

Scientific American

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Industrial Worlds' Fairs.

The most repulsive aspect in which men can be viewed, is in deadly strife—one man seeking to destroy the life of another—and yet what is history but a series of descriptions of massacres, battles, sieges, and cities laid in ashes; despots and mighty conquerors with their butchering hordes pass in glittering array from page to page. Man appears to be the most vicious of all animals in respect to the wanton destruction of his own species. Hatred and strife, because of the evils which they entail should be avoided by all wise men and all enlightened nations. In order to accomplish this object, the spirit of mutual good will should be generally cultivated. As a means of accomplishing this end, we hailed the "World's Fair" of 1851, in London, as the grand pioneer of a series of such exhibitions, which would rotate triannually among all the civilized nations of the earth, and which would tend to bind them closer and closer by the fraternal cords of an enlightened self interest, and honest emulation to excel in the arts of peace. Our hopes respecting such future results are now exceedingly faint. The prospect of a World's Fair, one worthy of the name in France in 1855, in America in 1858, and so on rotating among all the enlightened nations of the world, as we at one time anticipated, will not, and cannot, we are sure, be realized. This year there are in two different and separate countries, two Worlds' Fairs in name, but only local affairs in reality. One is now open in the city of Dublin, Ireland; the other is to be in New York City. The Irish Crystal Palace is said to be exceedingly creditable to the people of Dublin, but we have seen no illustration of it excepting that funny one in the New York Daily Times, consisting of five o's, all in a row. The New York Crystal Palace has yet to earn a good name if it can. We, however, consider that the Crystal Palace of Dublin, and especially the one in our own city, barriers to future World Fairs. We hope we may be mistaken, but it is not possible that nations can unite periodically in great industrial exhibitions attesting their strength and wealth in disjointed and extraordinary local efforts. We do not allude to annual State and county industrial fairs, as these are not attended with great expense to exhibitors, and rather serve to fit them for successful competition among the nations; we only allude to very expensive fairs like the New York Crystal Palace, which we consider anything but honorable to our country, as it blocks up the pathway to a future World's Fair in America, one worthy of its greatness, and the genius and skill of its enterprising people. Let us look calmly at the case as it stands, and see if we have not good reasons, as lovers of our country, for feeling deeply on this subject.

The New York Crystal Palace is the property of a joint stock company composed of merchants, lawyers, and stock-jobbers. It was projected by the the American Commissioner to the Worlds Fair of 1851, and was designed for money making objects; in fact, the project has been looked upon as such an excellent speculation for paying good dividends, that the stock has been running up and down from par to seventy per cent above it. It has been represented abroad as a World's Fair—a national exhibition, instead of the fair of a mercantile company, in order to make it highly successful, hence the Queen of England has appointed a Royal Commissioner to represent her Court in the person of the Earl of Ellesmere, who has come to our shores in a fine frigate appointed for that purpose, and with a brilliant staff of joint Commissioners consisting of Charles Lyell Bart, and Professors Wilson, Dilke, Wallis, and Whitworth—all distinguished men in the pursuits of science. These men were no doubt appointed with a perfect understanding that they were coming to a World's Fair—under national patronage—instead of the Crystal Palace of a mercantile company. They no doubt expected to find a fair worthy of the spirit of our people, one that would be a faithful index

of our country's genius and power; but instead of finding a magnificent and large structure corresponding in dimensions with our great population—twenty six millions—they have found only an unfinished but neatly designed building, placed so unfavorably that it is dwarfed by a neighboring water reservoir, and surrounded with dust, dirt and groggeries. We hope that when the exhibition opens, a favorable impression will be made upon those distinguished foreigners who have come here to view the handiworks of our people.

At present things cannot but make a most unfavorable impression upon them—but neither our government nor our people are responsible for any disappointment in their expectations.

Present Condition and Temperature of the Planets Jupiter and Saturn.

James Nasmyth, an ingenious engineer—inventor of the steam hammer, &c., an excellent astronomer, draughtsman, and painter, has communicated to the Franklin Journal a copy of a paper read by him before the Royal Astronomical Society, of London, on the subject indicated by the above caption. He assumes the hypothesis of the original molten condition of the earth to be established, and going back he attributes the evidences of ancient deluges to be easily explained by the cooling of the earth, the condensation of water, and the falling in from time to time of the earth's crust towards the centre as our globe cooled. There was a time, he believes, owing to the heat of the globe, when no water could rest upon our earth in a liquid form, but as the crust of our globe cooled, some parts sunk down, the waters were condensed, and thus seas and lakes were formed. He believes that the conditions of cooling and condensation are now going on in Jupiter, and that Saturn is so hot that no water rests upon its bosom, but surrounds it in vapor, of which her rings are formed.

Mr. Nasmyth's views may be correct and they may not; they do not at least explain all the deluge phenomena on our globe, nor can they answer all the objections which may be brought against them. For example, his hypothesis supposes that all the matter of which the sun and all the planets is composed was once connected in a molten state, and that the sun is still a molten mass. Now if Mr. Nasmyth is correct, how does it happen that against all the laws of cooling bodies—the earth—far in the inside of Jupiter and Saturn, cooled before these planets. The only answer given is that these bodies are so much larger than the earth; but that is not a sufficient one, as Jupiter revolves on his axis in 9 hours, 56 minutes, and being twelve hundred times the bulk of the earth, his surface velocity is more than twenty-four hundred times that of the earth; consequently his cooling action is exactly so much greater than that of the earth. His theory also cannot account for the absence of water in the moon, but would give seas and lakes to that satellite. An inhabitant of the moon, if there were one, and he a plutonist, would come to the conclusion by Mr. Nasmyth's method of speculation, that our planet was in a molten state now. Lieut. Maury in his description of the "Equatorial Cloud Ring" says:—"A belt of equatorial calms and rains encircle the earth, were the clouds which overhang this belt luminous, and could they be seen by an observer from one of the planets, they would present to him an appearance not unlike that which the rings of Saturn do to us."

Here is a phenomenon explained, which in Jupiter and Saturn would go to prove those planets to be in a different condition from that set forth by Mr. Nasmyth.

Paid Fire Department.

The "Nonpareil," of Cincinnati, says the system adopted by that city, of paying the fire department, works admirably. It has proved as efficient as the volunteer system, and is attended with perfect harmony, economy, quiet, and order. It is stated that they have used the steam engine with entire success. Our readers will recollect we gave a concise description of this engine but a few weeks since. We understand it is the design now to construct a system of telegraphic communication to give notice of fire. We have been aware, for some time, that Cincinnati

was taking the lead in her ample system of security from fire; when will New York show like signs of spirit and philanthropy. The firemen of New York City are noble hearted, or they would not labor with such zeal as they do, and with so little encouragement.

Lime Water—Cure for Carbonic Acid Gas.

A correspondent (Wm. Collier) of the "London Mining Journal" imparts a piece of valuable information respecting the beneficial effects of lime-water to cure persons affected with carbonic acid gas. He states that two of his workmen were employed to clean out a "carbonator,"—a large iron cylinder, 15 feet deep and 8 feet diameter, which was used at his chemical works, and through which a current of carbonic acid gas passed from a neighboring lime-kiln. This current of gas should have been shut off while the men were at work, but in this instance, by some neglect, it was not, so that when one of the men went down to the bottom to work, he dropped on his back, and could not answer the man at the top who was to assist at the operation. The latter made the alarm and said, "the other had dropped down dead." Mr. Collier immediately directed a man to go down and lash a rope around the body of the man at the bottom of the "carbonator," who was then hoisted out, but life appeared to be extinct. He was at once carried to the fresh air, and some fresh lime-water was procured, but it was difficult to get his teeth apart as they were firmly set. At last Mr. C. got his mouth open so as to introduce two tea-spoonfull of the lime-water, which began to exhibit some effect. A little more was applied, which went down his throat, and he immediately, but imperfectly, began to breathe. A third time the lime water was given, as he was now able to drink, and he then began to breathe freely. He was then lifted up and made, with some assistance, to walk round about. In half an hour afterwards, he walked home, went to bed, slept, and next morning felt nothing the worse except his having a slight headache.

This is an important fact in chemistry, as it relates to life, its dangers, and preservation. It is well known to chemists that lime water has a very great affinity for carbonic acid, and whenever it comes in contact with that gas, it immediately absorbs it, forming a precipitate of the carbonate of lime, or if the lime water is kept still in a large vessel the carbonate forms in a thin scale on the top, such as on bleachers' lime and dyer's vats. In the case herein described, the lime water no doubt combined with the carbonic acid gas inhaled by the workman, and the carbonate of lime—an inert substance—was formed; it therefore appears to us, that lime water is an antidote to be employed for those who are injuriously affected with inhaling carbonic acid gas.

Those who work at lime-kilns, where much carbonic acid gas is developed, have a remedy in the material which is continually passing through their hands. Those who labor at charcoal pits, have also a remedy for the injurious effect of the gas of the coal, in a bottle of lime water. To make good lime water for the purpose, it must be prepared from fresh burned lime. Take about half a pound of fresh burned lime, and pour about five quarts of clear soft water upon it; stir up the lime quickly, cover up the vessel, and set it aside for about two hours. The clear should then be poured out into clean bottles and well stoppered, so as to exclude all the air. Hot water is not necessary for this purpose, as lime is as soluble in cold, and a quart will hold about 32 grains of lime in solution. Those whose business leads them to work much over a charcoal fire, will find it for their advantage to have a bottle of lime water always at hand. It would be well for a person who is about to descend into a well to clear it out, first to throw down a few pailful of fresh lime water, in order to absorb any free carbonic acid gas which may be at the bottom. On three separate occasions we have been severely affected with carbonic acid gas, by working over a large charcoal fire, and although we were well acquainted with the affinity of lime water for it, we never on any of those occasions thought to try it as a remedy. The substances we used were emetics, with the free use of cold water poured upon

the head, and by chafing the chest. We hope this notice will direct general attention to this subject; every thing useful connected with the preservation of life—a remedy for an ill—should be known and read of all men.

Events of the Week.

FUEL CONSUMED—GRAIN GROUND.—As we often have enquiries respecting the amount of fuel necessary to drive a steam engine, according to the amount of grain which the engine will grind, we would state that James R. M. Stewart, of Knox Township, Ohio, has published a statement in the "Steubenville Herald," Ohio, which says that twelve bushels of grain were ground with one of coal consumed in an engine erected by Nathan Cope & Co., of Salineville, Ohio. The engine is a high pressure constructed with some improvements, invented by N. Cope, an excellent engineer. His engines, we have been informed, are the most economical of any erected in central Ohio.

TEA CULTURE IN AMERICA.—The "Rochester American" says that a gentleman who has carried on both the culture of tea and the manufacture of tea from their leaves, for years, and some of the time employed two hundred men at the work, has left that place, after an extensive examination of the soil and climate of the South, for China and the East Indies, expressly to import a stock of young plants, superior to those cultivated by the late Dr. Junius Smith, at Greenville, South Carolina. We have no doubt but the plant can be cultivated in some of our Southern States, but the question is, can it be cultivated as economically as in China. We cannot tell; nothing, however, surpasses a fair trial in testing the question. There can be no doubt but a very superior tea can be cultivated in our country from any which we now get from China, as we have been creditably informed, by some who know the fact that none of the first quality comes here.

A REFORM CARRIED.—On Tuesday, the 7th inst., the citizens of New York voted to adopt the amended charter, and did so with such hearty good will, that out of 40,000 votes cast, only 3,000 were adverse to the reformed charter. It is believed that the new charter will cure many of the ills with which our city has been afflicted for a number of years, by unscrupulous magistrates.

What is doing to the Ericsson.

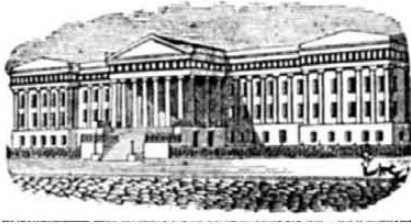
The work of removing the machinery of the Ericsson was completed last evening. This afternoon she is to be towed from her dock in Williamsburgh to the foot of Thirtieth street, North River, for the purpose of receiving her new and powerful engine and other machinery, nearly all of which is in readiness to be placed on board. The shaft, bed plates, and water-wheels are the only parts which have been retained in her. The owners are confident that the Ericsson will be in readiness for sea the 1st of September next.

The above is from the "New York Tribune;" we have quoted it to show that we have no art nor part in making up unfavorable reports respecting the splendid success of the Ericsson. The best thing that could be done with this ship would be to put a pair of good steam engines into her; perhaps this is the very thing that is to be done, but as Capt. Ericsson says, "this is not a proper subject for discussion at present."

Communications.

We are always glad to receive communications from practical men upon subjects suited to the character of our journal; we reserve to ourselves the right to use them or not, but we cannot undertake their preservation. A copy should always be kept by the writer who desires to preserve his communication. None but those familiar with the details of editorial office can understand the difficulty in always taking good care of manuscript.

The English papers speak in glowing terms of the "North Star," Capt. Vanderbilt's steam yacht. Her performances across were excellent. Her over-head engines were the subject of severe criticism—on the whole not unfavorable. Her hull was pronounced to surpass that of any English steamer for beauty and originality.



Reported Officially for the Scientific American

### LIST OF PATENT CLAIMS

Issued from the United States Patent Office  
FOR THE WEEK ENDING JUNE 14, 1853

**CUTTING TENONS**—By C. B. Fitch, of Galena, Ill.: I claim the method described of cutting tenons by means of the scoring and V-shaped cutter that cuts the square shoulder and point, and at the same time scores the side of the tenon, when this is combined with the lancet shaped or other finishing cutter, for removing the material left by the scorers, as specified.

**HARVESTERS OF GRAIN AND GRASS**—By Wm. G. Huyett, of Williamsburg, Pa.: I claim the peculiar manner of arranging the two sets or series of knives B and C, the knives, B, being of triangular form or saw shaped, and having a reciprocating motion, and the knives, C, working directly over the knives, B, said knives, C, being attached by pivots to the outer ends of the teeth, and having an opposite reciprocating motion communicated to them, at their inner ends, by the lever and cross bar, by which arrangement a drawing cut is obtained and the knives effectually prevented from clogging or choking, by the grass or straw.

**STOVES**—By S. S. Jewett & F. H. Root, of Buffalo, N. Y. Ante dated Dec 14, 1852: We claim the combination, in a stove or grate, of the fire-place or furnace with a sliding door or doors, to close the front of the fire place, and a recess in one or both of the jambs of the fire-place for the door or doors to slide into, and be concealed from view on the outside and be insulated from the fire and smoke within, this recess being a separate compartment open only where the door enters, and only of sufficient capacity to receive the same, as set forth.

**MOP HEADS**—By Harvey Murch, of Lebanon, N. H.: I claim an improved mop head, composed of the fixed cross head, which has grooves in its lower side and end, in combination with the sliding binder that terminates in a notched shank, and passes through the loop on the handle, which serves as a detent in consequence of the action of the spring on the under side of the said shank, as set forth.

**METAL TUBES**—By Geo. F. Muntz, Jr., of Birmingham, Eng. Patented in England May 8, 1852: I claim the mode or process of manufacturing a metallic tube of Muntz's metal, or other like metal or composition of metals, viz., by first casting the metal in a short tube; next heating it as described, and rolling it flat, and elongating it at the same time; and, finally, opening it out and removing the surplus portions of flue, and reducing it to its final form in transverse section, as specified.

**SELF-WAITING DINING TABLES**—By Lea Persey, of Patterson, Pa.: I claim a self waiting table constructed and arranged as described, viz., having an endless band situated beneath the table and kept in constant motion during meals, by any power applied through the crank or other means, to which a band is firmly attached at convenient distances apart, guiding carriers, &c., which pass up through, and are supported by small railway trucks, &c., and move in guiding apertures in the top of the table, and up on the tops of which are placed waiters, whereon dishes are put and constantly conveyed around, before the guests on both sides of the table, in combination with the said endless band conveyers.

I also claim an additional shelf or second table, over the central portion of the table, above the waiters, for the purpose of holding castors, &c., which do not require to be frequently moved or replaced, as set forth.

**MORTISING MACHINES**—By Fergus Purden, of Baltimore, Md.: I claim a divided bed, so constructed that it can be adjusted to suit the width of the mortise to be cut, so as to prevent the side of the mortise from being splintered by the cutter, or chips when they are forced through and driven out on the underside, as described.

**BRICK MACHINES**—By A. H. Sampson, of New Orleans, La.: I claim the box or reservoir of plat forms with the carrying chains or their equivalents provided with suitable projections for catching drawing forward, and carrying immediately under the delivery follower the boards or platforms for receiving the pressed brick, and by which they are conveyed out of the machine, as described.

**COPYING PRESSES**—By E. H. Smith, of New York City: I claim, first, the employment of the hand lever to operate the pressing platen, through the agency, or by means of the sliding transverse bar, or its equivalent, in combination with the adjustable stop, or any other mechanical device substantially the same.

Second, the arrangement of the plates or platens, in such relation to their support and operating medium, as to render three of the four edges of each platen unobstructed, perfectly available, and easy of access.

**TYPE CASTING MACHINES**—By J. J. Sturgis, of New York City: I claim the use of the horizontal mould block rest, in combination with the vertical and horizontal rock shafts and cam for the purpose of obtaining a motion of the mould block as nearly horizontal as practicable, as set forth.

Second, I claim the use of the lever and rod, in combination with the horizontal mould block, rest, and matrix, as set forth.

Third, I claim the use of the matrix holder having a slot in it to allow of a lifting motion on its center pin, and a notch in its back side for the end of a spring to act against, in combination with the spring, inclined plane, or cam, on the horizontal rock shaft and pin, for holding it, as set forth.

Fourth, I also claim the V-shaped bar, secured to an adjustable plate, attached to the outer end of the lower half of the mould block, in combination with the upper half of the mould block, for the purposes set forth.

**COOKING STOVES**—By G. F. Filley, of St. Louis, Mo.: I claim, first, the flaring enlargement of the side flues, C and D, from the space above the oven, also the enlargement of the central flues, F and G, from the said flue space to the upper end of G, for the purpose of increasing the draught of all the flues, and causing a larger portion of heat to be conducted into the flue space, as set forth.

In combination with the flaring shape of the flues C, P, and G, I also claim the auxiliary damper flue which rises from the flue space to the hearth plate, and thence is continued immediately under the fire

chamber and up the back of the same by which another portion of heat from the fire chamber is conducted by radiation and circulation, into the flue space, for the purpose of aiding in giving an increased draught to the stove, and in raising the temperature of the front end of the oven bottom to the required degree for baking purposes, as set forth.

**MANUFACTURE OF GLASS**—By Jas. M. Brookfield & E. V. White, of Honesdale, Pa., and Jacob Faatz, having been decided to be a joint invention with said White, the said Faatz & White, assignors to A. K. Hay & J. M. Brookfield: We claim the application of a blast, and anthracite coal as a fuel, in the manufacture of glass, as set forth.

**STEREOTYPE PLATES**—By J. L. Kingsley, of New York City: I claim, first, the process of expelling air from the surface of the type when forming the mould and from the surface of the mould when forming the plate, as set forth.

Second, I claim the method described or its equivalent of dressing, bevelling or thickening the moulds and plates when made of gutta percha or compounds that run so that all the plates made shall be invariably of the same thickness, as set forth.

**MANUFACTURE OF PLATE GLASS**—By J. J. Greenough, of Boston, Mass.: I claim, first, manufacturing plates of glass by causing the glass while in a plastic state, to pass between two or more pairs of rollers, as set forth.

I also claim embossing the surface of plate glass, by passing it between embossing rollers, as described.

And lastly, I claim suspending plates of glass by their upper edges, after they have been formed, while annealing so as to keep them in a perfect plane, without resting on a bed.

#### RE-ISSUES.

**LUBRICATING COMPOUND**—By Patrick H. Devlan, of Reading, Pa.: I claim the combination of caoutchouc or other similar gum, with animal or vegetable oil or fatty matter, as specified, applicable as a substitute for oil in lubricating machinery and for other purposes.

**APPARATUS FOR OPERATING SHUTTLE BOXES OF LOOMS**—By J. A. Bowie & Chas. Carr, of Philadelphia, Pa. (assignees of Robt. B. Goodyear) Ante dated Sept. 23, 1848. Re-issued June 14, 1853. I claim the employment for the purpose of weaving, of an index plate, having movable and adjustable pins projecting at different distances from the face of said plate, in combination with the shoe, or its equivalent, having projections corresponding to the different length of pins, for the purpose of raising and falling, the shuttle boxes to correspond with the pattern desired to be formed, as described.

#### A New Car Ventilator.

One of our daily papers thus describes a method of car ventilation lately introduced on the Buffalo and New York Railroad, which is the invention of Dr. Foot, of Buffalo:—

"In the centre of the car there is a box about four feet high, by two feet and two and a half in its dimensions. In this revolves a fan wheel, on the circumference of which are teeth about half an inch long. This wheel moves in water to the depth of the teeth, and of course keeps a thick spray in the box when the car is in motion. The wheel is driven by a belt which connects with the car-axle. The air is sucked into the box at each side by the motion of the fan, which forces it through the spray into a conductor, which connects in several places with the car by means of ventilators, but in its passage through the spray it loses its dust and comes up pure. The car windows are to be shut in very dusty weather, and the air for breathing, pure and cool, passed through water, is to be thus furnished. The press of air made by the fan is so great that it will hold a hat suspended over one of the holes out of the top of the car. The experiment was successful to such a degree that it ought to be examined by competent judges."

[This plan strongly resembles one described on page 340, Vol. 7, Scientific American, invented by Harvey Law, of this city. The description to which we refer says: "Mr. Law remedies the evil of dust entering the cars by bringing the air in contact with revolving moist surfaces in troughs below the cars, and they take up all the sand and dust out of the air which is afterwards driven through the cars cool and pure." The idea of extracting the dust from the air to supply railroad cars by drawing it through the water, belongs to Mr. Law, although the same principle was patented to James Cummings in 1848, as applied to Spark Arresters.

**ANOTHER CAR VENTILATOR**—Another mode of car ventilation has been introduced on the Naugatuck Railroad, Conn., by Messrs. Atwood & Waterbury. The passenger cars of a train are all thrown into one long saloon by means of a flexible cloth or rubber platform, and the windows being kept closed and the train opened at the rear, a strong current of air is received just over the engine through a pipe or bag, as wide as the train, and some six to twelve inches deep, which passes in at the top of the front car, and so along through all the cars, and out at the rear.

#### Flying Machine.

We learn that nearly all the work of Mr. Porter's Aeroport is finished, and that in one

month it could be made ready for its voyage in open air. A little more money, however is needed to complete the arrangements, and a liberal interest is promised on the investment, the proprietor having no doubt whatever about the success of his aerial navigator. But the people at large have not the same degree of faith that Mr. Porter has, and therefore are reluctant to take part in the enterprise.

#### The Rotary.

On Saturday, June 11, we had the pleasure of making another trip up the North River with Ebenezer Barrows, Esq., in his beautiful little steamer "Rotary," and from her performance on this occasion, we see no reason to alter the opinion expressed in No. 3, of the present volume, which was written after the first trial trip of this little boat last summer. The boat has made frequent trips since that time, and the engine, although nothing has been done in the way of repairs, and not a screw has been disturbed, works even better than on that occasion, when we felt called upon to express our admiration of the smoothness, ease, and silence of its movements. Not a sound being audible but the escape of the exhaust steam—the engine working on the high pressure principle. It is believed that the packing fits better now than when it first started. It must be remembered that this is the first engine ever constructed on this principle, with the exception of one so small as to be a mere toy, and though it has been usual to make allowance for the defects of a first machine of peculiar construction, it is not necessary in this case to do so. In our first notice of the "Rotary," we gave the dimensions of the engine, recapitulation of these is therefore unnecessary, further than to remark that the whole area of the steam surface operated upon at one time, is but 54 square inches, and the average pressure of steam on this occasion was certainly not more than 60 lbs. per square inch; we should think much less, but as it varied considerably during the trip; we cannot be positive. It must be admitted that the above area of steam surface is very small to propel a boat of 70 feet length and proportionate beam, draught, &c., yet during some portions of the trip, the speed obtained, considerably exceeded ten miles per hour, the engine at the same time working pump and blower. The consumption of fuel is very small, we are informed about 110 lbs. per hour. One of the most remarkable features in the operation of this engine is, if we may so express it, its perfect obedience to command, the reversal being effected by simply changing the position of one handle, which changes the direction of its revolution without any clatter, or indeed the slightest perceptible sound or jar. The trips made by the Rotary have established the fact that this engine performs its duties with a very small expenditure of fuel, that its operation may be controlled by a child, and that it will run for a very long time without repairs. As it may be constructed cheaply in the first instance, it may be said to possess all qualities desirable in an engine. See engravings of this engine in No. 4, Vol. 8, Scientific American.

#### Maryland Institute at Baltimore.

The Sixth Annual Exhibition of this Institute will be opened in the City of Baltimore, on the 3rd of October next. Articles intended for the Exhibition will be received on Monday the 26th of September, and those designed for exhibition only will be received during that week, but those deposited for competition and premium must be entered before Thursday night, Sept. 29. Particular information in regard to the arrangements and management of the Institute may be obtained by addressing John S. Selby, Actuary of the M. I., Baltimore, Md.

Our readers are well aware of the high character that this Institute sustains, and we have no doubt that this display will equal if not surpass that of any former year—it will be one of unusual interest and utility. The officers and managers are men well qualified to give satisfaction to exhibitors, and they will use every precaution to give confidence and insure harmony and good feeling. The Hall in which the Fair will be held, our readers will remember, was described on page 32, Vol. 7, Scientific American; it is a spacious and

beautiful edifice, and will probably accommodate all who may wish to offer the products of their skill, ingenuity and taste for public observation. The Exhibition will close on or before Oct. 31.

A convention of some of our Southwestern States, just assembled at Memphis Tenn., has declared by resolution, that Cuba should be ours of a necessity.

Rock salt is said to have been found in the neighborhood of Rome, Ga.

#### TO CORRESPONDENTS.

J. M. G., of N. H.—We have frequently seen straw cutters constructed precisely the same as yours, it is not new; the indicator is the same as Ely's, which was invented four years ago. Morse & Manfield's car axle involves the same device as is embraced in yours for wagon's, the difference in application is not patentable.

R. J. M., of Savannah—We are not positively sure that either invention named in your letter could be patented. The patent fee in each case would be \$500; no one but the inventor could take the patent.

H. B., of N. Y.—We do not see why your improved valve would not work well. We are doubtful about its possessing any patentable features, this you can determine by an application for a patent.

W. B., of Geo.—We have seen an electro-magnetic machine constructed upon the same principle as yours, only the wheel was on a horizontal shaft, and the stationary magnets secured in a frame around it; the magnets on the arms were permanent, however, and in this respect differed from yours, but we believe you could not obtain a patent.

H. M. D., of Mass.—We like Bourne best, and recommend it, but examine the two for yourself:—Hodge is not out of print.

J. C. B., of Wheeling—We would not like to give you an opinion without having practically tested the two kinds of zinc, which we have not done; we consider the Jersey zinc equal to any other; this opinion is founded on examination merely.

G. V. McD., of Ct.—The rotary cutter and mould would be an infringement of Blanchard's patent.

J. H., of Ill.—Yours will receive attention next week.

Mr. J. A. C., of Ohio—Yours came rather late for this number.

J. A. S., of Pa.—What you call the backward current is the effort of the divided water to unite, which, in our opinion, does not affect the action of the paddles; great objections can also be urged against extending the paddles from the side of the ship.

J. J. P., of O.—The number of patents which have been issued on straw cutting machines exceed one hundred; the claims of all of them would cost you more than you would feel willing to pay, undoubtedly; our charge for copying claims is \$1 each.

E. B., of Wis.—The Wilson Sewing Machine, illustrated in No. 38, present Vol., is just the machine you require for your kind of work. The objections you advanced to the other machine, are obviated in Wilson's.

H. W. O., of Ct.—We are not practically acquainted with any substance that will unite two pieces of horn together, water-proof; still it is our opinion that common gutta percha cement will do it; try the experiment.

R. S., of Conn.—We have never seen your plan carried out, but the exhaust steam has been introduced into the furnace. Your plan is good, and does not infringe on any patent, but we do not believe it patentable.

J. G., of Ct.—Use lac dissolved in alcohol.

J. J. N., of Ohio—The best thing you can do is to communicate with J. T. & P., and state all the circumstances, and if you could find some person who has tried one, his experience would be of service to you; we could say nothing about recommending it or any other, excepting to say it was a good one in principle.

J. C., of R. I.—We have not the slightest confidence in your alleged improvements in balloons as embracing anything useful; if you have a different view, the only way is to build and test the invention.

M. H., of N. Y.—There is something in your device for cutting grain, which appears to be new and patentable. We think you are justified in making an application for a patent.

C. T. M., of Miss.—A model could not be made from the daguerrotype.

J. P., of Ky.—Your sketch we have received, and we shall attend to the examination at once.

Money received on account of Patent Office business for the week ending Saturday, June 18:—

C. S., of N. Y., \$25; G. W. C., of Ga., \$30; W. K. P., of Mass., \$55; W. M. S., of N. Y., \$100; S. J., of N. Y., \$30; D. A. M., of Pa., \$55; H. C., of N. Y., \$20; A. E. B., of R. I., \$50; B. H. B., of Ct., \$25; I. W. McG., of Pa., \$30; B. W., of Ct., \$20; W. T. B. M., of N. Y., \$125; J. A., of O., \$25; A. B., of Miss., \$35; A. T. C., of Pa., \$20; J. W. M., of Ala., \$55; C. E. B., of R. I., \$25; S. & McK., of N. Y., \$25; S. C., of N. Y., \$25; A. C. R., of N. Y., \$32; G. W. T., of N. Y., \$55.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday June 18:—

D. A. M., of Pa.; H. C., of N. Y.; C. F. B., of R. I.; S. B. & Co., of Mass.; B. H. B., of Ct.; J. B. C., of Ohio; J. A., of Ohio; S. C., of N. Y.; S. & McK., of N. Y.