Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME VIII.] NEW-YORK, SEPTEMBER 25, 1852. [NUMBER 2.

THE
Scientific American,
CIRCULATION 16,000.
PUBLISHED WEEKLY
At 128 Fulton street, N. Y., (Sun Buildings),
BY MUNN & COMPANY.

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The Railways of Great Britain.

A report on the railways of the United Kingdom has just been published by Capt. J. L. A. Simmons, Government Inspector, from which it appears that the number of miles open for traffic at the close of 1851, was in England and Wales 5,306 miles, in Scotland 960, Ireland 624—total 6,890. The sums raised annually for railway purposes previous to the year 1848, cannot be ascertained; but since that period Parliament has required returns, which show the calls for 1848 to have been £33,234,418; in 1849, £29,574,720; and in 1850, £10,522,967. The diminution is remarkable. The return of the sums raised in 1851 have not all, as yet, been received, and therefore cannot be stated. During the past year 36 passengers were killed and 375 injured by railway accidents, in the previous year 32 were killed and 183 injured. The number of passengers conveyed on all the railways in the kingdom during the past year amounted to 85,391,95, being an increase of 17 per cent. over the previous year; value of passenger traffic £7,960,664 an increase of 16 per cent.; and value of goods traffic £8,056-695, an increase of 10½ per cent. over previous year. Aggregate revenue of all railways for 1851, close on fifteen million pounds sterling an increase of 13½ per cent on the receipts of 1850.

Boston Locomotives.

The Boston Locomotive works, Harrison avenue, have completed six powerful locomotives for the Terre Haute and Richmond railroad.

At Souther's Globe Works, South Boston, a fine twenty ton locomotive has been completed for the Jacksonville and Indiana railroad. It is called the "Bartholomew," and is a first class engine.

At the same establishment there has just been built a lilliput engine, called the "Yankee" weighing but six tons. It is constructed in the most simple manner possible, with water tanks hung under the boiler, between the drivers, which are but two feet in diameter. It is intended for the Great Western Railroad, Canada, leading from Niagara Falls to Detroit, and is the first locomotive placed on that road. There are now four large excavators used in constructing the road, and another is about to be built at the Globe Works. This lilliput is intended as a gravel engine to remove what the excavators throw out.

Montreal and New York Railroad.

This road is now completed from Plattsburgh, N. Y., to Montreal, crossing the St. Lawrence at Lachine, eight miles above Montreal. The cars were to commence running last Monday, the 20th inst. Canada and the United States will soon be entwined together by iron laurels, to the great benefit and blessing of the people on both sides of the St. Lawrence.

An Englishman named D. S. Brown announces he has discovered a new form for vessels, which will enable him to construct a steamship that will run as fast as a locomotive, and make a voyage to America in forty-eight hours—a great blow, no doubt.

BALDWIN'S NEW STEAM GENERATOR.

Figure 1.

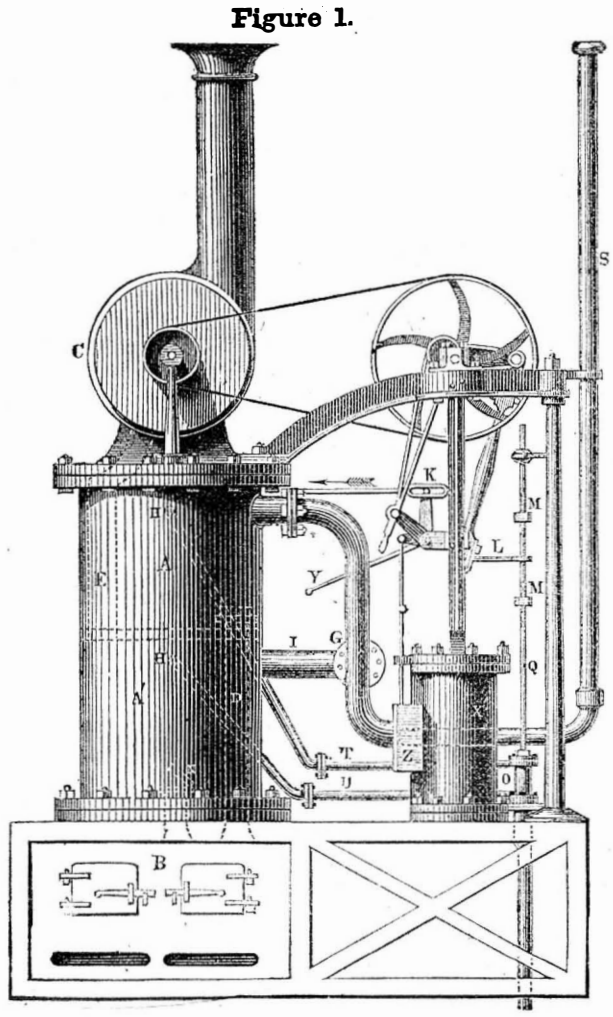
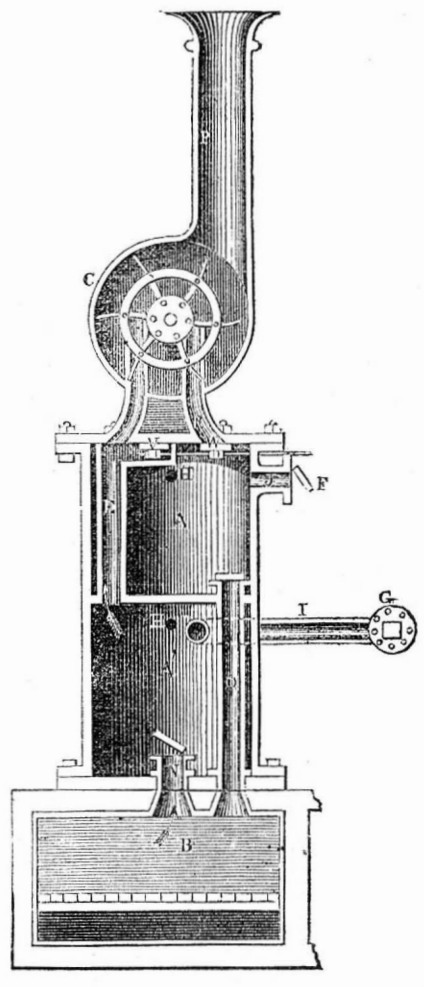


Figure 2.



The annexed engravings are views of a Steam Generator, invented by David Baldwin, of Goodwinville, N. J.

Fig. 1 is a side elevation of the steam generator and engine; fig. 2 is a vertical sectional elevation of the generator, showing the interior arrangements. The same letters of reference indicate like parts in both figures. A and A, fig. 1, is an iron cylinder, divided into separate chambers, as seen by the dotted lines, which is more fully shown in fig. 2. B is the furnace into which the fire is kept, the heat of which is alternately drawn into the two separate chambers through the pipes or apertures, D and N, by means of the fan, C, which receives its motion from the engine, and communicates with the steam chambers through the channels, E and R. H H, are the two jets through which the water passes just before being converted into steam, and communicates with the pump, O, through two separates pipes, T and U. K is the connecting rod by which the two sliding valves are worked. F and G are two valves which prevent the steam from returning to either chamber, while being re-charged. X is the working cylinder of the steam engine; L is an arm attached to the cross-head of the piston rod, and works the pump rod to which the piston is connected; this arm works the pump by coming in contact with the nuts, M M, at the close of each half revolution of the engine. S is the exhaust pipe. P is the pipe through which the waste steam passes from the blower or fan.

MANNER OF OPERATION.—When it is required that the engine should be stopped at the close of a day's work, or otherwise it is necessary that it should be carefully left in the position as represented in the engraving, so as to be easy of starting again. Supposing the engine is now to be started, after re-kindling the fire, the valve at N, fig. 2, being open, the heat passes from the furnace, B, to the chamber, A′, from thence to the channel, E, and from thence through the fan box to the pipe, P, on drawing down the arm or handle, Y, the connecting rod, K, is forced back in the direction of the arrow, thereby closing the channel, E, and opening that of R, by means of the two slide valves, V and W, as seen in fig. 2. The heat being now confined to the chamber, A′, the pump rod is forced down by means of a handle provided for the purpose (not shown), thus the water being injected into the chamber, A′, and coming in contact with the hot air already confined, is instantaneously converted into steam, and by its expansive force now makes its way through the pipe, I, to the valve-box, Z, thus reaching the wording cylinder, X. The machinery being now disposed of in a working position, the steam forces the piston upward, this giving motion to the fan, C, which draws a supply of hot air from the furnace, B, through the pipe and valve, D, into the chamber, A, the connecting rod, K, being now returned to its former position, as seen in fig. 2, at V and W, the arm, L, coming in contact with the uppermost nut, M, and raising the rod, Q, causing the water to be again injected into the chamber, A, through the pipe, T, which, on reaching the hot air, as before, is converted into steam, and passing the valve, J F, forces the piston downward, and so on in succession.

Mr. Baldwin is an ingenious man, and has taken measures to secure a patent for the above. He has made experiments with his generator, and assures us that it saves a great deal of fuel, beside being of great advantage for compactness and freedom from explosions. His invention will claim the attention of our readers, especially those interested in steam and the steam engine.

Reaping Machines.

We understand that at the trial of reaping and mowing machines which took place at Geneva, N. Y., as noticed on page 397 of last Vol., Scientific American, before a committee of the State Agricultural Society, the first premium for mowing and the second for reaping were awarded to Manny's Illinois Mower and Reaper; the first prize for reaping was given to Burrall's Reaper; a third prize for reaping was given to Seymour & Morgan's N. Y. Reaper. Twelve machines competed for the prizes, Hussey's and McCormick's among them. Manny's alone received a prize for both mowing and reaping, though some of the others are designed for both kinds of work. The awards were announced at the State Fair at Utica.

We hope to be able to illustrate this machine at an early date.

Melancholy Railroad Accident.

Four young girls, about eighteen years of age, one evening last week, left the cotton factory at Reading, Pa., and were proceeding homewards on the railroad; they saw a train coming down on the track before them, and they went on the other track to get out of its way; at that instant a train came up behind them, unnoticed, by which two of them were instantly killed, and the other two dangerously hurt. Our railroads are too open; they should all be enclosed, and no person allowed to walk on them. Gates should be placed at all the crossings, and watchmen appointed to attend them. We hope the time will soon come when our railroads will be able to pay for such a reformed system.

The Wreck of the Steamer Atlantic.

The first attempt to descend to the wreck of the steamer Atlantic, in marine armor, was made on the 10th inst. The diver went down 105 feet, and experienced no difficulty; but the pressure on the air pipe was so great as to cause a fear of its bursting, and the man was consequently pulled up. A stronger hose is being constructed, and another attempt will be made soon, weather permitting. M. Maillefert feels confident of success.

MISCELLANEOUS.

Hydrogen Gas.

If a horizontal current of hydrogen gas, emanating from a capillary orifice, be directed towards a sheet of paper, held vertically at the distance of a few millimeters from the orifice, in such a manner that the current may be perpendicular to the paper, the paper is traversed by the gas. But the gas does not, so to say, sift itself through the paper, as might be expected; it resumes its form of a column, and may be inflamed behind the paper with just as great readiness as if the paper were not interposed between the current of gas and the ignited body. Again, if a ball of spongy platina be placed behind the paper, and in the direction of the current of hydrogen, the metal becomes red hot; if the sheet of paper be an inch or so from the orifice, provided that the platina be placed close to the paper—or but a short distance from it. It is well to remark that the pressure under which this phenomena is effected does not exceed that of four or five inches of water.

If a ball of spongy platina be enveloped in several folds of gold or silver leaf, and a current of hydrogen gas be directed against it, it soon becomes red hot, and the gold or silver will adhere to its surface. A ball of spongy platina placed behind a leaf of tin foil, against which a current of hydrogen gas was directed, became highly heated, but without being red hot. But as the foil is pierced with a multitude of fine holes, which may be perceived by placing a leaf between the eye and the light, the phenomena is not very remarkable. If, however, the tin foil be doubled, the platina still becomes strongly heated.

Hydrogen gas passes in the same manner through a fine membrane of gutta percha, such as is obtained by evaporating a thin layer of a solution of gutta percha in chloroform. But hydrogen gas will not traverse small pellicles of glass, however thin they may be obtained.

Lieut. Porter, U. S. Navy, has published an article in the "National Intelligencer," about hydrogen being the principle cause of steamboat explosions. His remedy is to silver-plate iron steam boilers, and to have a pipe rising from the steam jacket to the fire or engine rooms, to show the engineer when the steam is of blue color, which he states is a sign of hydrogen gas being formed in the boiler. The pipe spoken of, if well attended, and the boilers silver-plated, he thinks steam boiler explosions would be few and far between. We never expect to see our steam boilers plated with silver, although we do not doubt but the suggestion is correct, in order to prevent the oxygen of the water uniting with the iron, and thus setting the hydrogen free. Hydrogen, however, is not an explosive gas, a compound of it, with oxygen, becomes explosive, but will not explode unless ignited by a spark or flame. The steam which escapes from the safety-valve of a locomotive, is of a blueish color close to the valve, but that is no sign of its being dangerous, for hydrogen gas is colorless and transparent.

A New Cure for Bronchial and Consumptive Complaints.

Dr. Cartwright, of New Orleans, communicates to the Boston Medical and Surgical Journal, an article entitled—"The Sugar-House Cure for Bronchial, Dyspeptic, and Consumptive Complaints." It is stated that a residence in a sugar-house, during the rolling season, far surpasses any other known means of restoring flesh, strength, and health, lost by chronic ailments of the chest, throat, or stomach. The rolling season is the harvest, when the canes are cut, the juice expressed and converted into sugar. In Louisiana it commences about the middle of October, and ends at Christmas, but it is sometimes protracted into January. Dr. C. says the vapor is most agreeable and soothing to the lungs, and in his own case entirely removed a distressing cough. He stood for hours in the sugar-house inhaling the vapor, and drinking occasionally a glass of the hot cane-juice.

Lake Fisheries.

The Chicago Tribune gives some interesting facts respecting the fisheries on lakes Michigan and Huron. This business has gradually increased until, instead of being carried on by a few Indians and Half-Breeds, as it was a few years since, ten thousand persons are now more or less directly dependent on the fisheries of lake Michigan.

From a single district in the south end of this lake, embracing the islands, bays and main land, extending north and south about seventy miles, east and west about one hundred and twenty miles, it is said there will be shipped this year not less than 50,000 barrels of fish, which will command in market about $250,000. And this too, though the business is carried on under great disadvantages, the men engaged in it generally having no capital enough to carry it on to advantage.

A Fast Propeller.

The steamship "Glasgow" arrived at this port on Friday, last week, at 11 A. M., making the passage across the Atlantic from the Clyde, in Scotland, in 12 days 17 hours. This is the quickest passage ever made, we believe, across the Atlantic to the West, by a screw steamer; the last voyage of the Great Britain having occupied 13 days and 8 hours. It is not a little singular, that the only successful European steamers paddle-wheel and screw, running to America, have all been built on the Clyde, and the only successful Atlantic screw steamers have been built by the same company. The "City of Manchester," and the "City of the Glasgow," which run between Liverpool and Philadelphia, were built by Todd & McGregor, of Glasgow, the builders and owners of the Glasgow. None of our American propellers, have yet been successful as Atlantic steamers; what is the reason?

The "Glasgow" is an iron ship of 1800 tons burden; she is very long in proportion to her breadth of beam, and is of exquisite model. She has two peculiarly constructed overhead beam engines, of 450 horse-power each which are geared to a shaft having a large wheel meshing into a pinion on the propeller shaft. The propeller is the common Woodcroft Screw having three flukes.

The Cause of the Cholera at Rochester.

During the present season there has been a great number of cholera cases in the city of Rochester, N. Y., by which a great many of the citizens have been suddenly cut off. This disease is certainly very peculiar in its developements; sometimes it proceeds along from place to place, being carried by its infectious nature; at other times it is developed as a local disease, confined to a single place, and proceeds no further. The cause of the disease, as developed locally, can sometimes be accounted for, and the "Rochester American" believes that the present foul and stagnant condition of the Genesee River, consequent upon low water, may be one cause of the contined sickness in that city. It is said that the Genesee has never been at a lower ebb than during the past season. Some have asserted that the cholera is exclusively a geological disease; that is, it is never manifested in districts of primitive formations, such as the granite districts of New England. This theory is founded upon a very strong facts.

Protection from the Fumes of Charcoal.

Jewellers, gilders, refiners of metals, and others, who are exposed to the fumes of burning charcoal, should place a large shallow vessel, filled with lime water, (which is common water with slacked lime in it, in the proportion of about four or eight ounces of the latter to a gallon of the former) near the stove in which the charcoal is burning.

The lime strongly attracts the mephitic gas evolved by ignited charcoal, and thus has a tendency of preserving the purity of the air. When the surface of the water becomes covered with a pellicle or scum, it should be changed for a fresh supply.

A Novelty.

A raft 560 feet long and 60 wide, containing 60,156 feet of timber, valued at $17,000, recently came through the Dismal Swamp Canal, on its way to New York by the inland route. It was taken in tow by the steamer Jewess in the evening and towed up as far as the Chesapeake and Delaware Canal.—The raft was constructed in Pamlico Sound, in North Carolina, and the timber cut from the bordering yellow pine forests. One of the pieces was 83 feet long by 32 inches square, and contained 591 cubic feet. Its tollage through the Dismal Swamp Canal, we learn amounted to $450.

Large Deposit of Graphite.

At St. John, N. B., near the new suspension bridge over the St. John's river, a very extensive deposit of graphite has been opened and explored to a considerable extent. The vein, or bed as it might more properly be called, is nearly vertical, and inclosed between beds of highly metamorphic schists. It is entered near the water on the face of a precipitate cliff about seventy feet high, the walls of the lode being in the main parallel to the graphite deposit. This bed has been explored by a gallery or adit level over a hundred feet, and by cross cuts at right angles to this some twenty or more feet. All these are in the graphite mass, and of course the floor and roof of the levels are of the same mineral. The quartzose walls have occasionally approached, and in some cases masses of quartz, or schist, have been included in the graphite. The course of this deposit is about northeast and southwest, or nearly in the direction of the strike of the strata of schist. The graphite is not of a very superior quality as a mass, though portions of it are quite pure. As yet no solid and perfectly homogenous masses have been taken out. It has a foliated structure more or less highly marked. Iron pyrites is too abundantly diffused in it to admit of its use for crucibles. The chief economical use made of it has been in facing the sand moulds for iron castings, for which purpose it is ground to a fine powder. Some of the finer parts are also used to manufacture pencils. Many hundred tons of graphite from this deposit have already been taken out since the mine was opened two years ago, and the supply may be esteemed inexhaustible. The vein or bed re-appears on the opposite side of the St. John's river, and on the side now opened it has been traced over a mile. The position of the deposit in conformable metamorphic schists, suggests the conjecture that this deposit of graphite may represent a former coal bed.

Post Office Envelopes.

The post-route bill passed by Congress contains a provision authorizing the post office department to cause envelopes to be made, with suitable water marks on the paper, identifying them as official, and with a printed stamp, for single or double postage with a suitable device. These envelopes are to be sold at all the post offices, at the price of the stamps now sold—with the very small addition of the actual cost of the envelopes. This will enable persons to deposit their letters, pre-paid, in the post offices, at all hours, without trouble or inconvenience, and without the risk of having double postage charged on a letter, by reason of the stamp slipping off, by the time the letter gets into the office, if not before, as is too often the case now. It will also admit of the safe transmission of letters by private hand, when preferred, without a violation of the post office laws, which, after the 1st of October, will be very stringent on the subject.

Mines of New York.

St. Lawrence County is the greatest mineral region in New York State, and about Rossic is the peculiarly favored locality. There are two valuable lead mines there, the metal being found in veins, and not in deposits, makes the working of them a certainty, if not quite so profitable as some deposits in Illinois and Wisconsin.

The disease in the grape vine is still progressing in many parts of Europe, and on the shores of the Rhine, as well as in Piedmont. The old plants of the vine are all covered with oidium tuckerie. A remark which has been made, and is worthy of being mentioned, is, that all the young vines are not subject to the disease. According to the remark, the old vines must be replaced by young ones.

There are two saw mills at Chitantami, on the Saguenay river, Canada, which run 182 upright saws and 16 circular saws. From the St. Lawrence to those saw-mills the distance is 90 miles up the Saguenay. Square rigged vessels of large tonnage go up to the mills to take in their loads of lumber, and sail direct for Europe.

What is Said of the Scientific American.

"The Scientific American newspaper is a publication honorable to our country. To mechanics, manufacturers, and inventors, it is of great value, and to the general reader affords intelligence of the most useful and interesting character."—[Boston Post.

We fully endorse the above, and would recommend the Scientific American to all who have a taste for the mechanical arts, or who take an interest in the discoveries of the age and the advancement of science, as a faithful account is given in its pages of every discovery or improvement which this prolific age brings to light. Parties in this city wishing to subscribe, can see the Scientific American at this office.—[New Brunswicker.

We are somewhat negligent in the matter of puffing periodicals, magazines, &c., unless we are really convinced that they are deserving it. Among the meritorious publications of the day, none stand higher in the scale of utility than the Scientific American. It is emphatically and truly, a scientific paper—aiming at an honorable independence in discussion, upon all subjects pertaining to discoveries in the arts and sciences. It has ever been its aim to establish sound views respecting the several miscalled discoveries, that have from time to time been presented to the public. Its pages are well stored with practical knowledge, in every branch of the arts and sciences.

We should like to see a goodly number of the papers taken among our citizens in lieu of the light and trashy reading styled fashionable literature, which comes through our post office.—[Ledger (Fairfield) Iowa.

[We have hundreds of such notices, but for want of space copy only the above.

Joseph Thomas, of Owenboro', Ky., in sending a club of subscribers, says:—

"I would also return my thanks for the pleasure and information you have afforded me during the past year, and assure you that you shall continue my name as a constant subscriber, as I know that your publication is calculated and does advance the interests of the community. I cannot forbear saying to you that, by the publication of one of your receipts, I saved more than twice the price of the paper. I needed some spelter solder in my mill, and could not get any in town, and was about to start for Evansville, forty miles distant, but fortunately thought of the Scientific American, and made as good as ever we used, this is a small matter to write you about, but I could not resist, and it is not the only time I have been benefitted."

Mr. Clark, of Ridgeway, N. C., says:—

"I have received your paper from the first number to the present time, and have been both pleased and profitted by the perusal of its contents, and am confident it will well repay, more than many times four-fold, for all the money, time, and labor spent upon it, any person who will carefully peruse its columns."

Geo. Walker, of Monroeton, Pa., says "it is emphatically a progressive paper, each succeeding volume being superior to all preceding ones. I have been a regular subscriber for four years, and have derived both pleasure and profit from its pages; I would not do without it."

Almost every subscriber has a good word for the Scientific American when renewing their subscriptions.

A natural phenomenon, which may be called one of the seven plagues of Egypt, took place on the middle of last month, at Legano, in several places of Germany, and at Friebourg, and consisted of the appearance, in those places, of clouds made of flying ants, as big as wasps. These insects covered the ground, eat all the crops, and afterwards disappeared.

Natural Curiosity.

A chestnut tree, in Centre st, Pottsville, Pa. is covered with fresh blossoms, and, at the same time, hanging full with seasonable burs. The frosts of a few nights past have somewhat shorn it of its bloom, but enough may yet be seen to mark the singular anomaly.

Sir Charles Lyell, the geologist, is on his way to the Western States to make another visit.

(For the Scientific American.)

How Worlds are Sustained.

Few indeed are the principles made use of by Nature in carrying on her operations. Force and inertia govern all the movements attending matter. These two principles originate, carry on, and terminate all mechanical operations either in nature or art.

It is the force of the artizan that wields the tool, but inertia produces the effect; it is the force of gunpowder that gives motion to the ball, but it is inertia that does the execution; it is the force of steam that propels the boat through the water, but the inertia of the water enables us to direct its course; the force of steam, through piston and rod, acts on the crank of the engine, but it is the inertia of the fly-wheel that regulates the motion and renders it effective. It is the force of gravity that causes a heavy body to descend, but it is the inertia that gives the result of the fall; it was Omnipotent force that gave the planets their motion through the heavens, it is inertia that keeps up that motion; it is the force of attraction that holds them in their orbits, but inertia prevents that force from drawing them together; and, in fact, inertia appears to be the regulator of force throughout the whole system of created things.

Motion is a consequence of the action of force. The continuation of motion after a force ceases to act, is the consequence of inertia. Inertia may be termed the repository of force—for a body once put in motion, by any force, will continue to move until its motion is arrested by some other force equal that which first gave it motion; and though the length of time, or space passed over, be ever so great, between the cessation of action of the motive force, and the commencement of the retarding force; yet inertia will deliver over the whole amount of motive force to the obstacle that arrests its motion.

If a force act on a body at rest motion will result; and the body—if its motion be not obstructed—will continue to move on during all time; but if during any time of its motion a similar force should be applied in an opposite direction to the first, its motion will cease.

When the God of Nature spake the worlds into existence, he applied to them a certain force, which gave them a rapid motion; inertia has retained that force, and although it has been over six thousand years since the motive force ceased to act, yet it will take the same amount of force to stop their motion, that it took at first to give it.

When, aided by the powers of the telescope, we look out into the boundless expanse, and there view millions of suns, each attended by numerous worlds; we see the same principles carried out—we see millions of worlds all moving on harmoniously in their assigned orbits, governed by force and inertia; the motive force has ceased to act, but inertia carries them on, and will continue to do so until the Great First Cause shall, with a force equal that which gave them motion, bid their motion cease. J. B. Conger.

[We have received a number of communications, on force and inertia, which we have refused to publish, because a great deal has been said in our columns already on this subject, and we have no great liking to newspaper controversies. We are afraid that Mr. Conger has, in his comparisons, somewhat confused the real idea of what inertia is. Inertia cannot truly be said to produce an effect, as set forth, for it is the *passive* not the active quality of matter. There was just as much *inertia* in the tool before the artisan struck the blow, as afterwards. Inertia is simply that quality of matter by which it is incapable of spontaneous change, a body at rest cannot commence moving by any inherent power of itself, and when in motion it cannot stop, change its direction, or its velocity by any inherent power: this is inertia. The language often used to explain the property of inertia is calculated to mislead. Inertia implies absolute passiveness, a perfect indifference to rest or motion. It implies as strongly the absence of all resistance to the reception of motion, as it does to the absence of all power to move itself. There can be no doubt, however, as set forth by Mr. Conger, but *inertia* is the regulator of the material universe, the sustaining law of the rolling spheres.

Recent Foreign Inventions.

Purifying and Decolorizing Oils.—R. A. Brooman, of the firm of J. C. Robertson & Co., of the London Mechanics' Magazine, Patentee.

This invention consists of an improved method of purifying and decoloring cotton oil.

For this purpose an apparatus of the following construction is employed: it consists of a double-sided vessel, the interior chamber of which is appropriated to holding the oil to be purified, and the outer, which may be called the jacket, to the steam by which the oil is heated. There is a pipe by which steam is supplied to the jacket and steam-escape pipe. There is also a second steam-supply pipe, which leads to a steam box or chest, which fits on to the top of the oil chamber. To the bottom of this steam box are attached a number of open tubes, which serve to convey the steam to the bottom of the oil chamber, whence it forces its way up in a number of minute streams amongst the oil. Opposite the mouth of the second supply-pipe, where it opens into the steam-box, is placed a flat plate for the purpose of dispersing the inflowing steam towards the tubes. Hot air, or any other aeriform fluid containing oxygen, may be substituted for the steam. The tubes are of small diameter, and from 2 to 3 inches apart; but they may be of any form, as straight, or spiral, and disposed in any manner whatever, provided always they are in sufficient numbers to divide the inflowing steam, hot air, or other fluid, into a great many minute streams or currents. Supposing cotton oil to be that required to be purified, there is to be added to every 220 lbs. weight of oil introduced into the oil chamber about eighty-seven and a half pints of sea water (of the density of 11 lbs. of salt in every hundred and seventy-five pints of water, or thereabouts); and then the communication between the steam-supply pipe, and the steam box being opened, the mass is left to the action of the heat upon it for two hours. One and three-quarters of a pint of hydrochlorite of soda or potash is then thrown in, and after the lapse of about thirty minutes, from 2 lbs. to 4 lbs. of hydrochloric acid, and in lieu thereof, three and a half ounces of hydrofluoric acid. In from five to ten minutes more the oil is drawn off and filtered, and then transferred to a wooden vat, in order to undergo a course of mechanical agitation, but previous thereto, about one hundred and seventy-five pints of water, (which may be either warm or cold), and a lye of three and a half pints of hypochlorite of soda or potash are added. The vat turns on a vertical shaft or spindle, which is furnished with a number of radial arms, which, during its revolution, pass between a series of rods or pins, which project inwards from the sides of the vat. There are also several vertical pins which project downwards from the lowest of the radial arms (passing clear of the bottom of the oil chamber), so that the mass of oil is broken up and tossed about in all directions, by the action of the agitator. A very rapid rotation of the agitator is not necessary; but it must be kept going until the decoloration of the oil is apparent, which, if the rate amount to from seven to fifteen revolutions a minute, will be generally in about an hour, but if the quantity of oil be larger, the rotation may be more rapid.

Or, instead of the method just described, the cotton oil may be purified and decolored by the following cold process alone, combined with mechanical agitation. In this case a wooden vat fitted with an agitator similar to that last mentioned, is employed, and there is added to every 220 lbs. of oil from 4½ lbs. to 6½ lbs. of soda, or caustic potash, or bluestone dissolved in thirty-five pints of water. The agitator is kept going for about an hour, afterwards the mass is allowed to settle, and the supernatant fluid drawn off and filtered. Should the oil be slow in coming to a fluid state, the operation may be expediated by passing steam through a coil of piping or hose laid in the vat; and time will also be saved by increasing even to the extent of doubling the quantity of chemical re-agents employed.

After the oil has been treated by the methods described, there is usually added two per cent. of chlorine, more or less according to the degree of color still exhibited by the oil, and is then exposed to shallow pans to the light and air until every trace of color disappears. The employment of chlorine alone will suffice without the aid of any of the other operations before described, to effect the complete decoloration, but not so expeditiously.

Linseed and rape oils can be depurated by heat alone, provided always the temperature is not allowed to exceed 194° of Fah.

The invention also consists of certain improvements in the purificatian and decoloration of fish oils. The whole of this class of oils, with the exception of whale oil, are treated by the same cold process or processes, as have been before directed, to be used in the case of certain of the vegetable oils, after which, in order to deprive them of their offensive odor, there is added to every 220 lbs. of the oil, about 4½ lbs. of hydrochloric acid, and the mixture is subjected to the action of injected streams of steam, hot air, or other aeriform fluid, in an apparatus such as has been already described. In the case of whale oil, besides subjecting the oil to the action of injected streams of hot air, or other aeriform fluid as aforesaid, there is added, at half hour intervals, (to every 220 lbs. of the oil) one and three-quarters of a pint of the solution of nitric acid, and one and three-quarters of a pint of dilute oxalic acid; 2 lbs. of dilute hydrochloric acid (divided into two or three doses) and from 2 lbs. to 4 lbs. of chlorine.

All the before-mentioned processes, or at least with slight modifications only, may be applied effectively to the purification and decoloration of mineral oils, such as those of naphtha, shael, petroleum, &c. But it must be observed, of all oils of whatever sort which have been treated with acids, that the acids must be ultimately washed out of them (before use), by hot or boiling water.

Eel Fisheries in Oswego River.

A correspondent of the Syracuse Journal gives an account of the eel fisheries that extend from lake Ontario to Three Rivers Point, and then up the Oneida and Seneca rivers to Baldwinsville. Oswego river is lined with traps, called weirs, for catching eels, and some of the fishermen occupy, by some right established by the common law of the fraternity, the entire bed of the river.

"The wiers are constructed of stone and slabs, in shape like the two sides of a triangle, opening upward to the stream, and coverging at the bottom, or lower end. The fish are coaxed into a current, which sweeps them finally into a kind of box, when they find themselves high and dry, and unable to regain the water. When taken from the trap, the fish are first skinned and afterwards smoked and barrelled for market, finding a ready sale at eight cents per pound. An old fisherman who has four wiers at Fulton, netted $800 last year, from his fish. The average weight of these fish is a little more than a pound, some being as high as three or four pounds. a marked difference in quality is observed in the eels from different sections, those from Skaneateles having the preference. The fishing season lasts from June till November, when the fish swim down the stream. It is a popular notion among fishermen that the eel never returns to the place of breeding, wherever that may be; and there is much doubt in regard to the origin of this fish. Naturalists, however, do not agree with this opinion. The eel is not found, this writer states, in the Genesee river above the falls, nor in the upper lakes. At certain seasons they are seen in the bays of Lake Ontario, where they swim among the grass and weeds near the surface."

[We have to add to the above, that the smoked eels, sometimes, but not often are found in the New York markets; they are very fine and sell high. The approach of the eel season is known on the Oneida Lake by the eel fly, an insect with a long swallow tail, which comes in clouds, sometimes actually darkening the atmosphere at eventide. During the day they cluster on the fences, trees, and houses, which they cover as thickly as locusts do the bank of the Euphrates; they are perfectly harmless, however.

Dirt—Its Value.

"Gentlemen," said Palmerston, at the Royal Agricultural dinner, "I have heard a definition of dirt. I have heard it said that dirt is nothing but a thing in the wrong place.—(Hear, and laughter.) Now, the dirt of our towns precisely corresponds with that definition. (Hear.) The dirt of our towns ought to be upon our fields, and if there could be such a reciprocal community of interest between the country and towns—that the country should purify the towns, and the towns should fertilize the country—(laughter)—I am much disposed to think the British farmer would care less than he does, though he still might care something, about Peruvian guano."

Effect of the Earth's Rotation on Locomotion.

Mr. Uriah Clarke, of Leicester, has called our attention to an article in the Mechanics' Magazine, written by himself, on the influence of the earth's rotation on locomotion. It is well known that, as the earth revolves on its axis once in twenty-four hours from west to east, the velocity in any point on its surface is greater nearer the equator, and less farther from it in the ratio of the cosine of latitude. Mr. Clarke says:—Some rather important conclusions in relation to railway travelling arise out of the view now taken. The difference between the rotative velocity of the earth in its surface motion at London and at Liverpool is about 28 miles per hour; and this amount of lateral movement has been gained or lost, as respects the locomotive in each journey, according to the direction we are travelling in from the one place to the other; and in proportion to the speed will be the pressure against the side of the rails, which, at a high velocity, will give the engine a tendency to climb the right hand rail in each direction. Could the journey be performed in two hours between London and Liverpool, this lateral movement or rotative velocity of the locomotive would have to be increased or diminished at the rate of one-quarter of a mile per minute, and that entirely by side pressure on the rail, which, if not sufficient to cause the engine to leave the line, would be quite sufficient to produce violent and dangerous oscillation. It may be observed, in conclusion, that as the cause above alluded to will be inoperative while we travel along the parallels of latitude, it clearly follows that a higher degree of speed may be attained with safety on a railroad running east and west than on one which runs north and south. There is no doubt of the tendency Mr. Clarke speaks of on the right hand rail, but we do not think it will be found to be so dangerous as he says. It will be greatest on the Great Northern and Berwick lines, and least on the Great Western.—Herapath's Railroad Journal.

[The effect of the earth's rotation upon a rail of the broad or narrow gauge placed a few feet apart from its fellow, must be so small as would stop any person of good sense from saying anything about the engine *climbing the right hand rail.* And speaking of the greater velocity of the earth towards the equator, we can see how a train might be affected running east and west, but not north and south as stated above.

Discoveries in the Bottom of Harlaem Lake.

It is stated in one of our English papers, that the work of draining the Lake of Harlaem, has led to the discovery of an immense mass of human remains, deeply imbedded in the mud, and placed precisely on the spot where, according to a topographic chart, laid down in 1511, and which has always been considered as perfectly accurate, the unfortunate village of Nierewenkirk was situated, and which, in 1539, was swallowed up by one of those irruptions of the North Sea, which formed the immense Lake of Harlaem.

Useful Things to Know.

To Cure Hickup—Raise one or both hands as high above your head as you can, it is a certain cure.

Anti-rat Mixture—Mix a small quantity of tar with tallow, and rats will not steal it from off water-wheel gudgeons, and other heavy bearings; also for leather harness; neither cattle, rats, nor mice will touch them.

Chlorate of Lime for Poison Ivy—I can recommend the liquor-chloride of lime as a good external remedy for poison ivy.

C. B. F

NEW INVENTIONS.

Improvement on Violins.

Moses Coburn, of Savannah, Georgia, has taken measures to secure a patent for a unique improvement on violins. The instrument is made of a gradually increasing width from the neck to the bottom, or of a nearly angular form, only so far departing from it as to destroy sharp corners and stiffness of form. The external convexity of top and bottom, however, are preserved. The reasons for departing from the common form of violins, is, that the instrument being made so much narrower at the middle, it makes two vibrating bodies instead of one, as by the new improvement. The two parts of the common violin vibrate independently, and not in accordance with each other, therefore they interrupt the free and perfect intonation of the strings. Mr. Coburn is a professor of music, and teaches it in Savannah; he is, therefore, capable of forming an excellent judgment respecting the defects of the old violin, and the improvement which scientifically, will remove the evils. In his violin he places the air apertures in the sides, in order that the top may not be weakened by cutting them through. Thus the top of his instrument presents a fair, unbroken, triangular table, and looks neat and handsome to our notion of such things.

Improved Fastener for Window Sash.

William Morehouse, of Albion, Orleans Co., N. Y., has taken measures to secure a patent for an improvement in the construction of window sash, so that they can be raised and retained at any position desired, and prevented from rattling without the necessity of employing cords, weights, pulleys, or any of the catches and eccentrics in common use. The sash has a vertical groove nearly its whole depth in one of its sides, and there are some spiral springs placed snugly therein, and covered with a strip of wood which is peculiarly fitted to it. When the window is raised the tension of the springs upon the strip presses upon the window frame and retains it in any position in which it may be placed.

Cider Mills.

F. B. Hunt, of Westfield, Hamilton Co., Ind., has invented a new improvement in cider mills. He employs two adjustable endless aprons, with spurs on them, for feeding in the apples, and by which the apples can be cut as desired, by cutters, or any substance, such as beets, turnips, carrots, cabbages, &c., may be cut with the one set of cutters, as desired, without the necessity of employing several implements for this purpose, as is now the case. The press is portable, and very convenient for the purposes stated. Measures have been taken to secure a patent.

Machinery for Moulding Smoothing Irons.

William D. Cummings, of Maysville, Ky., has taken measures to secure a patent for a new machine for making hollow smoothing irons. It is designed for the purpose of moulding the box or the body of the irons, for which a patent has been granted to himself in conjunction with N. Taliaferro, and its object is to enable them to be moulded with great rapidity, and of much better quality. The common slow process is superseded, and the machine enables the moulder to cast a great many irons in a very short time, and continually, a thing he could not do by the old way.

Self-Holding Screw Driver.

Jacob W. Switzer, of Basil, Fairfield Co., Ohio, has taken measures to secure a patent for a self-holding screw-driver, which consists in combining with the ordinary brace and bit stock, a self-holding screw-driver for holding the screw firmly and securely, while the operator is driving or withdrawing a screw. There are spring catches on it, which have jaws, into which the screw is placed to be driven in. With pointed screw-nails it dispenses with the use of the gimblet entirely. It is certainly very convenient to work it, like a bit-stock.

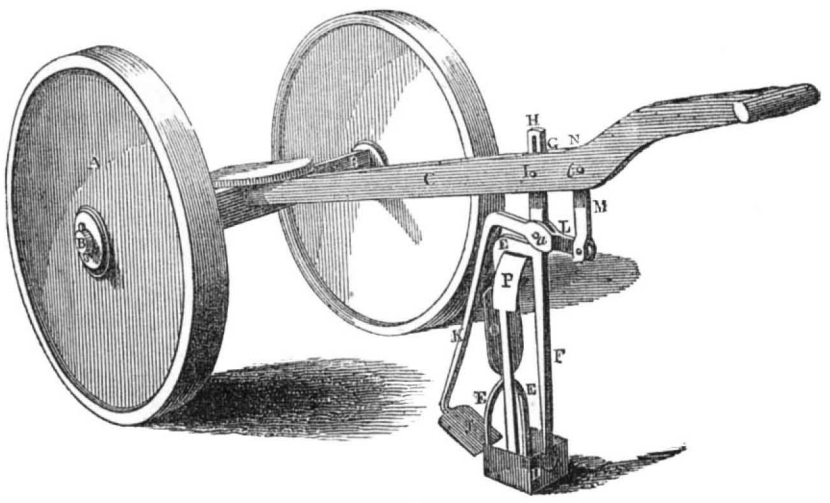
New Carpet Loom.

The editor of the "Worcester Palladium" has recently seen in operation, at Mr. Bickford's machine shop, in that city a new carpet loom, the invention of John Goulding, a gentleman of well-known mechanical ingenuity. He says it is much more compact, and occupies much less room than any other carpet loom now in use; requiring a space 20 by 10 feet in a room 10 feet high. It weaves nearly twice as many colors as any other loom, of any pattern of Brussels carpeting that may be desired, and performs the work with much neatness and precision, and gives to the web a high finish. It is a beautiful machine, of great simplicity in its construction, and all the parts apparently so adjusted as to be durable in operation.

Foreign Patents.

Under the new law, patents for Great Britain can be secured at greatly reduced prices, and with such superior facilities as we possess, parties wishing to secure foreign patents will do well to consult with us in anticipation of any business they may have to transact abroad. We solicit for Patents in the United States, Great Britain, France, Belgium, Austria, Spain, Prussia, Russia, and all other countries where laws for the protection of inventors exist.

DITCHING MACHINE.



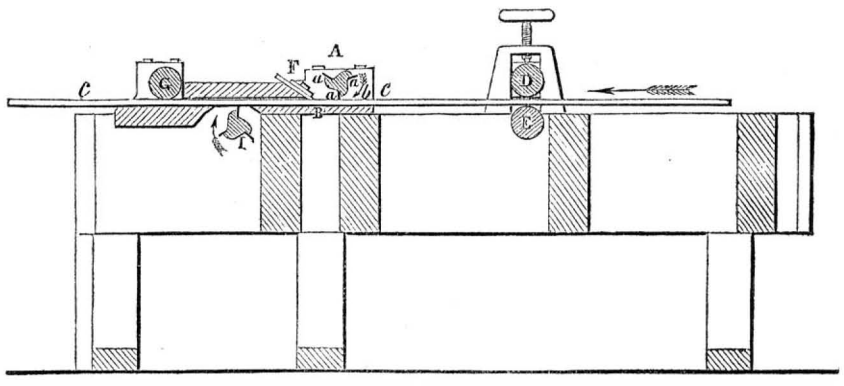
This engraving is a perspective view of a machine for digging ditches, invented by Jonathan W. Morrill, of Hampton Falls, N. H., who has taken measures to secure a patent for the same.

AA are the wheels; B is the axle of the same across which the beam lever, C, is secured. The cutters for ditching are placed and secured in this lever. D D D are the cutters for cutting the sides and front edge of the sods. These cutters are united together and are braced and supported by the stirrup brace, E, which has a vertical bar, F, secured to the front edge, and passes up through the slot, G, in the lever, C. This bar, F, has a slot, H, cut in its upper end, with a pin, I, passing through it to make it fast to the lever. As the cutters are raised and lowered, the slot in bar F admits of the lever, C, being depressed and raised. J is a spade, cutter, or scooper; it has a bent handle, K L, which turns on a fulcrum pin, *a*, which passes through the bar, F. The part, L, is secured to a link, M, which passes up through a mortice, N, in the beam, and it is loosely secured in the same by a pin, *c*, which allows it to move back and forth as the cutters, D D D, and spade, J, are depressed or elevated; O P are thin plates of metal for guiding the sod as it is raised up, and for throwing it out at the side of the ditch. The plate, P, is but to incline the sod to the one side.

To work this agricultural implement, it is brought to its proper position to make the ditch, and the attendant applies his weight to the front end of the beam, and the square cutters, D D D, are depressed, and enter the ground straight down, cutting three sides to the depth of eight or more inches, and then he goes to the back end of the beam, and puts his weight upon that; this action of the attendant makes the spade lever swing forward and forces it into the ground between the cutters, D, thus cutting a square deep sod clean from the bottom. The machine is then moved forward about six inches or nine inches, and the same operation repeated; the second sod which is forced up into the box cutter, throws the first sod up and out at the side. The spade, J, has a very peculiar action, and the beam, C, is employed simply as a horizontal lever, and no more, and the wheels are for the purpose of moving the machine easily forward. Two men should always be employed to work this machine. The inventor states that he has worked it and that "it performs admirably."

More information may be obtained by letter addressed to the inventor.

NORCROSS'S NEW PLANING MACHINE.



The annexed engraving is a longitudinal section of a machine for planing boards, for which a patent was granted on the 22nd of last June (1852), to N. G. Norcross, of Lowell, Mass. A is a rotary cylinder, with a series of planes, *a a a*, placed above a bench or rest, B. The said cylinder revolves in the direction of the arrow, *b*, or that of the board, C, which is moved under it, so as to cut from the unplaned surface of the board towards its planed surface. D E are the feed rollers; after the rotary cylinder, A, then is placed a straight stationary inclined plane iron, F, arranged near to the path of the knife edges of the cutter cylinder. G is an emery or smoothing drum; its surface is covered with teeth like those of a file or some abrasive material, to smooth and finish the board after the plane F, has acted upon it. The drum, G, may be made with a corrugated surface, to give the board a grained appearance. I is another cutter cylinder, the cutters of which rotate and cut below on the board, from its planed to its unplaned surface. The planing machine of Daniel Hill, of Stoneham, Mass., invented in 1828, for the purpose of planing boards, had a rotary cutter placed underneath the surface of the board, which was supported and moved along on a bench. This machine could not reduce an uneven board to an equal thickness throughout, but the board was prevented from being drawn downwards, and it was cut from its planed to its unplaned surface. A planing machine invented by M. Roquiere, for which a patent was granted in France in 1818, as described in Vol. 23 of "Brevets d'Inventions," had its rotary cylinder placed above the bench, and cut the board from its unplaned to its planed surface. Woodworth's machine has a rotary cylinder placed above the board, which cuts from the planed to the unplaned surface, and it has pressure rollers to hold the board down, to keep it from being lifted up. The machine which cuts from the unplaned to the planed surface, labors under the difficulty of dulling the planes or cutters much sooner than the one which cuts from the planed to the unplaned surface, owing to sand and dirt being ingrained in the surface of the board, but, at the same time, the surfaces of boards planed by a rotating cylinder are not planes, but are curved by the dubbing or adze cut of the cutters. This machine of Mr. Norcross is intended to reduce a board to an even thickness, and also to reduce the upper surface to a plane surface, grained, or made corrugated in a longitudinal direction. No rollers are employed to hold the board down or counteract any tendency of the rotary cylinder to lift it, as in the Woodworth patent, because the upper cylinder operates on the board in the contrary direction, and tends to force the board down on the bench instead of lifting it up, and the under cylinder to act in the contrary direction. The rotary cylinder above is employed to take off the rough surface of the board and reduce it, so that the stationary plane, F, can operate on it afterwards, and easily make on it a plane surface. By placing the stationary knife close up and near to the path of the revolving knives, the riband shavings made by the former, are cut up and thrown off by the latter; this is an advantage over stationary planing machines which require an attendant to take away the ribbons of shavings from the knife boxes. The claim is for a cylindrical rotary set of cutters to remove the rough from the unplaned to the planed surface, in combination with the stationary cutter for finishing without pressure rollers or pressure bars of any kind, as set forth.

In practice, this machine, we have been assured, works admirably, with a great saving of power. It must make a beautiful surface on a board, and to will no doubt attract much attention. A number of inquiries have been made of us respecting it by those who had read the claim of Mr. Norcross as published in our list in the last volume. Here it is illustrated, and a machine can be seen in operation at Lowell, Mass., every day, where its practical qualities can be examined. One will also be exhibited at the Fair of the American Institute, which is to be held at Castle Garden in this city, next month.

The Prizes Again.

Persons competing for the prizes offered for the four largest lists of subscribers, are urgently requested to send in all the names they procure as early as the first or fifth day of December, which will enable us to announce the result in the number issued December 18th. We have already received a few lists, and a promise of additional names. We earnestly solicir competitors to mention with each remittance, that they are competing for one of the prizes, otherwise we might overlook their letters where only a very small number of names are sent in at one time. Our correspondence is exceedingly large, hence the impossibility of remembering every writer's name.

An Exemplary Omnibus.

The following is the description of a new 'bus about to be set up in London:—

"First, the seats in the interior are all separate, so that a person on entering, can immediately perceive which is his place, instead of seating himself in his neighbor's lap. Second, there are two entrances, one at each side, between the wheels, so placed that persons may enter without stepping into the muddy roads. Third, there is a check-string for each passenger, to indicate on which side of the road he desires to be set down. On the outside, instead of the abominable "knife-board," are twelve separate seats, easily approachable by ladies by means of a staircase, and not a ladder or step. These seats are as comfortable as the interior, and as safe; and, moreover, by means of a frame and a light cover, which rolls up with a spring behind the driver, can at any time be protected from the weather; so that, even during heavy rain, the carriage would fill outside as well as in."

Scientific American

NEW-YORK, SEPTEMBER 25, 1852.

Apprentices in Cities and Country.

We have been frequently asked by parents from the country about the propriety of apprenticing their sons in cities. The idea seems to be prevalent that a youth can learn to be a better tradesman in the city than in the country. We believe it is a mistaken one; they will learn to be better tradesmen in a country shop, if the employer is a good mechanic and a steady man, than they can do in in a city. A small shop also has more advantages for an apprentice than a large one. He has an opportunity of putting his hand early to all kinds of work, and therefore he becomes a more general workman than the one who learns his trade in a city. It is also better for a young man to learn his trade in a shop where there is only one apprentice than when there are many of them. In a shop where there are a number of boys, they play and trifle away their time every inviting opportunity. In large shops, in cities, the boys are neglected by both employers and journeymen, they are made to do the drudgery work, and there are so many exciting things which lead away their thoughts from their business, that, with few exceptions, they do not seek for knowledge by conversing with one another, or with the journeymen, about this and that improvement, or the scientific part of their business. In spare moments their talk is principally about this fire engine beating another one, or this and that steamboat beating such another one; they do not converse about the causes which produce certain effects, but talk about effects without the least allusion to causes. An apprentice, in a city, must either run with a fire engine or belong to some military company, and thus his mind is diverted from being employed usefully in acquiring a full and complete knowledge, practical and theoretical, of his trade. There can be no doubt but what there is a greater variety of different kinds of work done in city than there is in country shops, and were all other things equal, this would claim from city shops the pre-eminence for the acquirements of a good mechanic, but the drawbacks are so numerous that we advise the young man who wishes to be a good mechanic, to serve at least the three first years of his apprenticeship in some country shop, under a good skillful and attentive employer. After that, he should come to the city and learn what he can, it he is rooted and grounded in moral principles; if not, let him not come near the alluring scenes of a city life.

We find great fault with mechanics in every shop, in country or city, for being so little devoted in searching after the very knowledge which would be most beneficial to them in their separate trades. How few of them learn to be draughtsmen and mathematicians, and yet these qualifications are essential to their rise and progress in life. It is to be regretted that so few of them read and study good works in comparison with the great many who read useless and empty books, and whose conversation is distinguished by much foolishness and little sense.

We speak thus in kindness, in order, if possible, that we might lead *some* to consider their ways, and rise above the evil trammels in which they fetter their minds. The time will soon be at hand when Evening Schools will be opened in our cities, and when young men will have more time to read and study. We hope they will not neglect those opportunities now, for as time misspent can never return, so neither can neglected means of improvement be purchased in any future period of life.

Colored Dagerreotypes.

The "Philadelphia Ledger" of the 14th instant, contains an extract about the discovery of producing colored daguerreotypes by Niepce St. Victor, which, it says, is taken from a communication to the "National Intelligencer." We do not know who the author of that communication is, but we do know that the very language of it is taken from an editorial article on page 3 of the last volume of the Scientific American. Curious coincident—very!

We often see communications from correspondents in our daily papers, describing things as new, which these same paid correspondents read in our columns six months or a year previously; it is the case with these colored daguerreotypes.

Let the Inventor's Name be put on his Invention.

In our article, last week, on the Ventilation of Railroad Cars, Nelson Goodyear was mentioned by a correspondent of the "New York Daily Times," as being the inventor of the system of ventilation which involves the principles of Mr. Paine's patent. Goodyear never made any invention for ventilating cars; he purchased the invention from Edward Hamilton, the inventor, and sent it forth with his own name. This is a very common custom with assignees, but it is not an honorable one. Here we see steam gauges sold with the name of "Ashcroft" on them, while the inventor is M. Bourdon, the eminent Frenchman. There is a famous feathering paddle wheel much used in England, which goes under the name of "Morgan's Wheel," while the real inventor is Elijah Galloway: Morgan was only the assignee. There is the Compound American Rail, too, which goes under the name of "Winslow's Compound Rail;" the invention is that of Alfred B. Seymour, of whom the public hears nothing. In England, when a Patent Agent takes out a patent for a foreigner, why, it is always in his own name,—the name of the inventor is never mentioned. We think men who tack their own names to the inventions of others, exercise a wonderful amount of modest merit. They have bought out the inventions of some poor patentees; and why, forsooth, have they not the perfect right to try and make the public believe they are the real inventors. "All is fair in politics," says the active and unscrupulous partizan, and is it not equally fair to be guided by the same rule in business? To be sure it is, says the purchaser of a patent, and straightway the invention of another man flourishes under the name of the purchaser. There are some assignees of patents—the majority we believe—who are honorable enough to allow the inventions, of which they have become purchasers, to go under the names of the real inventors; we give them credit for a gentlemanly spirit, and hope that all assignees, after this, may go and do so likewise.

Inventions Come and Gone.

It is sometimes wise to look behind, and from the past glean instruction for future guidance. Errors are instructive, if rightly applied, in order to prevent their recurrence. In looking over the columns of our last volume, we have been reminded of some things which had their brief day of wondering existence, dazzling for a while to delude and lead the unwary astray, as the *ignatus fatuus* has been represented to lead the weary wanderer into the fatal quagmire. It is not a little consoling to reflect, that we have endeavored to be faithful in warning voyagers against false lights, in order to save their barks from being shipwrecked. None of our readers can forget how we plainly pointed out the impossibility of the Electric Light being that which it was represented to be. A great noise was made about this light, and some with professional titles attached to their name, wrote lavishly on the subject; but now the light is out, and we see it no more.

Who can forget the Remington Bridge and the excitement created in our country about the wonderful adventures of its inventor. All the old bridges of our country were built on wrong principles; the new one was to create a new era in civil engineering. Some of these structures were erected in different parts of our country, but where are they now? ruined wrecks—broken monuments of folly. There was another asserted discovery, which made a great noise for a brief space, but now slumbers in its hollow cave of darkness and gloom, we allude to the Hillyotype. This was a discovery asserted to have been made, by which pictures could be taken by the daguerreotype process, and all the colors of face and apparel as fully developed and brought out on the plate, as they appeared on the living subject. Nay, it was asserted (but who saw it?) that the discoverer, swift as the passing thought, had taken the picture of his own child, with its ruby cheek glistening through a falling tear. The picture in print was lovely—quite in the style of Uncle Toby; but alas for its existence, it is not. It is true that a letter was published in many papers, purporting to be from Prof. Morse, who knew something of the truth and the value of the discovery, and when eminent men like him write letters, they do impart confidence to many respecting that which they write about, but that letter, along with many others from high quarters, teaches us to "trust not in princes."

We might allude pointedly to a number of other such alleged inventions or discoveries, but we presume we have said enough; our object, in such articles, is to set forth the necessity of constant vigilance in the examination of all questions, inventions, and discoveries, which appear from time to time before the public. We think we hear one saying "what has become of the static pressure engine?" Ah, friend, it has gone where we predicted it would, along with its unscrupulous panders, namely, down into the slough of contempt, and this is all that we now have to say about it. There can be no doubt but such things will be revived from time to time, but it is not now, as it was at one period, when, without an intelligent press to warn and instruct, impostors were rife and abundant, yet they are not entirely banished from community, for, from time to time, we hear of people paying for their folly because they are too careless, or penny wise and pound foolish, to read and learn. Nothing that is new should be viewed lightly, and nothing that is old cast aside merely because of age. Everything should be esteemed for its good qualities, whether it be new or old; it is our duty, and the duty of every man, to "prove all things, and hold fast that which is good."

Hydraulic Rams.

These hydraulic machines are coming, as they should, into very extensive use throughout our country. They are of immense importance to all our agriculturists. The Planter of Virginia, and the Farmer of Ohio, are alike interested in their application and success. We have heard reports from many quarters, about their superseding other powers, for elevating supplies of water for domestic purposes, and for irrigating lands. We have before us the Report of the Committee on Science and Art of the Franklin Institute, Philadelphia, on the Hydraulic Ram of H. P. M. Birkinbine, of that city. It is stated in said Report, that Mr. Birkinbine has constructed and put into use no less than one thousand of these machines, and one has been put up in the town of Naples, New York, intended for the supply of that place with water. The fall is six feet; it forces the water sixty feet high, and discharges 20,000 gallons per day; the driving pipes are six inches in diameter. One of these rams has been erected to supply the Girard College with water; it has a driving pipe of two and a half inches in diameter, one hundred and sixty feet long, and a fall of fourteen feet. The delivery pipe is 2,260 feet long, one inch diameter, and the water is elevated 93 feet. The co-efficient of this ram is seventy-one per cent.

After enumerating a number of valuable improvements made by Mr. Birkinbine, it states that a valuable one was made by Joseph Strode, of West Chester, Pa.; this consists in laying down the driving pipe, or that which conveys the water from the fountain head to the ram, in the form of a cycloidal curve, which is the curve along which a body descends from one given point to another in the shortest time, and therefore with the greatest mean velocity. By this means the momentum of the descending column, upon which depends the effect of the ram, is increased.

A large ram has been erected at New Brunswick, N. J., on the Delaware and Raritan Canal, on which Mr. Strode has made some valuable improvements, which Mr. O'Neil, the Superintendent, states, operates far better than was expected. The improvement consists in dispensing with Birkinbine's water cushion by lengthening the driving pipe, so that the issuing water shall have its velocity diminished, and the stroke of the valve thereby softened. This, however, cannot be done by laying the driving pipe straight without losing too much per centage; it is done by laying the pipe of the curve of quickest descent already spoken of. In a recent case, with a new ram, Mr. Strode put in a two inch iron driving pipe, 250 feet long, under a 16 feet fall, which raises water 132 feet high, and gives a high per centage. Here, then, we have evidence that the length of the driving pipe may be usefully increased if made of a right form—the proper curve. A Hydraulic Ram erected in Thornbury, Delaware Co., Pa., with the driving pipe of the proper curve, has given 94 and 97 per cent. Thus we have a most valuable improvement made on these rams, for which the inventor intends to apply for a patent, and our country will no doubt be greatly benefitted by the discovery.

Shade Trees in Cities.

In the "Horticulturist" of last month, of which the accomplished and lamented A. J. Downing was the editor, there is a sharp and slashing article against the Ailanthus, as a shade tree for cities and villages. The article recommends the axe to be laid to the root of this tree at once, and to substitute for it the native maple and the tulip tree. The reasons given for this, are two, and only two, namely its offensive smell, and its overrunning or propagating qualities. The latter *vice*, as it is termed, of this tree, is too purile a reason for its extermination; the first—its bad smell—is the only good one. The trouble of lopping down suckers, is nothing at all except to lazy people. It is acknowledged that in foliage it is beautiful, and that none of the ugly vermin, so prolific among other shade trees in cities, trouble it. It grows very fast, is straight and oriental-like, with its nodding plume of long slender leaves; should we not consider the proposition for its destruction well, however high the authority may be, before the public consents to its death? This is wisdom; and first it should be asked, "has it really such a bad odor, as will not compensate for all its good qualities?" If it has, lay the axe quickly to its root; if not, "Woodman Spare that Tree." Our olfactory nerves may not be so acute as those of some others; we therefore cannot consent to its death; but we must say, that we like our native maple and tulip trees much better; they, however, are much slower in growth to form shade trees, than the ailanthus.

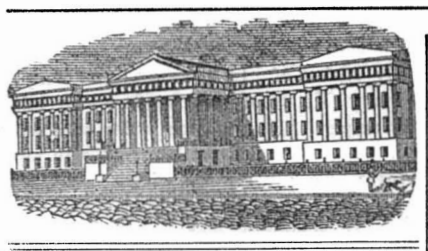
We learn by the Western Horticultural Review, Cincinnati, that a spirited discussion was recently held by the Cincinnati Horticultural Society, in which the merits and demerits of this tree were freely canvassed. Its merits, as set forth by the Ohio Horticulturist, fairly threw every argument for its extirpation in the shade. Mr. Ernst, during long experience, never knew any malaria or poisonous effects to proceed from it; it was free from insects, and a beautiful tree in any situation. Mr. R. Buchanan gave the same testimony, but the majority of the Society agreed that it had an unpleasant odor, which an old gardener stated might easily be abated by cutting off the stamens, by a proper instrument just before they expanded, as all odors chiefly arose from them.

Our people are too liable to go everything by fashionable excitements, instead of individual independent taste. This is the reason why whole avenues of one kind of tree may be seen in one place, and whole avenues of a different kind of tree in another place; and how at one time one kind of tree, only, will be in demand, and at another period a different tree will be the only one in demand. We like to see variety; and the ailanthus is a beautiful, suitable, and excellent tree to give a chequered air of beauty to the scene. We do not like to see any street lined and shaded with only one kind of tree; we like to see the maple, whitewood, mountain ash, horse-chesnut, ailanthus, &c., mingled in harmonious rows.

A Safety Lamp.

A Mr. Newell, of Boston, it is asserted by the papers of that city, has invented a safety lamp for burning fluid, which can be used with perfect safety. We hope this is true, if so, it will save a great amount of suffering.

The chloride of zinc is now used in Paris for the preservation of anatomical specimens, a prize of 2,000 francs has been awarded to M. Sucquet for the discovery.



Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office.

FOR THE WEEK ENDING SEPTEMBER 14, 1852.

CLOTHES PINS.—By Samuel Aldrich, of Springfield, Vt.: I claim, by letters patent, the improvement of manufacturing clothes pins from wire of any suitable metal, with jaws attached, operated by a spring, or lever, as being the most simple, cheap, effective and durable of any kind in use.

CONNECTING JOINTS FOR WASHING MACHINES OR OTHER PURPOSES.—By S. L. Egbert and S. W. Green, of Willoughby, Ohio: We claim the construction of the joint by which the connecting rod is attached to the spring board, by means of the knife edges disposed in a right line and confined by the straps and backing piece, substantially as set forth.

PRINTING PRESSES.—By Charles W. Hawkes, of Boston, Mass.: I claim, first, a pair of nippers, so constructed as to draw the paper from the form, by griping the margin of the paper firmly between the jaws of the said nippers, and at the same time holding the paper a little distance from the platen as set forth.

Second, I claim the adjustable spring and rod for holding the nippers up from the platen, as described.

Third, I claim the fingers for holding the edge of the sheet, in combination with the swing platen, as set forth.

LIGHTNING RODS.—By Herman H Homan, of Cincinnati, Ohio: I claim, first, the formation of the point of a lightning rod of successive sections of different metals, each being of greater fusibility than the one below it, and having oblique junctions, so that an over-charge of the electric fluid simply melts off the upper section, without enlargement of the point below, either by its own partial fusion, or by the lodgment of the upper metal upon it.

Second, uniting the successive sections, of an obliquely sectional lightning rod point, by solder or brazing, which is at each joint fusible at a lower temperature than the section immediately above it, so that the melting of the point shall remove the entire uppermost section, and thus more certainly prevent the lodgment of any portion of the melted section upon the point thus exposed.

SMUT MACHINES.—By C. and J. Keeler, of Union, N. Y.; We claim, making the blowing apparatus, with the drawer and spout, movable, substantially as described; so as to allow of the wind chest and pipe being easily taken out and turned in either direction, to admit of the machine being driven in whichever direction may be desired.

COILED WIRE FERRULES.—By Wm. T. Richards, of New Haven, Conn.: I claim, the method of cutting the wire at right angles to the axis of the coil, so that the ends of the ferrule will be perfectly true, without wasting any of the stock by the use of the short mandril, the clamp or holder, and the cutting die, when the machine is constructed, arranged, and made to operate, substantially as described.

I also claim, the combination of the method of cutting the coil, with the method of supporting the long coil and of feeding it, and of throwing off the piece when severed, when combined, arranged, and operated, substantially as described.

SHUTTLE GUIDES TO LOOMS.—By Horace T. Robbins, of Lowell, Mass.: I claim, first, the guide or its equivalent, either with or without the flange, in combination with cloth weaving looms, or as applied and used therewith, substantially in the manner and for the purpose of guiding the shuttle.

Second, I claim, the spring and finger, or their equivalent, so arranged as to hold the guide in its proper place, substantially as specified.

PORTE MONAIES.—By Benj. S. Stedman, of West Meriden, Conn.: I claim, first, the manner substantially as described, of putting the leather or other material in the frames, by forcing a sufficient quantity through the frame, with a die or plunger at the back side, and then by a larger die pressing the part so forced through, and folding it over the inner edge of the frames

Second, the form and construction of the clamp, which holds the frame and the leather or material, to wit: the lower part having an opening just large enough to allow the die to pass through and the upper part having an opening large enough to allow the die, to pass through and fold the the leather or material over the frame, and having a recess in its inner or bottom face, around the said opening to receive and hold the frame in it, so that the leather or material, is held independently of the frame and allowed to be drawn through the frame, substantially as described.

DOOR LOCKS.—By Wm. Moore, of Williamsburgh, N Y., (Assignor to James Carman of New York, N. Y): The dividing plate being well known, is public property, therefore forms no part of my claim. I claim the tumbler enclosed by the dividing plate, to be operated on solely by the key, when entered from the inner key hole, in combination with the revolving check, or its equivalent, and the bolt, for the purpose as described.

FORGING MACHINES.—By Geo. H. Richards, of West Roxbury, Mass., (Assignor to Calvin G. Plimpton, of Walpole, Mass.): I claim, the sliding guide, traversing upon the side bars, as described; having a pin, pivot, or fulcrum—one end of which is attached to the sliding guide, while the other end of the hammer, in which it is so fitted as to allow the hammer to turn a short distance, when power is applied to it by means of the crank, cam, or eccentric, and the connecting rods.

DESIGNS.

COOKING STOVE—By Samuel D. Vose, of Albany, N. Y.; ante-dated March 14, 1852.

PARLOR STOVE—By Conrad Harris and Paul W. Zoiner, of Cincinnati, Ohio.

COOK STOVE—By Samuel D. Vose, of Albany, N. Y.

COOK STOVE—By N. S. Vedder, of Troy, N. Y.

PARLOR STOVE—By James J. Dalley, (Assignar to Johnson, Cox & Fuller, of Troy, N. Y.

Orders in Appeal from the Commissioner of Patents.

1. In every case desired to be tried before me, the petition must be addressed to me as "Assistant Judge of the Circuit Court of the District of Columbia."

2. Previous to any action by me, and preparatory to hearing any appeal, the party must comply with the requisites of the law in the Patent Office; and his petition to me must state concisely the application for the patent; its nature; and, if a case of interference, the residence of the party interested; the Commissioner's refusal; the prayer of an appeal, and notice thereof to the Commissioner; the filing of the reasons of appeal in the Patent Office; and the payment into the Office of the sum required by the law. To every petition must be annexed a certificate of the proper officer that the requisitions of the law have been complied with, or an affidavit of the truth of the facts stated in the petition. No notice to the Commissioner will be issued until such certificate or affidavit be made or produced.

3. The appeal will be tried upon the evidence which was in the case and produced before the Commissioner.

4. The applications must be in writing.—The cause will be heard upon written arguments only, unless otherwise specially directed; which arguments must state the points of fact and law relied on, and the authorities in support of the same.

5. Five days will be allowed after the filing of the Commissioner's Report to the apellant to file his argument; and the like period will be allowed for any answer and reply; at the expiration of the last of which periods the cause will be taken up and decided, and the papers returned, with the decision, to the office of the Commissioner.

6. Copies of the Commissioner's Report or grounds of decision, and of the arguments filed, can be had, if desired, from the Secretary to be appointed, upon the payment of the usual fees for such services.

JAMES S. MORSELL.

Assistant Judge of the Circuit Court of the District of Columbia.

[The above is the circular of the Assistant Judge Morsell, which has been issued in accordance with the provisions of the amendment to the Patent Laws, which was published in ~~our last number~~.

Blatchford's Circuit Court Reports.

This is a new work, of which volume 1 has just been issued by Derby & Miller, of Auburn, N. Y. It contains reports of cases argued and determined in the Circuit Court of the United States for the Second Circuit, by Samuel Blatchford, Esq., Reporter of the Court. It may be needless to state, but we cannot help doing so, that it is got up, in that superior style of printing and binding, and with that care, which distinguishes our books on legal subjects, above all others; we give the lawyers great credit for this.

The reports are a collection of the decisions, as well as some able arguments on both sides, of cases brought before Judge Nelson, of the U. S. Supreme Court, and whose judicial reputation stands very high. We are glad that this work has fallen into so worthy and able hands, as those of Mr. Blatchford; no one could have done it so well. It is a great treasure in our eyes, owing to the important patent cases which have been tried before Judge Nelson since his accession to the bench of the U. S. Supreme Court, in 1845. The great case relating to the Woodworth Patent, after its re-issue, between James C. Wilson vs. Louis Rousseau and Charles Easton, with the argument of counsel, occupies no less than 145 pages; it goes over the whole ground, and the Woodworth patent is fully discussed in all its important bearings. There are three cases respecting the Woodworth Patent, in which James G. Wilson was complainant, and four cases in which John Gibson was plaintiff; the Woodworth Patent, therefore, stands pre-eminent among all others in this able work. We may refer to those particular cases at some other period.—There are no less than twenty-nine patent cases reported altogether, embracing trials of some of the most prominent existing patents, such as Blanchard's patent for turning gun-stocks, &c., Wolf & Truscott's famous cast-iron car wheel, Goodyear's india rubber, Wilder's iron safe, Parkhurst's cotton gin, Morse's Telegraph, Burden's iron spikes, and Parker's water-wheel. This latter case is a singular one, and presents a subject for serious reflection to all patentees. The case was decided against Parker by a jury, yet it appears to us that the evidence was exceedingly meagre for such a decision. One man gave evidence that he had assisted in making one water-wheel, embracing the same principle, in 1819; it was taken away twelve miles, and he never saw it afterwards. Upon this testimony the jury found a verdict for the defendant, against the claims of the Parker Wheel. Of some of the decisions made by Judge Nelson, respecting certain machines being infringements, we hold an opinion as unfavorable as that which we entertain about the decision in the wheel case, but more about this at some other fitting opportunity. In the mean time, let us say, that no man interested in patents can be posted up in legal matters respecting them, unless he becomes a possesser of this book. It is for sale in this city by J. J. Diossy and J. S. Voorhies, and by the publishers at Auburn.

Form of the Earth—A New Theory.

From some experiments and observations, which have been recently made, I am inclined to the opinion, that the world we inhabit is not globular, nor round, as has been generally supposed, but that from North to South, it is much more depressed from the Equator to the Poles than it is from East to West, and much more depressed South than North of the Equator, with a proportionate elongation in that direction. In proof of this new theory, for such surely it will be accounted, I submit for the consideration of the curious and inquisitive:—

1st. The fact, as far as it is known, that there are three parts of the world, presenting a surface of water to one part of land; or philosophically, or chemically speaking, three-fourths of liquid matter to one-fourth of solid. That this water is literally diffused throughout the land, but is gathered in the largest body to the South, while there it has less disposition in its particles to condense, than towards the Northern Pole. If the world was round or globular, pressing the two motions of diurnal and annual, which is attributed to it, the one upon its own axis, and the other around the sun, the natural course of the two elements of earth and water, to advance and recede at the approach of the other, would necessarily be, to expose more of the Earth's surface, now covered with water, in one place, if the water was swallowed up or receded, or to equalize the surface of the water around the land as a common centre, provided the land passed in a continuous body from one hemisphere to the other, being of equal solidity and consistence.

2d. The magnetic needle, the mariner's only safe and sure guide across the pathless deep, is ever found pointing to the north, and although susceptible of slight variations from time to time, is nevertheless always sufficiently accurate to answer faithfully its office.—Why this certainty if the world be round? or if there be an equal distance from the Equator North as South? or the needle, with its positive pole known to vary, under extraordinary circumstances, so as to transfer its power to the negative or Southern point, and thus the one become substituted for the other?

3d. If the Earth be globular or round, why does the magnetic needle lay horizontally from North to South, and never take a position from East to West, no, not even when extraordinary accidents have befallen it, sufficiently great to transfer its power from the North to the Southern, or from the positive to the negative pole.

4th. If the Earth be round or globular, why the known difference between the time of arrival of two vessels, sailing each at the same time, the one east and the other west, making the same reckoning and the same observations, yet one in advance of the other.

5th. If our former lights upon these subjects were correct, why can we not account for all the natural phenomena which now bewilder our most profound philosophers.

Properly to account for these phenomena, we must first get the exterior of the Earth next its constituent principles, which we shall, find to be gravitation and electricity as its opposing force, next the correct motions of the earth, and with these principles well illustrated, we shall no longer be at loss to account for every apparent mystery in nature. This can be done, and demonstrated beyond doubt.—[Baltimore Clipper.

[The foregoing has travelled over a considerable space of newspaper circulation, as we see by our exchanges. It is really wonderful to see how long the divine light of knowledge takes to enter into some places. Here we have what is called "a new theory" of the shape of the earth advanced: it is certainly not quite so simple nor so sublime as that of old Deacon Homespun, who believed it to be "flat as a pancake," but on that account it may, to some, look all the more learned, as some people judge of things by their very nonsensical, unreasonable oddity. This person believes the earth is shaped in plan like the sections of two cones placed base to base, the south one being much longer than the north one. He does not say how thick he thinks the earth is, but he has it made with a ridge at the equator, something like the Ridge Road, in Western New York: and he has also another ridge away at the East, where the sun rises, and thus the earth is made of two great hollows and two great ridges; a queer ridgy holiowy theory truly. In proof of this theory, he submits for the consideration of the curious and inquisitive some considerations, and droll ones they are. He informs the world that the surface of the earth is only one-fourth of that covered with water, and that the greatest amount of the water is found at the South, where its particles have less disposition to condense than at the North. Every school boy knows that three-fourths of the surface of the globe is covered with water, and he also knows that its particles have just as much disposition to condense at the South as at the North; in fact, the North Pole has been approached, but far otherwise has it been with the voyagers to the antartic icy circle. He talks a great deal of nonsense about the two motions of the earth, and reasons as if the water and dry land moved with different velocities. He is very ignorant of the action of the magnet, and explodes his own argument with his own petard. He says the magnet always points North, ~~except under extraordinary~~ circumstances (what they are he does not say) when the North Pole becomes the South, and this is an argument he uses against the world being round; he thus accounts for the magnet pointing always to the North, by his elongated earth, the pole of it being nearer the equator. Very well, if this be true, then every ship sailing south of the aquator would have the poles of its compass changed, and thus become a globe form vane. How ridiculous; why did he not attempt to account for the action of the magnet first; why does it point north and south at all? If its action depended on the form of the earth, it would accommodate itself round all the points of the compass, as a ship sailed from east to west, north and south. When he talks about the difference of time between one vessel sailing east, and another sailing west, it is evident that his ignorance on the one hand, and his way of bringing the two vessels together again (if the earth is not round) on the other, deserves the most serious position in the comic almanac; two vessels, one sailing east and the other sailing west, would never meet if the world were not globular. He thinks that because men believe the world to be round, is the reason why philosophers cannot account for all natural phenomena; bright genius. He surely has become bewildered in endeavoring to account for phenomena which is quite plain and well known to all men of science, and for which they have accounted. What a hotch-potch some men make with their crude information about electricity, gravitation, constituent principles, static pressure, centrifugal force and so on.

Scientific Balloon Ascent.

Some of the members of the British Association for the Advancement of Science, recently made an ascent in a balloon along with Mr. Green, for scientific purposes. They took up various instruments with them, and went up 19,200 feet. They had exhausted tubes and took down air in them from that height, in order to analyze it. No cloud was seen above them, all was clear and cold, 25 deg. below the freezing point.

TO CORRESPONDENTS.

D. L. W., of Mass.—We have never examined your locality; but we do not believe it is a place for artesian wells. We do not know of a man of the qualities you desire. Cannot you collect surface water into reservoirs? A few acres will do wonders, if you collect it carefully. No artesian wells are bored except in submerged basins. There are artesian wells in Arkansas and Alabama. Marengo county, Ala., is a favorite place for them.

W. W., of Phila.—We are not acquainted with any person who sells the starch gum. We do not know of a single pound being manufactured here; if there is any made, it must be but a short time since it was commeuced. It is our opinion that the French have a secret mode of making the gum paste, from malt; there are some particulars about it, with which we are unacquainted at present. All that we have seen has been imported. Messrs. Partridge, Druggists, Cliff street, this city, will inform you about the prices, &c. We will give you more information about it again.

J. M. P., of Tenn.—Your plan of the saw-mill carriages appears to be a very excellent improvement; but we do not see the advantage of the improvement on the water wheel over the suspension wheel.—Would you be pleased to point out the advantage.

J. R. K., of Geo.—Danforth's Patent was issued April 21, 1842. The claim has no reference to the band whatever; yet, in the description we find that the spindles or bobbins, are turned by bands running on a horizontal drum. This description cannot affect any good and new improvement which you may make.

A. H., of Ill —The magnets would not reduce the friction of a journal so as to make it of the least value, and it would only waste time and money to try any more experiments.

H. W. G., of N. C.—We do not as yet know the exact proportions of the artificial stone fronts; it is kept secret by the craft. We have for a long time endeavored to get full and complete information on the subject; and are still trying to do so. We know that the fronts are durable, perfectly so; and we know the quality, but not the quantity of materials. Whenever we obtain complete information about it, you shall have it with great pleasure.

J. M. K., of N. Y.—We have never seen, nor do we know of the fluted concave being combined with the fluted roller; but two fluted rollers have been employed for the same purpose; it would not, perhaps, be prudent to notice it before application was made.

W. McG., of N. Y.—Boilers have been made with a large and a small safety valve. Your plan is good but not patentable.

T. M., of Pa —We do not discover anything new in the sketch of your alleged improvement in spindles for carriage axles. A model sent to this office in 1849, by an inventor residing in this State, is believed to possess all the novelty embraced in yours.

T. J. B., of Tenn.—Humphrey's Journal is now published at 189 Broadway. We have received several numbers of it.

D. D., of Ill.—You could not patent a car seat upon the plan sketched in your letter of the 4th inst. Exercising chairs have long been in use, embracing the same principle; besides, we have had the same plan frequently offered for our consideration.

W. S. J., of R. I.—The brake appears to be new. Its effectiveness can be ascertained only by experiment. We do not, however, see where you can gain anything.

M, M., of Vt —Elastic sticking plasters for closing up wounds, have long been known and used. It is not new to make a mill-saw with teeth on both edges. Wm. Kumbel, 33 Ferry-street, this city, is an extensive manufacturer of belting.

I. W. M., of Vt.—It is quite probable that your lath cutting machine is new. We should be furnished with a sketch and description of it, to enable us to form judgment. You can send a model, if you prefer to do so.

J. J., of Ct.—You are aware that ventilating buckets are in common use for breast wheels. Yours is different from the common plan; as the communication in the usual way is between the bottom and top of the bucket and the inside of the lining. You make one bucket communicate with another.

G. B. D., of N. S.—The only way of proving superiority of one kind of steam boiler over another is by experiment; the one that uses least fuel, all other things being equal, is the best. There have been rotating boilers—and one is illustrated in our Fifth Volume: there have been, also, steam boilers kept at a high heat, with small quantities of water injected at once, but all have failed to compete, in the long run, with tubular boilers, which are our favorites.

J. C., of O.—We shall be pleased to hear of your experiments. They will interest some of our readers.

J. H., of ——— —We do not know the price of such a work as you want. Messrs. Appleton & Co., 200 Broadway, deal in Scientific publications, and might supply you.

W. L., of N. Y.—We remember to have had the same plan for sidings presented before. We have forgotten the inventor's name, a patent, however, has never been granted, neither do we think one can be obtained.

J. B , of N. Y.—Inventions can be patented in this country at any period subsequent to the grant of letters patent in England. The patent, however must take date from its issue in England. The application must be made in the name of the inventor in all cases.

H. L. F. G., of Mich.—We could publish an engraving in one or two numbers after the receipt of the model.

R. H. F., of Ill.—We do conceive that either of your plans are patentable. Placing balls inside of a drum is an old device to accomplish the object you propose, but for other purposes. We never heard of any patent for it being solicited.

C. G W., of N. O.—We would like to receive a specimen of Toncalar Gum. It must be quite hard to answer the purpose.

W. R. H., of N. C.—You will see something for you about hydraulic rams in another page.

J. P. N., of N. Y.—We do not remember to have seen a safety boot constructed like yours.

D. T., of Galt.—Yours of the 14th inst., came safe to hand. We thank you for the fine list of subscribers.

C. C., of N. J.—We can scarcely reconcile our judgment to the belief that your furnace is patentable. We have not seen Dr. Nott's since, but if our memory serves us we think he has substantially anticipated your invention. The specification we read in manuscript some four years since.

S. W., of N. Y.—We have never seen an instrument like yours, nor do we know of the like ever having been used or described anywhere. We presume that it is new and patentable.

J. J. W., of Ill.—There is no work published that can give you the information about dying, warping, and weaving, that you want. We are positive about this.

T. Y., of Iowa.—Your alleged improvement in rotary engines is substantially the same as the one patented by G. M. Alsop, in 1835. Since this date we have seen several modifications of the same principle.

G. W., of Pa.—We thank you for the highly expressed compliments to the Sci. Am., contained in yours of the 11th inst. We are greatly indebted to many of our subscribers for similar marks of approbation.

J. C. S., of Pa.—We have no doubt of your securing a patent for the useful application of the curve, but you must set it out perfectly clear in your specification. You certainly have a right to it.

C. W. W., of O.—Yours has just been received, and will appear next week.

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

S. & R., of N. Y., $30; S. & S., of N. Y., $25; T. B. S., of N. J., $10; C. N. T., of Mass., $35; J. W. M., of N. H., $8; R. K., of N. Y., $50; H. W., of Vt., $30; E. S & Co., of Conn., $350; S. T., of Mass., $27; M. C., of Ga., $25; J. B., of Ill, $55; T. H. D., of N. H., $10; P. P R. H., of N. Y, $50; E. O., of N. Y., $25; S. R. & H., of N. Y., $44.

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

W. R., of N.Y.; J. W.M , of N. H.; S & S., of N.Y.; H. W., of Vt.; T. B. S., of N. J.; D. & C. W. G., of N. Y.; E. O., of N. Y.; P. P. R. H., of N. Y.; M C., of Ga.

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In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

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Of Volume 6, all; price in sheets, $2; bound, $2,75

Of Vol. 7, all; do do do

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying.

Patent Laws, and Guide to Inventors.

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SCIENTIFIC MUSEUM.

Poisonous Chloroform.

In our last number we published some experiments made by Dr. Jackson, of Boston, upon animals, with chloroform and the oil of whiskey. Those experiments distinctly proved that the oil of whiskey is dangerously poisonous. This is a most reliable discovery, and at once accounts for a number of deaths which have taken place by people inhaling chloroform. For this discovery, a most valuable one, Dr. Jackson deserves the thanks of the whole world, and something more than the mere expression of public gratitude. In an article in the "Boston Medical Journal," he states that for a long time he had been suspicious that there was a certain poison derived from the common whiskey, of which inferior chloroform is made. He therefore, during the past month, succeeded in procuring some very fine fusel oil, and he undertook researches which have resulted in the conviction that it is this amyle compound which produces the poisonous matter of certain kinds of chloroform. He says: "When this oil is mixed with hyperchlorite of lime, (bleaching powder), and water, in the same way as we prepare alcohol for the production and distillation of chloroform, I found that the mixture in the retort, after agitation and standing some time, became warm, indicating that a re-action was taking place between the fusel oil and the hyperchlorite of lime.

After some hours the retort was placed in a water-bath and distillation was effected, the volatilized liquid being condensed by means of one of Liebig's condensers. A clear colorless liquid came over, which was at once recognized as having the peculiar odor of bad chloroform. It is perhaps a ter-chloride of amyle, but has not yet been submitted to analysis.

It is so powerful that merely smelling of it makes one dizzy, and working over it made me so sick that I was obliged to go out of doors for fresh air several times during my operations on it. In order to make sure that the fusel oil was all decomposed, I again mixed the distillation above mentioned with a new lot of bleaching powder and water; and after three hours, with frequent agitation, it was again distilled, and gave what I regard as the pure unmixed poison."

This substance he tested on the rat and turtle, as noticed last week, and the results lead him to the following conclusions:—

"1st, That a poisonous matter exists in the cheap chloroform of commerce, from the fusel oil which exists in whiskey, made from corn, rye, potatoes, &c., and which is now used to make cheap chloroform.

2nd, that all chloroform intended for inhalation as an anæsthetic agent should be prepared from pure rectified alcohol, to be diluted with water when used for distillation from hyperchlorite of lime.

3rd, when chloroform, and the alcoholic solution of it called chloric ether, is made from pure alcohol diluted with water, no fatal accidents take place from its judicious administration.

4th, that no druggist should sell for anæsthetic uses any chloroform which is not known to have been properly prepared as above suggested.

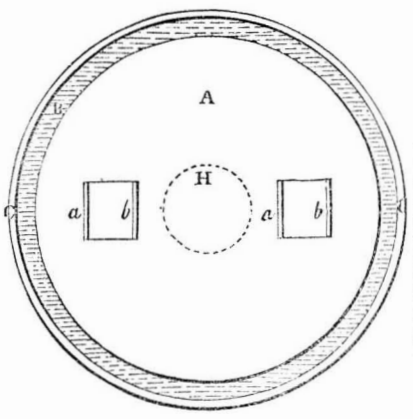
5th, that the mixture of chloroform and alcohol commercially known under the name of strong chloric ether, must be made with the same precautions as chloroform."

Australia.

The English papers continue to chronicle a tremendous rush of emigration from England to Australia. There must be much suffering among the pioneers, as was the case in the early emigration to California, but if the supplies are as large as represented, and the agricultural resources of the country great, Australia will prove an incalculabe blessing to the English people. Her colonial acquisitions have hitherto increased the glory of the English government without adding aught to the happiness of her subjects. Australia promises to bring direct relief to her crowded population, by giving occupation and bread to tens and hundreds of thousands of emigrants, and also by affording a better chance for employment and the means of subsistence to those who remain.

Patent Mode of Preserving Butter.

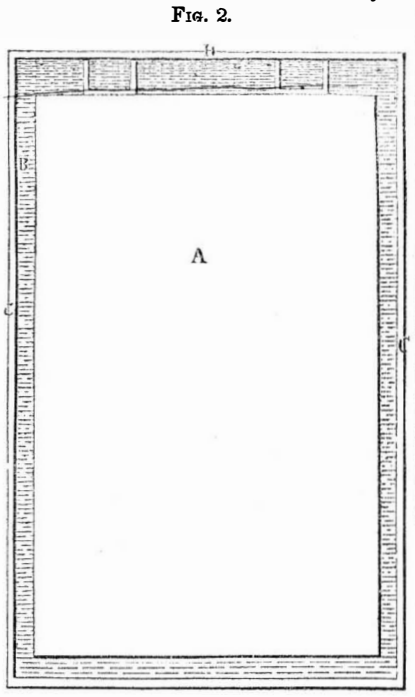
FIG. 1



The annexed engravings are views of a new mode of preserving butter for which a patent was granted on the third day of last month (Aug., 1853) to Louis de Corn, of the city of Cincinnati, Ohio.

Fig. 1 is a plan, view of the box for preserving butter, and fig. 2 is a vertical section. The same letters refer to like parts. A represents the butter in the box; B B is the preserving liquid surrounding the butter; C C is the box. Let us suppose the box to be open; the butter to be preserved is first moulded to be of a size a little less in diameter, than the box, and of a cylindrical form like unto it, and then placed in the said box; there is then a space all around between the butter and the box. This space is then filled with a solution of water, in which has been dissolved about a quarter of a drachm of the iodide of potassium to each half pint of clean soft water. When this liquid is poured in to fill the box, the butter rises or floats, owing to its being of a less specific gravity. The cover is then placed on the box. This cover has two small pieces of tin, *a b*, to prevent (as much as possible), the butter from being in contact with the tin, in order that the butteric acid may not

FIG. 2.



attack the tin, and be injured in quality; the cylindrical block of butter, A, only touches the tin at two small stops, *a b*, *a b*. The box is then filled up with the iodide of potassium solution through the small hole, H; this opening is then covered with a piece of tin, and carefully soldered. By doing this, the specification states, that the butter is preserved fresh and good for any length of time. It is also asserted, that fresh butter as well as salt, are equally well preserved, and kept as good as it was the first day it was put in, for an indefinite period. To know if this process of preserving butter is truly performed, it is sufficient to place the boxes containing the butter in some apartment having a temperature of summer heat, which is the most favorable to a combination of the butter with oxygen, which is the cause of it becoming *rancid*. If, after seven days of exposure to the artificial summer, the butter is found fresh and good in the boxes, the process will be considered complete and perfect. Any place behind a stove, or in a barrel surrounded with warm water at 85 or 90 degrees, will furnish the artificial summer to test the process. Iodine is the body which gives the antiseptic property to sea salt, and this property of preserving the butter as described, is claimed for the liquid that is employed by M. de Corn. The claim is for the aforesaid chemical compound or its equivalent, for the preservation of butter for any length of time, in the manner substantially as described.

This method of preserving butter is something which concerns all our farmers.

Collodion in the Treatment of Erysipelas.

In the "Eclectic Medical Journal," Cincinnati, we perceive that the use of Collodion in Erysipelas was ably and clearly set forth in an article by O. E. Newton, M. D., in the April number for 1851. It states that the first case treated by Collodion within the experience of the author, was reported in the "London Lancet" for April, 1850. Dr. Newton states that he has applied it in erysipelas with great advantage. The editor, as we understand it, cites quite a number of cases from the "New York Journal of Medicine," to show the success of Collodion in the treatment of many cases of Erysipelas.

The "Eclectic Medical Journal," of Cincinnati, is conducted by Prof. J. R. Buchanan, M. D., and R. S. Newton, M. D., of the Eclectic Medical Institute, of Cincinnati; it is a very able medical journal, and we like its tone and gentlemanly bearing. There are some of what are termed our "Old School Medical Periodicals," which, we regret to say, do not use such language when speaking of cotemporaries, as we would like to see them employ.

Hooping Cough.

In the "New Jersey Medical Reporter" it is stated that conium is good for hooping-cough, and that conia has beem successfully employed in France for the same disease; it is given to children in doses of one-fortieth to one-tenth of a grain, according to their ages, of from three months to four years of age. It is a medicine which must be used only by a regular and cautious physician. It is also stated that the application of a blister to the *nucha* (the hinder part of the nape of the neck, also called the *cervix*) has been very successful in curing hooping cough. Dr. R. L. Madison, of Petersburgh, Va., has recommended this mode of treatment, on the theory that the disease consists in specific irritation of the spinal chord from the origin of the eighth pair down to the origin of the phrenic nerve.

Bite of the Rattlesnake.

In the same medical journal there is an account, by Dr. S. W. Woodhouse, of the treatment of himself for the bite of rattlesnake. He was bit in the finger by a rattlesnake, at the Indian Pueblo of Zani, in New Mexico, the pain was intense, and he at once commenced to suck the wound, for he was about three-fourths of a mile from the town. As soon as possible, he applied aqua ammonia, and then tried the great western remedy,—getting drunk. He took one quart of brandy (fourth-proof), and one pint of whiskey; enough to kill any ordinary man; it produced intoxication, which lasted four hours. He suffered greatly for eight days, during which he took various medicines and at last recovered. It is a common opinion in the West, that if a person be bitten by a rattlesnake, and he can be made drunk with whiskey, he will recover.

Browning Gun Barrels.

Gun barrels of iron and steel are browned by the same means; the browning is a coating of oxide or rust; it is formed by rusting the barrels by a weak acid, or what is better, a mixture of the muriate of iron and the nitrate of copper. The barrel is rubbed over with the liquid, and laid past for a few days, then it is brushed with a wire brush, then coated again, and laid past for a few days longer, and then washed in warm water in which a little soda has been dissolved; it is then dried, brushed, and oiled, and again dried in a warm place. If the barrel could be boiled in oil, so much the better. Some use weak nitric acid to oxidize the barrel.

Pumpkin Seed Oil.

A very excellent oil may be prepared from pumpkin seeds. The seeds are first peeled and then pressed between iron plates or wooden blocks with a screw press. The oil thus obtained is said to burn well, last longer, and give a better light than any of the common oils, and emits very little smoke.

Fishes in the Rivers of France.

M. Coste, in his late Report to the Minister of the interior, proposes to stock all the rivers of France with the best of fish for the small outlay of $5,000. It is also proposed to stock the extensive salt lagoons on the coast of France upon the same principle with excellent shellfish.

LITERARY NOTICES.

THE NATIONAL PORTRAIT GALLERY.—Numbers 2 and 3 of this great American Work, contain portraits of Thomas Jefferson, John Hancock, Charles Carroll, Winfield Scott, Anthony Wayne, and Thos. Macdonough, with biographical sketches ably drawn up. This work is to be completed in forty numbers, of three plates each, and is eminently worthy the patronage of all delighting in a knowledge of the achievements of our Warriors and Statesmen. Price 25 cents each number. R. E. Peterson & Co., Philadelphia; Wm. Terry, 113 Nassau-street, New York

HAGAR: A Story of To-Day—By Alice Carey, is just issued by Redfield. The author of "Clovernook," and many other writings of the very highest order of intellect, has furnished in "Hagar," a highly finished and charming novel, which we doubt not will be very generally read and admired. The writings of Miss Carey have taken a strong hold upon the confidence and regard of the people, being free from every species of narrow-mindedness. Her genius is imbued with power to touch the finest cords of fancy, and where shall we look for her but in the very highest niche of literary fame. Redfield's style of publication does honor to the trade.

MEYERS' UNIVERSUM, Part 5—Price 25 cents.—It contains a spirited Engraving of the "Cathedral of Notro Dame, in Paris." "The School of Plato, at Bithynia," "View of the Hudson, near Newburgh," and "Calcutta" The accompanying articles are eloquent and pleasing; the publication is one of merit. H. J. Meyer, Publisher, 164 William-street, this city.