.

#### The Meteorograph an American Invention.

MESSRS. EDITORS:—In your issue of January 11th, page 19, I have just read an extract from the *Nation*, describing partially an instrument called the Meteorograph, which is said to have been invented by Father Secchi, of Rome, and to have received a grand prize at the Paris Exposition. Doubtless, it was a very ingenious apparatus, and it has a very expressive name, but your correspondent had the honor to exhibit drawings, and explain the construction of an invention remarkably similar (except in its connection with a galvanic battery), at the Washington meeting of the American Association for the Advancement of Science, in May, 1854. Can the word, *Meteorograph*, be found in any publication prior to newspaper reports of that paper?

The "Proceedings of the Eighth Meeting of the American Association" contain a partial description of this automatic meteorological register, page 224. It is there described as recording for every minute of time, night or day, for periods of one week, on each paper, the direction and force of the wind; the hygrometric, barometric, and thermometric state of the atmosphere; also, the time of the commencement, duration, and other phenomena of rain storms, as well as the quantity of water precipitated. A brief reference is also made to this apparatus in the *Annual of Scientific Discovery* for 1855.

I inclose a description of the invention, from the *Portsmouth (Va.) Globe*, of April 24th, 1854, written by the editor who examined the Meteorograph in operation.

Prior to the writer's invention (and he made the name as well as the machine) the most efficient anemometer was Osler's, which was expensive and complicated, while this was described as "marvellously simple." A few cylinders, moved by a common eight-day clock, were covered with paper, on which the meteorogram was recorded as described, in the proceedings of the American Association for the Advancement of Science above referred to.

I send this communication for your consideration of the propriety of placing on record, in the widely circulated and carefully preserved columns of the *SCIENTIFIC AMERICAN*, the date and origin of the Meteorograph.

Kenansville, Duplin county, N. C. N. B. WEBSTER.

#### Gold in Orange County, N. Y.

MESSRS. EDITORS:—Very soon I think we shall be overflowing with petroleum and rich in gold. A gold mine has recently been discovered in Cornwall, about five miles below Newburgh, in this county, by John L. Davis, of that place. A stock company, with a capital of \$100,000, has been formed, and preparations are being made for the working of said mine. Specimens of the quartz have been exhibited in this place. Whether it will amount to anything or not remains to be seen. The place where the gold was found is called "Butler Hill," the place where the glass ore "Basalt" was extracted from. J. C. G. Newburgh, N. Y.

#### Elevated Railroads.

In reply to several correspondents requesting us to give descriptions of elevated railways, we would state that nearly all of the plans that have lately been presented to the public are simply old devices revived. We have engraved and described many of them, as a reference to our back volumes will show. Here is one which we published in the *SCIENTIFIC AMERICAN* November, 1847—a little more than twenty years ago:—

"A number of inquiries have been made relative to Mr. Randall's invention, and as the model was exhibited lately we take this opportunity of giving some information regarding it. We have been informed that the model constructed by order of the Common Council of this city, is entirely of metal, and cost \$4,000 and two years labor. It weighs about three tons, is seventy-six feet long and nine feet wide. It is to be erected only twelve feet above the line of curbstone. The passenger cars, which are to be propelled by stationary engines and an endless rope, do not stop to take in or let down passengers. This is accomplished by means of a tender, which passes along a side track, and by means of a brake, pressing on a brake plate fixed to each car, the speed of the tender is got up to be equal to that of the passenger cars, before they are fastened to each other for the exchange of passengers. To prevent the cars from leaving the railway, each

car is confined by sixteen pulleys with vertical shafts, two to each of the wheels. It is also provided that if either the axles, the shafts, the car wheels, or the transverse beam which passes quite across the street, should break no danger would arise from the breakage. Passengers need not walk up the stairway but ascend by a screw shaft, containing a sofa, on which they ride from the pavement to the promenade. The model was constructed by Mr. Randall, the inventor, by whom it is patented."

#### The London Underground Railway.

From an English engineer now traveling in this country, and who was before connected with the construction of this work, we learn several items of interest. Thus, the engines employed are not, as is generally supposed, specially arranged for the suppression of smoke, etc.—in other words, of what is here known as the dummy pattern,—but are precisely of the usual form, with the exception of two points. In the first place, they are so arranged that the exhaust may be, at will, turned into the tank, in place of the chimney; and secondly, the furnace may be shut up air-tight at a moment's notice.

The plan of working them is as follows:—The road, we should premise, is not a continuous tunnel, but a series of alternate tunnels and open cuttings. In the open cutting the engines are run as on any other road; but as soon as a tunnel is reached, the exhaust is turned into the tank, the fire-box shut tight, and the engine run through by the accumulated heat in the furnace and boiler. The cost of this road, it may also be interesting to know, was about \$4,000,000 per mile.—*Journal of Franklin Institute.*

#### Newspaper Change.

Mr. Moses S. Beach has sold the *New York Sun* establishment to the *Sun* Printing Association, an incorporated company, and Mr. Charles A. Dana, formerly assistant Secretary of War, has become the Editor and Manager. The *Sun* is one of the oldest and best papers in the city, and has a daily circulation of over 50,000 copies. It has passed into the hands of an able management, and will long continue we trust, brightly to shine for all. Mr. Beach continues as a large shareholder in the concern, but retires from active business.

#### The Weidenman Rubber Shoe Stay.

In No. 4, present volume, we published an engraving and description of a contrivance under the above title, which might possibly mislead the reader in one statement. Instead of the stay being introduced into the shoe in the process of manufacture, it is entirely independent of the shoe, and may be fastened into any rubber shoe by an eyelet and hook. Its advantages can be understood by a reference to the engraving.

#### Editorial Summary.

**POISONOUS VISITING CARDS**—There is a style of visiting cards introduced to the public some months since, under the name of crystallized, or "Mother of Pearl" cards, and from their unique and attractive appearance they have been very much admired. But a chemical investigation of the crystallized surface shows that its composition is quite as dangerous a poison as was used in the once popular enamelled cards. The fact is first brought to our notice from a foreign source. A writer from Munich to the *Journal of Pharmacy* asserting that these novelties had been imported from our country, and for a time enjoyed a great run of popularity, the demand far greater than the supply. But, unfortunately for the manufacturers, one of them fell into the hands of the Medical Director of the Sanitary Department of Munich, and an examination showed that a card two and a half inches wide and four inches long, weighing 33½ grains, yielded as its crystallized coating 6.6015 grains of acetate of lead, a poison the more dangerous, especially to children, from its pleasant, sweet taste.

**DETERMINING THE COLORS OF THE STARS.**—To the astronomer this is a subject of much interest, and different observers vary greatly in their opinions in this respect as to particular stars. For the sake of a more definite and reliable means of determination, a simple contrivance has been recently invented, consisting of a series of vials filled with solutions of known tints, and attached to a revolving drum. A platinum wire is rendered incandescent by means of a galvanic battery, and as the vials are brought before the light their colors can be distinctly seen at night, and by successive comparisons with that of the star the exact shade is found.

**A DEVOTEE TO SCIENCE.**—M. Dollus Assuet has determined to erect a chalet on the summit of Mount Blanc, and establish therein a meteorological observatory, which will therefore be placed at an elevation of about 16,000 feet above sea level. He has hired two guides to spend the summer months in this desolate station, for the purpose of making observations. During the past twelve months this same *sevant* has supported three guides in a chalet on the Col de St. Theodule, at an altitude of 10,500 feet, and the value of their meteorological observations has induced him to make a fresh experiment.

**A STOCK COMPANY** has been formed at Cornwall, on the Hudson, for the purpose of bridging the Hudson River from "Storm King" to "Butter Hill," the bridge to be of wire cable and strong enough to allow the passage of trains, perhaps for the Hudson River Railroad but more likely the Dutchess and Columbia cars, will take this route. The plan appears to be feasible and the people generally in favor of it.

**A CORRESPONDENT** writing from Mossy Creek, Jefferson County, Tenn., states that a New York Company is now erecting zinc paint works of an extensive character at that place. The ore is said to be all that could be desired. Tin is reported as having been found in the Smoky Mountains.

#### MANUFACTURING, MINING, AND RAILROAD ITEMS.

In his annual message, the Governor of New Jersey very justly places great importance upon the mineral wealth of that State, particularly its mines of iron and zinc. Last year more than 250,000 tons of the richest iron were transported to market, an amount valued at the mines at one million dollars. The zinc mines yielded, during the same period, 24,000 tons of ore, all of which was manufactured into spelter, or zinc oxides, within the State. This product is more than half the yield of the United States, and exceeds the supply from all the British mines.

The gathering of sponge among the Bahama Islands, for use in upholstery or, as noticed in another part of this paper, for textile material, has become a business of great magnitude. The *Nassau Herald* speaks of no less than fifty-seven vessels engaged in the trade, and recent sales were made of 12,500 strands of sheep-wool sponge at \$1.00 per strand.

The Paris correspondent of one of our daily papers writes that the street cars in that city run on flat rails, with wheels without flanges, the whole being kept in place by a fifth wheel, but a half inch thick, running in a groove of central rail, laid for the purpose. This additional wheel being attached to the carriage by a lever, can be raised at will by the driver, and the car runs off the track. This is done to turn out either for a car running in the opposite direction on the same track (which saves a double track on a road but little used), or for another vehicle, or to run more conveniently on a down grade.

Quicksilver has recently been found in Macon county, Tenn., at a point thirty miles from the line of railroad from Cincinnati to South Carolina. The yield has been 7½ per cent, or 150 pounds of quicksilver to the ton. All that is required for separating the metal from the gangue, is simply retorting it.

The manufacture of leather is one of the most important national industries of Italy. The number of leather manufactories in the kingdom amount to 1,175, employing about 12,500 workmen, and producing about 282,346 cwt. per annum, to the value of \$1,250,000. The art of making parchment is carried on to a large extent at Arpino and Sulmona, from whence are annually exported about 6,600 lbs.

It appears that the Gatling revolving gun, illustrated and described in our columns, is to be very generally introduced into European armies. According to the *Ausburg Gazette*, the agents in Carlsruhe have received orders for one thousand of these guns. Of this number, 400 are designed for France, and 200 for Russia, the remainder being equally distributed between Austria, Italy, Belgium, and Holland.

#### Recent American and Foreign Patents.

*Under this heading we shall publish weekly notes of some of the more important recent home and foreign patents.*

**RAILROAD SWITCH.**—J. B. Spurgin and T. A. Kirk, Kansas City, Mo.—This invention has for its object to furnish an improved railroad switch so constructed and arranged that no switchman will be required; that two trains can pass each other in motion upon the switch with safety; that trains may pass over the switch at full speed without danger of accident from false switching; and that the engineer by simply moving his train forward and backward can transfer it from one main track to the other or to the switch track as he may desire.

**GLOBE VALVE.**—H. H. Hendrick, Dayton, Ohio.—This invention consists in forming the valve of chilled or case-hardened iron and so attaching it to the valve stem that the valve is self-adjusting.

**ADJUSTABLE SPIRIT LEVEL.**—William J. Tate, New Haven, Conn.—This invention relates to a new spirit level which is so arranged that it can be reset, with great ease when not quite correct.

**ROLLING MACHINERY.**—George Hastings, Jr., Wheeling, West Va.—This invention relates to a method of constructing machines for rolling iron and steel into sheets or plates and for scouring the same for making nails and for other purposes.

**PUDDLING FURNACE.**—William Stevenson, Allegheny City, Pa.—This invention consists in an arrangement whereby the pig iron used in puddling furnaces may be heated by the heat generated in the furnace previous to being put in the furnace, thereby utilizing heat that would otherwise be lost and greatly facilitating and expediting the process of making iron.

**TWEER IRON.**—Lyman M. Bailey, Landgrove, Vt.—This invention relates to an improvement in what is known as the concave tweer iron for blacksmith's fires, and it consists in the arrangement of a valve whereby the fire may be regulated to suit the work in hand as may be desired.

**DRAWER TRUSS.**—Zalmon Taylor, New York city.—This invention relates to a truss for obtaining pressure on ruptures, whereby the inconveniences and objectionable features of the ordinary spring truss are overcome.

**OX YOKE.**—Joseph Langenbach, Dorchester, Iowa. This invention relates to a new manner of arranging ox yokes so that they can be readily fitted and secured on the necks of the animals and that they can be adjusted to fit large or smaller necks.

**HANDLES FOR METAL TEA AND COFFEE POTS.**—William Bellamy, Newark, N. J.—This invention consists in having the handle hollow or tubular and filling it with plaster of Paris which will keep the handle in a cool state.

**REAPER OR GRAIN HARVESTER.**—J. B. McCormick, St. Louis, Mo.—This invention relates to a raking and a gavel-delivering attachment for reapers, whereby the cut grain is raked from the platform of the machine upon a tilting table which is operated in such a manner as to deliver the cut grain raked upon it to the binders. The invention consists in a new and improved means employed for operating the rake over an inclined curved or segment platform and in the use of the tilting gavel-receiving table also operated in a peculiar manner.

**CORK SCREW.**—George Twigg, Birmingham, Eng.—This invention consists of the handle of the same being provided in the center with a nut, fitting the screw thread on the shank of the cork screw, so that by turning the handle in one direction the nut will bear upon a shoulder on the bell or barrel of the same, and thus draw the cork screw and any cork attached thereto up into said barrel or bell.

**CORN CULTIVATOR.**—Charles Rich and Oscar L. Neisler, Poughkeepsie, N. Y.—This invention relates to a new agricultural machine, which can be used for cultivating corn, or for broadcast harrowing or tilling, and which is adapted to straddle a row of corn of height of more than five feet.

**CULINARY VESSELS.**—Wm. H. Bennett, New York city.—This invention consists in discontinuing the perforated bottom of the inner vessel of a cooking apparatus, so that it may not reach beyond the perforated inner wall of the vessel, to permit the space between the perforated inner and the outer wall of the vessel to be cleaned.

**SASH FASTENING.**—C. M. Amsden, Wooster, Ohio.—The object of this invention is to hold the sash more firmly in place, and at the same time to secure a free and easy movement for it.

**COTTON PRESS.**—Paul Williams, Wilona, Miss.—This invention relates to an improvement in cotton presses, and consists in the combination of a lever having a long and short arm with a vertical screw, to actuate the same, whereby the follow block receives its motion from the shorter arm of the lever, and is forced down with great power. Other devices perfecting the whole render this press more simple than, and equally effective with, any cotton press heretofore known or used.

**WASHING MACHINE.**—Benj. F. Stover, Ladoga, Ind.—This invention refers to improvements in machines for washing clothes, and consists of an inclined plane and curved surface, joined, over which a smooth roller is actuated, together with other parts perfecting the whole.

**CONSTRUCTING AND PROTECTING SUBAQUEOUS TUBES.**—T. F. Rowland, Greenpoint, N. Y.—This invention consists in constructing and protecting subaqueous iron tubes, and it consists in encompassing the same with blocks of cement or tile, arranged or applied in such a manner that the water cannot come in contact with the iron tube, nor the tile or cement blocks become detached from the tube.