

Pacific Railroad.

We have received the report of the chief engineer, upon the preliminary surveys of the Pacific Railroad, Missouri-not Whitney's road. It is a most able document, but it is just what might be expected of James P. Kirkwood, C. E. This road is to be the commencement of the great road which is yet to be the inland highway between the Atlantic and Pacific oceans, and Missouri could not do a wiser thing than to leap right into the track at once and go on in its construction whenever the best route is fairly demonstrated. From position and natural resources, it appears to us that Missouri is destined to be the great centre State of the Union, and the sooner she opens a railroad communication from the Mississippi to her uttermost western borders to meet New Mexico and California, so much the better for her own sake. There can no loss accrue, however expensive the road may be at first, for it must go on increasing in value. The Erie Railroad is an evidence of this.

Railroads of Indiana.

We have received printed pamphlets containing the address of Ex-Governor David Wallace, at the celebration of the opening of the Peru and Indianapolis Railroad at Noblesville, Ind., on the 11th of last March. Indiana, more than any other Western State, is alive to the importance of railroads, and she is wise, as ex-Gov. Wallace says, in her projects. Railroads are the test of civilization now, as Macadamized roads were forty years ago. In Indiana, with her fine bituminous coal fields, we expect that coke, instead of wood, will soon be used in the locomotives. This will be the means of introducing more comfort to those who travel, as no sparks nor smoke will then annoy the traveller.

The Panama Railroad.

The steamship Empire City, arrived at this port on last Sunday morning from Chagres, and by it we learn that the first locomotive

The accompanying engravings represent im- | parts are supported. B B are the standards, provements in machinery for cutting screws, which have been invented by Mr. George W. Lull, of Genoa, N.Y., who has taken mea sures to secure a patent for the same.

Figure 1 is a side elevation; figure 2 is a transverse vertical section, taken in front of the chuck, and figure 3 is a perspective view of the wedge collar, by means of which the levers are made to close the dies. The same letters refer to like parts.

The improvement consists in certain devices attached to and in connection with the chuck, by which the dies may be closed or contracted upon the screw or rod upon which the screw is to be cut, during the time the chuck is revolving, by which a deeper cut can | K, by means of the lever, L, by which the be taken without stopping the machine. A is the frame or bench upon which the working | lever being held so as to keep either in gear, by

constituting the fixed headstock, which carries the mandril and chucks. C is the mandril; D is the chuck. These do not differ materially from like parts of other screw cutting machines. The mandril is bored throughout; the chuck has the dies fitted to it in the ordinary way; E is the driving pulley on the driving shaft, F, below. G is a toothed wheel on said shaft ; H is a small frame, consisting of two plates of metal fitting loosely on the shaft, F,-one on each side of the wheel, G, carrying two small toothed wheels. I J. the former gearing always into G, and the latter into I (but never into G). Either of these toothed wheels is capable of gearing into the wheel, said frame may be turned on the shaft, the



ends of these levers rest upon the back or outer ends of the dies, which project through the periphery of the chuck, and their back ends upon the inclined edges of the wedges, t. The springs, v, are secured within the chuck, and their ends fit in recesses in the dies, or are otherwise caused to bear on them so as to force them outwards and throw them back from their work; this keeps the back ends of the levers down upon the wedges. In order to prevent the wedge collar turning on the mandril, and to make it turn with it, the ends of the levers have small notches in them fitting on the edge of the wedges. The collar might, however, be prevented from turning by other means, which would allow it to slide, such as by fitting on a feather way on the mandril.

The necessary control over the dies is exercised in the following manner : by turning the wheel, Q, so as to cause it to run back on the screw, P, the flange, S, attached to the loose collar will draw back the wedge, collar, R, and the wedges, t, will force out the back ends of the levers, U, and force in the front ends, which bear on the dies, and force the dies towards each other. By turning the wheel forward, the wedges will be withdrawn from the levers, and the springs, v, will throw the dies out or back. The operation of screwing a bolt will be conducted as follows :- the bolt being screwed in the vice, the carriage, O, is run forward to bring the point into the dies, which are then made to bite it by the operator turning the wheel, Q, as above described ; this may be done either while the dies are stationary or in motion. The revolution of the dies in one direction will cause them, as they cut the screw so draw forward the bolt, which should the screw be larger than the travel of the carriage, O, may be released from the vice and the carriage moved back to take another hold, the screwing afterwards proceeding as before; the screw passing through the mandril may be cut any length. When the screw has been cut the proper length, should it require further cutting to reduce it to the required size, the direction of the revolution of the mandril should bereversed, and the wheel, Q, turned so as to force in the dies, and the screw run entirely back. This operation may be repeated any number of times without stopping the machine. By giving the dies more pressure as the point of the screw leaves them, any amount of taper may be given to it. More information may be obtained by letter addressed to Mr. G. W. Lull. as above.

as started on the Isthmus Railroad on th 24th ult. This great work under Col. Totten is proceeding rapidly towards completion.

India Rubber Armor.

In Paris a new kind of cuirass for the use of the army, is shortly to be tried. This cuirass is of vulcanized india rubber, about half an inch thick. This thickness, it is stated, is more than sufficient to resist the action of a ball projected from any kind of firearm. a spring catch, M. By this arrangement the ding carriage, O, which travels along the rods, All the experiments tried have proved entiremandril may be made to revolve in either di- n. P is a screwed tube, which encircles the rection, the pulley, E, and shaft, F, always mandril, and is secured to the back of the ly successful. The force of the ball is completely broken by the elasticity of the India revolving in the same direction. N is a vice, front standard, B, of the headstock, or other-(TD rubber, and it falls on the ground at the feet of in which the rod or bolt to be screwed is held wise supported and held secure from turning. the person against whom it was sent.

Defeat of the Amazons.

There has been a great battle in Africa between King Dahomey's army of female warriors and a neighboring tribe. The she warsecure from turning. It is mounted on a sli- Q is a wheel whose hub has a left-handed riors were defeated with great slaughter.

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Miscellaneous.

Special Correspondence of the Scientific American Daguerreotypes, Machinery, &c. London, June 18th 1851.

I imagined that the English were very far behind our countrymen in the art of Daguerreotyping, and so far as a fulness of tone-light and shade-is concerned, I believe they are, but I think they color better. A distinguished artist. Mr. Beard, of London, has created no little excitement by a new species of daguerreotype. No picture will please the English unless it is colored, and it is to this point the artist hus turned his attention. Formerly the pictures were colored by dusting powder on the plate, but this was a miserable method, as the powders generally decayed and the plate soon tarnished. The improvement consists in covering the silver plate with some chemical substance, quite transparent and with a shining enamel surface, which resists wetting, and can be colored like an oil painting. His pictures appear like true and beautiful miniatures painted on ivory. This is not the Hillotype which I have heard about in New York, and it may not be equal to it, but certainly it is further advanced-it is here in London among the nations of all the world.

Among the machinery in the American de partment, the inventions of Capt. J. Erricsson. of New York, are very prominent, especially what is termed a caloric or hot-air engine; another is his Alarm Barometer for ships. It is an improvement in the barometer by which it can be made to sound a gong when the mercury falls to a certain point, so that ample time may be given to shorten sail or prepare for a blow; and the captain of a ship may go to sleep without fear of being caught by a squall, from the carelessness of the officer on watch.

Having said so much in my letters about the Great Exhibition, it may relieve the readers of the Scientific American to change the tune for once, although it is a positive fact that all the articles, and worthy ones, too, exhibited here, could not be described by me in a number of years yet I will now digress for a space.

There has been a very interesting experiment with locomotives at the famous engineering village of Crewe, for the purpose of testing the relative powers of small engines used on the northern division of the London and North Western Railway, and the large engines used on the southern division of the same line. The trial took place on the incline between Crewe and Madely. The point to be decided on was, whether one of the large engines belonging to the southern division was better able to work a heavy goods train than two of the moderate-sized engines used on the northern division, the power of the two being about equal to the larger one. The engines were to run against time, load, and consump-

officers of the army, and it is recommended that some of the regiments be armed with them. It carries a ball four times further than a British musket. The time is not far distant when battles will be fought at more respectable distances than formerly. The huge British grenadier, with his flaming red coat, is of mighty little use when advancing to "charge bayonets," as he can be popped off at 600 yards distance by some 4 feet 6 inch fellow behind a molehill with a Zund Nadel. If the Zund Nadel had been known by Bony at Waterloo, he would not have cared a straw for Wellington's "up Guards and at 'em," not he. So much for his living 36 years behind the age. EXCELSIOR.

M. Orfila on Nicotine.

At the last sitting of the Academy of Medicine, says Galignani's (Paris) Messenger, M. Orfila's report on nicotine was read. This report, which confirms facts already known, contains many new observations of interest to chemists and medical jurisprudence, relative to the properties of the poison, and of its traces after death.

Accordingly to this document, nicotine was discovered in 1809, by Vauquelin; and is to be found in different kinds of nicotiana, in various proportions. Havana tobacco contains two per cent; that of the Nord, six; Virginia nearly seven, and that of Lot, eight. Smokers, by inhaling the fumes of tobacco, introduce into their system a certain quantity (though small) of poisonous matter. Pure nicotine has the appearance of an oily, transparent liquid, of a pale yellow color, which, after exposure, turns to brown. It is very hot to the taste, and its acrid smell slightly resembles that of tobacco; but when volatalized by heat throws out characteristic vapors. which are so oppressive that breathing becomes difficult in a room where a drop of the liquid has been spilt. As a poisonous substance nicotine possesses excessive power In experiments made about ten years ago, in ten minutes M. Orfila killed many dogs on the tongues of which he had applied five drops of this alkali; with twelve drops death ensued in two minutes. But this powerful poison cannot escape the investigation of men of art. Pure nicotine (according to the conclusions of Orfila and Stas) has certain characteristics by which it is detected as easily as a mineral poison. It can be discovered in the digestive channel, and its existence therein proved, though that channel contain but a few drops. And even when the poisonous substance has been absorbed-when it has passed into the other organs-it can still be discovered in those organs, and especially in the liver. M. Orfila has tried, on the liver of animals poisoned with twelve or fifteen drops of nicotine, two methods of chemical analysis, which he describes, and he has invariably succeeded in procuring certain quantities of the poisons sought for.

M. Stas, by making use of a third method on tion of coke. The trial was witnessed by a large number of scientific men. Two of the the body of Gustavus Fougnies, extracted nicotine from the tongue, the stomach, and liquid smaller engines of the northern division were contained therein; he also found some in the first tested separately, and then together. The first was started at a quarter to 12, and took liver and lungs. He moreover obtained it from the wood flooring of the dining room in her load up the bank in 49 minutes. The sewhich Gustave died, although that flooring cond was off a little after 1, and took her load up in the short space of 32 minutes. They had been washed with soap, oil, and warm water; and in his learned investigation the were afterwards hooked together and attached Belgian toxicologist had received no indicato the double load, which they took in capital style in 35 minutes. The large engine was tion from the Judge d'Instruction. Before he was informed that Bocarme had been making then hooked on to the same load, and struggled hard for an hour and fifteen minutes to bring experiments relative to tobacco and nicotine, had already found that the poison intro ed by the tw duced into the body of the victim was neither in 35 minutes. The superiority of the smaller engines was as readily acknowledged as it was sulphuric acid (as had been supposed) nor clearly demonstrated. Before the trial the acetic acid, but either conicine or nicotine. most sanguine expectations were entertained The progress which medical jurisconsults by many that the large engine would have have made recently, is so great, that poisonbeen victorious. This is something for our ing by morphene, strychnine, prussic acid, American engineers. There can be no doubt and other vegetable substances, hitherto regarbut the light engines are the most profitable in ded as inaccessible to our means of investigaevery sense of the term. tion, may now be detected and recognised in

will sometimes have recourse to very active poisons little known by the mass, and difficult of detection, but science is on the alert, and soon overcomes all difficulty; penetrating into the utmost depths of our organs, it brings out the proof of the crime, and furnishes one of the greatest pieces of evidence against the guilty."

For the Scientific American.

The Telegraph Circuit---How the Ground Forms Part of it.

There seems to be a doubt in the minds of many, in tracing the current through the circuit of our present one-wired telegraph; it seems to me to be a very plain case. In looking at the subject, let us take the most simple form, that is, a battery with a few yards of wire connecting the zinc and copper or other metals which may be used; we then have a circuit on which the current travels uninterruptedly. Now let the wire be separated and the ends brought in contact with the opposite sides of a long bar of iron, would not the current pass as readily and rapidly as before; again, if instead of the bar of iron we had a mass of iron as large as a house and the two wires attached near each other on the same side of the mass, or at opposite sides, would not the result be the same? Certainly it would; the current would go from one wire to the other through the conducting properties of the massive iron as easy as the small wire.

Then again, if we were to have a battery apon one side of a broad river or bay and the wire conducted across, but instead of coming back, to have it inserted into the end of a glass tube filled with water of one inch diameter, the tube crossing the river to the battery, and connected to the opposite pole, the water in the tube would form part of the circuit and the fluid pass as free as it would if it had the whole circuit of wire. The same would be the case if the tube was one thousand feet in diameter. Again, we will dispense with the tube, and connect the wire on the opposite side of the river into the water, also the other battery wire into the water on the battery side of the river, would not the current pass through the river the same as it did through the small or large tube? In order to comprehend more fully, let us suppose that Lake Superior was perfectly isolated from all surrounding objects, and a partition through the middle of a nonconductor, so that one half should be isolated from the other, and one end of the circuit wire to be in contact with one half the lake, and the other circuit end in contact with the other portion of the lake, who believes that a current could be sustained?

My own opinion, based on some practice and a good deal of study and reflection, is, that the earth, in its natural and moist state, is a good conductor of electric fluids, and that there is a certain amount of electricity constantly dispersed through it, of the same denthe same state, is obvious, from the fact that the earth is a good conductor, and the instant stantaneously.

I do not think that the current of electricity, in its grand circuit, passes on a narrow chain of particles, as it would were it conducted on an isolated wire, but that all the particles constituting the ground body of the circuit are invaded, for miles, out of a straight as well we took a plate of copper or iron one hundred | ring it about. It is made into cakes by mix-

Eccentric Movement of the Fixed Stars. At a meeting of the Berlin Academy of Sciences held on May 31 last, the venerable Alexander Von Humboldt made an interesting communication upon some observations of singular movements of fixed stars. It seems that at Treiste, January 17, 1851, between 7 and 8 o'clock P. M., before the rising of the moon, when the star Sirius was not far from the horizon, it was seen to perform a remarkable series of eccentric movements. It rose and sank, moved left and right, and sometimes seemed to move in a curved line. The observers were Mr. Keune, a student in the upper class of the gymnasium, and Mr. Thugutt, a saddler both certified to be reliable persons. The family of the latter also beheld the phenomena. Mr. Keune, with his head leaned immovably against the wall, saw Sirius rise in a right line above the roof of a neighboring house, and immediately again sink out of sight behind it, and then again appear. Its motions were so considerable that for some time the beholders thought it was a lantern suspended by a kite. It also varied in brilliancy, growing alternately brighter and fainter, and now and then being for moments quite invisible, though the sky was perfectly clear. As far as it is known, this phenomena has been remarked but twice before, once in 1799 from the Peak of Teneriffe by Von Humboldt himself, and again nearly fifty years later, by a well informed and very careful observer, Prince Adalbert of Prussia.

[Is it not possible that some very subtlematter was the cause of this phenomenon-that it was something like a mirage. If no negative evidence to its correctness can be adduced, it is testimony of the most positive character. that changes may take place with planets in their courses without materially disturbing the harmony of the universe, and in connection with this, it is strong testimony in favor of the miracles of Joshua commanding the sun to stand still, and the shadow going backwards on Hezekiah's sun dial.

Oatmeal.

In Scotland, and some parts of England and Ireland, oatmeal is extensively used as food, and is considered peculiarly nourishing. Oats, before grinding, must be kiln-dried, and for this purpose, when done on a large scale, a cast-iron floor, pierced with numerous small holes, and placed many feet above the fire, is used. On this the oats are placed, and they must be turned several times before the moisture they contain is evaporated. When they are cold, the next process is to shell them, which is done between stones, usually five feet in diameter, free inside the eye, perfectly straight on the face, and capable of making 700 revolutions in a minute. Freestone or sandstone is considered best for the purpose. The oats then pass along a dust sieve into the fans, which separate the seeds and small sity at all places. The reason for its being in grains from the good quality, which is removed either by elevators or by hand, into the hopper of the grind-stones. These stones there was more electric fluid in one place than should be five feet in diameter, peon inside in another, this same conducting property the eye, straight on the face, but never grooved would convey it to places of less amount in- like these for grinding wheat. They should make 300 revolutions a minute. A sieve is suspended under the eye, which completely separates the meal from the seeds. To preserve it, it should be tread very hard into a large chest, to exclude the air. It is cooked. by boiling, like Indian meal pudding, and is called porridge. In Scotland it is made into as in a right line, the same as it would be if brose by pouring boiling water into it and stir-

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the most incontestible manner. The attention of the British military authorities is now directed towards the arms of M. Orfila, in closing his notice, might well the army. Colt's revolvers are attracting atsay,-""After these results of judicial medical tention, and the Zund Nadel-the breech- investigation, the public need be under no aploading Prussian rifle-has been the subject of prehension. No doubt intelligent and clever 區 a number of experiments before some of the criminals, with a view to thwart the surgeons,

feet or more square, and make it a part of the ing the meal with cold water, rolling it out circuit, it would not be presumed that the fluid | into thin sheets, and toasting it before a bright would go straight through from one side to | fire. It is a food which would not be much the other without affecting the whole plate ; it | relished in America, where wheat flour is so cheap; it is good, however, for those who live appears to me that the instant the fluid leaves in high northern latitudes. the one wire and enters the plate, the whole

plate becomes positive compared to the wire on the opposite side, and with the velocity of lightning it leaves the plate, passes into and through the wire. I think the term absorbed gives us wholly a wrong idea of the facts, as they are the same in a ground circuit, only on a larger scale, that they are in the abovenamed plate forming a part of the ciruit. H. W. BENNETT. Rutland, Vt.

Ship Building on the Ohio. The Cincinnati Enquirer says that another bark, of 350 tons burden, is now building at one of the Covington ship-yards for the firm of Swasy & Co. She is built expressly for the African trade, and will be ready to sail by the 1st of December. This will make the sixth vessel built in the "western wilds" for the Salem Company.

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Fig 3.

Sawyer and Gwynne's Pressure Engine. This Pressure Engine is for producing motive power by static pressure, using centrifugal force to perpetuate a vacuum, which rep.esents the nominal power of the Engine.

The following questions, applicable to the power and resistance of this engine, were submitted to R. H. Bull, Professor of Mathema tics, and were returned with the answers :

New York, May 8, 1851. RICHARD H. BULL, Professor of Mathema tics : Dear Sir,-We take the liberty to submit for solution the following questions, and solicit your earliest reply. Very respectfully,

N. SAWYER, J. STUART GWYNNE. 1. We have a wheel weighing 531 pounds,

2-3 inches from the centre, will be required to cause it to revolve 25 times in 10 seconds. Answer-166 pounds.

2. What will be the centrifugal force when brought up to that velocity. Answer-2,716 pounds.

3. What power will be required to produce the motion as above, if applied to the axis of a screw of the following dimensions : hypothenuse of the angle 10 inches, perpendicular 4 inches, base 9 17-100 inches? Answer 452 pounds.

New York, May 10, 1851. GENTLEMEN,-I have examined your ques-

Fig. f.

diameter: what amount of power, applied 1 | nexed to the questions. Respectfully yours, RICHARD H. BULL.

To Messrs. Sawyer and Gwynne.

The two first questions require the amount of force necessary to revolve a wheel of given weight and dimensions, also the centrifugal force due to the velocity.

The third question requires the amount of force to be applied to the screw to produce the motion as above.

All these questions apply to the accompanying diagrams, where A A A A is a strong cylinder, capable of resisting any required

the weight collected in a circle of 16 inches | tions, and return them with the answers an-|ing the basin; B B, a cylinder inclosing the screw; E E a valve attached to the disc, and resting on the rim of the basin; F, is the crank. The unshaded part of the diagram is the air

chamber, the shaded part contains quicksilver; the quicksilver in the basin or wheel is supposed to be 26 inches in diameter and 2 inches thick, weighing 531 pounds.

The screw is 4 inches diameter, and of any required length, with a thread of 4 inch pitch, and the space between the threads 4 inches broad and 1 inch deep. The basin, disc, valve, screw, and cylinder, B B, are all connected and revolve together, and, according to pressure; C C a basin or wheel for evolving Professor Bull's demonstrations, 166 pounds centrifugal force; D, a disc and valve cover- (allowing the weight of the wheel) applied to

Fig.4



the crank, F, will produce 25 revolutions in 10 seconds, and the centrifugal force of the quicksilver in the basin will be 2,716 pounds; and it is clear that the equilibrium in the cylinder will be destroyed to the full amount of the centrifugal force, and a vacuum would be formed at the upper end of the screw, if no quicksilver was allowed to pass up and supply the place. Now, whatever may be the size of the vacuum, it cannot under the ordinary pressure of the atmosphere, be worth more than 14 pounds to the inch, and as the diameter of the cylinder, B B, is 4 inches, and the area 121, it is clear that the vacuum of 2,716 pounds can only be made available for 1873 pounds; and deducting for the end of the shaft and screw, we have but 10 inches against which the pressure can act.

Now, to make this pressure available to the ing basin; V V V V are valves for alterna-STEPHEN PEARL ANDREWS. 25, in an article entitled "A New Motive extent of the centrifugal force, we must pump | ting the pressure on the piston; DDDD are Bookbinding in the Olden Time. air or gas into the air chamber, C C, until the channels through which the quicksilver pass-Power," signed Stephen Pearl Andrews, in which Professor Loomis, of the New York pressure on the surface of the quicksilver is es from each end of the piston into the basin, It was not to gold and precious stones alone University, was called upon to demonstrate that the bindings of books in former days were 271 pounds to the inch; this, multipled by 10, and from thence into the reservoir, falling any fallacies that might exist in them. The shows 2,710 pounds pressure upon the first below the compressed air, and again acting indebted for their beauty. The richest deviagainst the piston to propel it forward; R R ces of the needlewoman were often wrought thread of the screw at the lower end. Prof. on the velvet or brocade, which became more Bull has further shown that 452 lbs. against is a circular reservoir for holding quicksilver; 1. The power which is applied to the crank the thread of the screw is equal to 166 pounds exclusively the fashionable material for bind-SS is a cylinder; P is a piston. of a wheel to turn a wheel, is all taken back ing. This seems to have been a favorite ocdirect force, leaving a clear surplus of 2,264 again in the rotary momentum of the wheel. Fig. 2 is a horizontal cross section, in which cupation of the high-born dames about Elizapounds more than is required to turn the minus the friction. the same parts are designated by the same beth's day; and, indeed, if we remember the wheel. letters. 2. The other force which exhibits itself unnew-born passion for books, which was at its Itmu llected that 166 pour Fig. 3 is the bottom plate of the reservoir and der the con of rotation, which height about that time, we shall not wonder pressure, or 452 pounds against the thread of air chamber showing the opening, through right angles to the axis of motion, and in raat their industry being displayed on the covthe screw, is the force required to bring 531 which the quicksilver passes to the piston from | dial lines from the centre to the circumference, ers as well as the insides. But, unhappily, pounds from a state of rest to 25 revolutions the reservoir, R R; also the opening in the which augments in the tremendous ratio of the fragility of the work was equal to its beauin ten seconds, and the weight of quicksilver centre through which it passes from the pisthe square of the velocity, and which is callty, and these needle-worked covers have, in received in at the centre and discharged at the ed centrifugal force, is plus the momentum ton into the basin. many instances, been replaced by more subvalve, (allowing no slip on the screw), will and plus the power which causes the rotation Fig. 4 is a top view of the disc, valve, and stantial binding. be just 531 pounds in 18 seconds. It is clear. rim of the basin; the inside circle is the size is no aid to and no charge upon rotation; and therefore, that any force against the lower end of the disc, the middle one the valve, and the is, therefore, although not hitherto observed Chinese at San Francisco. of the screw exceeding 425 pounds is a suroutside one the entire circumference of the baas such, an independent law of nature, as The British bark Mahommed Shah, fiftyplus over and above the force required to turn nine days from Hong Kong, arrived at San sin. much so as gravity itself. the wheel, and may be applied to other purposes. The piston of the engine being 4 superficial 3. Ergo: That the accepted axiom of me-Franisco, on the 10th of May, with two hun-It may be proper to add that the pressure of inches, the pressure 679 pounds to the inch, chanics, that "by no mechanical arrangement dred and twenty-eight Chinese; and on the 12th, the Swedish bark Antelope, sixty-one the quicksilver against the lower end of the and the velocity 1121 feet per minute, the can more power be evolved than is applied to screw will cause it to rotate upon the principle effective force will be 6,482 horse powers. produce the movement," is overturned by the days from Hong Kong, brought one hundred of the screw reversed. This engine is not only retarded by friction. simple phenomena of rotation, and consequent- | and seventy of the "pig tails."

To show more clearly the adaptation of this for which an allowance of 30 per cent. has principle to all engines where force is applied to one side of a piston and a vacuum formed on the other, we introduce one form of reciprocating engine. The measure of power here adopted is exactly the same as in No. 1; the basin and disc are the same, holding the same amount of quicksilver, and making the same number of revolutions in a minute; the amount received in at the centre and discharged at the valve in 10 seconds is the same, so that the retarding cause apart from friction, is exactly the same as in the rotary screw engine No. 1. Fig. 1 is a longitudinal horizontal section; A A A A is a strong cylinder, capable of resisting any required pressure; B B is a revolving basin, with disc and valve attached; C C is an air chamber above and below the revolv-

BADEAU.NY

been already made, but there is a further tax of power to overcome the inertia of the quicksilver, which is constantly received in at the centre and discharged at the valve of the revolving basin. A force equal to 166 pounds applied 13 inches from the centre will be required for this purpose, equal to elevating 166 pounds 135 feet high per minute, and as a horse power is estimated to raise 150 pounds 220 feet high per minute, 166 pounds raised 135 feet high requires 2 of a horse power, which being deducted from 6,482, gives 5,732, or nearly 5% horse power as the effective force of the engine.

The following propositions embrace the principles involved in Sawyer & Gwynne's "Sta tic Pressure Engine;" these propositions offered originally in the Daily Tribune of June

EU. ly, such surplus power existing, it remains

merely the work of genius, with no insuperable obstacles in the nature of the case, to find the method of applying this surplus force to mechanical purposes.

4. That stationary pressure is adequate to the production of motion in a fluid, and consequenly to the generation of power, as in the case of a reservoir exhausted with a given rapidity by a syphon, and re-supplied with the same ratio from another source.

5. That the combination of these two principles, as proposed by the inventor of the machine mentioned above, as explained by him at 300 Broadway, and as exhibited in the diagram is adequate to the production of a motive power only limited by the strength of the materials to endure pressure, and capable of every variety of mechanical application.

New Inventions.

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New Bolt Heading and Screw Cutting Machine. Mr. John Van Brocklin, of Middleport, Niagara Co., N. Y., has invented and applied for a patent for improvements in machinery for heading bolts, cutting the screws, &c. He employs heading boxes or peculiar shaped dies operated by a rack and pinion, instead of the hand levers which are in common use. The ends of the dies are made to act as guides to cause the holding and heading boxes to assume their exact positions before the descent of the heading tool, which is a piston header or swage. The action is such, that in heading one common evil is remedied, viz., the forcing of the metal apart by the force of the heading tool. In connection with the heading of the bolts, there is a gate on the machine for cutting the rods the proper length; also an arrangement similar to a lathe, to which may be attached a chuck for screw cutting.

Van Brocklin's Screw Plate.

In connection with the above, Mr. Van Brocklin has invented a new and improved plate for cutting screws, for which he has applied for a separate patent. The improvement consists in a cheap and expeditious mode of constructing the plate, by which the dies are made to work nicely and evenly in their grooves or recesses within the plate. He is enabled, by the improvement, to use those made of thin steel bars with cutting edges presenting a comparatively small bearing on the rods. Screws can be cut upon rods of various sizes, from the extreme large to the extreme small. The dies are guaged by set screws 'passing through the edge of the plate.

Machine for Boring Conical Holes in Hubs

Mr. Daniel Belden, of Berlin, Connecticut, has taken measures to secure a patent for an improved machine for boring tapering or conical holes in the hubs of wheels, &c. The hub is made to revolve between two plates towards a stationary horizontal rod to which is attached a cutter and cutter gauge. The hub and its plates are kept revolving in proper position by a collar fitting on the back plate into a recess in a disc attached to a socket, in which is a slide operated and adjusted by set screws for the pupose of throwing the cuter rod to cut conically through the mandril hole of the hub. This cutter rod has the cutter so fixed that it feeds when the hub is turned, the hub gradually moving along on the cutter rod till the tapering hole is cut through the hub. The said hole can be cut more or less conical according to the oblique direction given by the slide spoken, of to the cutter rod.

New Rat Trap.

A friend of ours, writing from Cincinnati says he has invented a new rat trap, which he verily believes is the ne plus ultra, for ta king, in a most coaxing way, the most grevious and cunning raseals of the rat race. He has a small box about 20 inches long, open a both ends for Mr. Rat to take a gallopade through, he being a gentleman who likes to see both ends of the road clear. No sooner however, does he reach the middle, allured perhaps by a sweet savory morsel, than down goes his apple cart with the lightest tread of his foot, and all unexpectedly he finds himself in safe keeping.

A New Kind of Hemp.

Attempts are now making to introduce into France the culture of a gigantic kind of

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act in such a manner as will produce a superior counter current that will resist the passing of the dust into the windows of the cars. The plan has been successfully tried, and we know of no invention so much needed at the present moment.

Incrustation in Boilers.

We learn from our worthy cotemporary, the London Patent Journal, that a Mr. Babington, | do not like the plan however, it would be M. D., London has taken out an English pa- | cheaper to get a copper boiler at once.

sage of each car through the atmosphere, to lers, by employing zinc plates in them. He solders plates of zinc on their edges, to the plates of the boiler under water mark. 1-15 of the internal surface under water is to be covered with the places of zinc. The zinc is more oxidizable than the iron, so the latter is protected from the incrustations, while the former oxydizes. Galvanic electricity is generated and good results have been obtained. We

exterior, and a female screw in its interior, at

the mouth. into which a hose or pipe may be

screwed; the smaller end of the box, A, has

lips, a a, projecting from it, each lip forming,

as it were, part of a flange, and a stop pin, d_{i}

inserted near the end of one of them, running

lengthwise with the box, A. B is a second

box, also of different diameter, having an an-

nular space, c c, at its mouth, and lugs, b b

for turning it on its exterior, by a screw cut

e e, similar to the lips, a a, of the box, A, but

bring the current of air, displaced by the pas- | tent for the prevention of incrustations in boi- | is prevented by this improved construction, as the threads or screws are kept free from exposure to dirt or injury, and the connection quickly formed, the several screws, whether the coupling be joined or separated, being kept always united and hence protected, while the screws, being constantly in contact, the time consumed by the ordinary methods of attachment in establishing the coupling, will be considerably economized.

> The claim of the patent will be found on page 294.

Application for an Extension of Patent.

Washington, June 25, 1851.—On the petition of Nathaniel Adams, of Cornwall, New York, praying for the extension of a patent granted to him for an improvement in a machine for moulding and pressing brick, for seven years from the expiration of said patent, which takes place on the 8th day of September. 1851.

It is ordered that said petition be heard at the patent office on Tuesday, the 2d day of September, 1851, at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposed to the extension are required to file in the patent office their objections, specifically set forth in writing at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

R. C. WEIGHTMAN, Acting Commissioner of Patents.

Value given to Cotton in its Transformations.

The enormous value given to cotton in its various transformations, is shown in the article of lace, of which there is at the London exhibition, doubtless, a richer display than the world ever saw together before. India, France, Belgium, England are vieing for su. premacy in this manufacture. A manufacturer furnished samples of one pound of cotton spun into 900 hanks, of 840 yards each, making a distance in all of 430 miles, should the single thread be extended to its utmest. Another firm exhibited 4,200 hanks, of the same number of yards each, from a single pound of cotton. The first then exhibited one pound of cotton spun into a thread 2,000 miles long, which shows the perfection to which cotton machinery has arrived. Brussels lace, all made from cotton is exhibited, worth £200 sterling (\$1,000) per yard. A lace shawl, made in France for the Duchess of Sutherland. is exhibited, the cost of which is £1,000 ster ling. A bridal dress is shown, for which the owner wants £5,000. The girl who wrought at it the first three years became blind from the heavy task it put upon her eyes. Just think of simple handiwork enhancing the value of a shilling's worth of cotton to \$25,000 !

Receipt for Making M. de Baeuvillier's Wash-Compound.

Take 1 gallon of lye, 20 lbs. common hard soap (cut fine), 1 quart spirits of turpentine, 1 pint spirits of ammonia (strongest); dissolve the soap in the lye, over a slow fire, but not allow it to boil, and stir frequently, after which set it aside to cool adding the ammonia and turpentine. This makes hard soap, and should be kept well wrapped in paper to keep the ammonia from evaporating. The lye is made by dissolving 11 lbs. of potash in 1 gallon of soft water.

The above receipt I have used, and find it an excellent soap for household use, and if you choose you may publish it. I purchased it as a patented affair, but have made some alteration in it, I think for the better. I was swindled out of my money so far as the patent was concerned. S. R. D. Schuylkill Haven, Pa., July, 1851.



the new coupling lately invented and patented by J. W. Osgood, of Columbus, Ohio. Figure 1 is a side elevation; figure 2 is a longitudinal section; figure 3 is an end detached view of the part marked A, seen from the inside, and figure 4 is a transverse section of the coupling, taken in the direction of the line oo, figure 2, and viewed as indicated by the arrow. The same letters of reference denote similar parts throughout the several figures.

a box, into which one hose or pipe may screw or be fitted, formed with projecting lips, which enter between, and lap inside corresponding lips projecting at one end from the interior of a connecting nut, which has a female screw at its other end, into which screws a second bex containing an interior box that may smoothly turn in it, being of an enlarged diameter at its outer end, which serves as a collar, into which may screw or be fitted a second hose or pipe, and the other end of the interior box having a screw cut upon it, to which screws a loose ring or collar that serves to keep the interior box from drawing out.

A is one box forming the coupling ; it con- projecting inward, and of a length correspond sists, in its length, of two diameters, the part ing to (or rather less than) the spaces or disnearest the outer end being made larger, with tances between the lips, a a, so as to enter



between them; the bore of the nut, E, being | turning the box, A, or nut, E, until resisted by of the same length in diameter as a chord the stop, d, so that the lips, a a, will lap withmeasuring the distance between the outer cir- in or against the lips, e e, and so lock the cumference of the ling, e.e. being corresponding to the external diameter of the smaller end leakage or escape between the spaces left by of the box, A. F is a washer or ring of india the several lips, and keeping the coupling rubber or other elastic material, situated with- tight, which may be screwed or tightened up in the nut, E, and inserted between the box, by turning the outer box, B, which will revolve on the interior box, C, by drawing up A, interior box, C, and ring, D, screwed upon the box, C, and serves to keep the coupling the connecting nut, E, and will firmly unite the tight or free from leakage when screwed up coupling without twisting or turning the hos and locked. or pipe, so that the coupling may be formed The operation of this coupling is as follows with little labor or loss of time, which is very -Separate hose or pipe being screwed into or advantageous where connections are required otherwise attached to the boxes, A and C, the to be made and broken frequently and quickly, two hese or pipe may be united by inserting as for instance, in coupling fire engine hose the lips, a a, of the box to which one hose or city, for the better ventilation of railroad cars, where, with the ordinary form of coupling, the screws are liable to be damaged or clogged and to prevent dust and smoke getting into pipe is connected between the lips, e e, of the the windows. The object of Mr. Hekroth is to nut, E, and when inserted to the proper depth, with dirt, thereby causing great delay, which that ever has been made this way.

coupling, the washer or ring, F. preventin

The accompanying engravings represent lugs or projections, b b, for turning by, on its

upon its inner or smaller end. C is an inte-The nature of this invention, is the use of rior, also of two diameters, its mouth or larger end being of some diameter as the annular space, c c, in the outer box, B, into which it fits, and a female screw within it for attachment of a hose or pipe, and its inner or smaller end having a screw eut upon its extremity, and being of the same outside diameter as the bore of the box, B. D is a loose ring on collar screwing on to the smaller end of the box, C, and serving to keep it from drawing out. E is a connecting nut, one end of which screws on to the smaller end of the box, B, and the other end formed with lips or part flanges.

hemp, indigenous in China, where it is raised in large quantities, and is known under the name of Lo-Ma. Hitherto the French grow ers have not succeeded in bringing it to seed the plant requiring a warm climate. The yield is twice as great as that of the ordinary hemp. It stands frost well.

Railroad Car Ventilation --- Keeping the Dust Out. Last week we had the pleasure of examination ing the model of a new invention of Mr. Hekroth, formerly of Maryland, but now of this

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Baltic Steamship. This noble steamship arrived at this port from Liverpool on the afternoon of last Saturday, 5th July, at 54 P. M., she left Liverpool on the 25th June at 61 P. M., thus making the passage in less than ten days, the second best

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NEW YORK, JULY 12, 1851.

Our Country.

Last Friday was the seventy-fifth anniversary of our nation's birth-day. Only three-quarters of a century have passed away since that immortal instrument, "The Declaration of Independence" was signed by the revolutionary fathers and given to the world, and what changes have taken place since then. The colonies then were only thirteen in number, with a small although not a feeble population. Then they were engaged in a struggle for life or death with Great Britain, the most powerful nation in Europe. The contest was severe, but the Ruler of Battles crowned the efforts of the Americans with success. "The handful of good grain which was then shaken upon the mountains," has brought forth a most beautiful harvest. The States have more than doubled in numbers, and the inhabitants have had an eight-fold increase. Our territory has also been greatly extended, and in wealth and power we are second to no nation in the world. This is surely something wonderful to behold, and marvellous in our eyes.

In science and art we occupy a most dignified place among the nations. We have the longest canal, the longest railroad, and the longest suspension bridge in the world. For inventions, our countrymen are widely celebrated. Russia, the greatest of despotic governments, has come here for engineers to construct her railroads and locomotives.

Before the revolution, however, our country was distinguished for philosophy, genius, and skill. She had her Franklin in philosophy, her West in painting, and her Rittenhouse in mechanical skill; These great men have been succeeded by a worthy progeny, and onward, onward rolls the tide of American discovery.

We have many advantages over other nations. Here the skillful European comes a full giown man, with all his art along with him, and here commingle the inhabitants of every nation, comparing their skill, choosing that which seemeth best, and laying aside that which is most defective. It would indeed be a wonderful thing if we did not progress in science and art faster than any other nation. With our advantages and resources, the future is brilliant with hope. We speak principally of inventions, because that is the field in which we labor. When we look back upon the great number of discoveries which have been made, the question often arises "surely we are near the end of invention-there must be a limit to human discovery." No doubt there is a limit to the human mind, but that limit is the boundary of thought, and what geometer has yet been able to measure more, our country will have arrived at its first

Power, or momentum, is the whole quantity of malaria fever, caused by the land being irriga-Motive Powers--Centrifugal Force. signing the sceptre to Macedonia, Greece to a body multiplied into its velocity. These ted and sleeping under canvass. It was ob-On another page will be found a description are the well understood and eternal laws of Rome, and Rome to Western Europe, which served by the medical officers, that with those of the engravings of what some have been abuts on the Atlantic. When America was mechanics. We know some people think who wore the moustache it assumed a less pleased to term "a new Motive Power." It that whatsoever is said to be new must be covered with forests, he anticipated an age malignant type. I believe it was said that has been our fortune to demonstrate the folly when that country would occupy as prominent true; whatsoever is said to be old, erroneous; the hair on the lip protected the nostrils, and of more plausible inventions-(but we canand the air to be place among the nations as had been occu rarified before it re but truth is immutable, however old. By th not see any invention about it except what is pied by Assyria and Rome. Its enormous coal laws we have laid down, and they are those the lungs; however, I do not feel competent to claimed for it) than this. None of the remarks fields, some of them equal in extent to all laid down by all natural philosophers, and explain the exact cause of the action, but that on the page referred to are from us. The con-England, seem destined to form no mean eleevery teacher of engineering, no body in they suffered less, and I feel certain that what cluding remarks, with the name of Mr. Anment in its greatness. If a patch containing Providence gave for some wise purpose was motion can give out a greater power than that drews attached, we saw when they appeared, impressed upon it, and direction has nothing but a few square miles has done so much for never intended to be displaced by Birmingham and were sorry to see them. The letter was central England, what may not fields, containto do with the power. A body moving in a addressed to Prof. Loomis, and was a very unrazors. ing many hundred square leagues, do for the [We don't know but we shall yet have to right line has as much total force as one mobecoming one. There are many people who United States ?" ving in a circle. What is it that makes a knock under to the whiskered furiatios. Here seem to consider that men of science are pub-"Westward the course of empire takes its way." body rotate? The mechanical properties of they have brought science to strike us a keen lic property-that they must talk and reason The four first acts already past : back handed whack; but, friend, we would an axis. The reciprocating motion of a piswith all persons who choose to call upon them; A fifth shall close the drama with the day, say, what kind of a case would you make out ton is converted into rotary motion by a crank and if they do not do so, the first thing we Time's noblest offspring is the last." of our Indians and their squaws, who scorn the and every revolving body has two forces actof our indians and then square, moustache, and yet laugh at fever and ague. see is an attack upon them in some newspaper, ing upon it : one is the centripetal, the other By the latest news from California, San where the details of some private interview are paraded before the public with ungentlemanly the centrifugal. The centripetal force is that Francisco had been nearly all re-built and gold At the present moment the moustache is very common among the light heads. gusto. This should not be, but it has been. which bends the reciprocating force of the pis- was as plenty as ever.

the new rower claimed "was old and well known to geometers, but, until now, was never reduced to mechanical practice." By another we were told that 'the old theories are exploded, and that this is a new discovery in toto." We propose to show, briefly, that it is opposed to sound knowledge-was never known to any "natural philosopher," dead nor living,-that it never will be-that it is a delusion.

And, first of all, let us say that Prof. Bull has certainly made a great bull in his first answer. The question is asked him how much power is required to give a certain weight a certain velocity, in a certain direction. and he says, so many pounds. He might more intelligently have said, "one hundred and sixtysix potatoes." There is no power in mere weight: mechanical power is the weight multiplied into its velocity; apart from velocity, one pound is just as great a power as one thousand. . As dead weight cannot generate a velocity, it cannot create a centrifugal force nor move a screw one single hair's breadth.

But let us deal with the main error, for that of Prof. Bull is small in comparison with it. We mean the "new motive power." What is this? Nothing less than that when a body receives motion in a certain direction, a new force is originated, termed a centrifugal force, and this power is said to be plus the power impressed upon it. Here is what is said, "it takes a certain power to give velocity to a wheel, and in giving this motion, a new force originates, and there is a power in the wheel greater than the impressed power." When we interrogated the inventors about where this power came from, we were told they could not tell any more than we could, where the law of gravity comes from. Let us show how ridiculous the assertion and claim is. Gravity is well known to be a property belonging to all bodies-they mutually attract according to their quantities. Gravitating force, then, is a property belonging to all bodies, but is this "new motive power"-this plus centrifugal forceclaimed to be a property belonging to all bodies? No such thing. It does not even belong to a body moving in a right line. According to the new discoverers' ideas, a body may move in a right line till doomsday withlinear direction, than this new tremendous

do not know where it comes from, we do, and

the last twenty-five years. To you, our incoal fields of the United States, each surroundand cannot move of themselves; a hody at of all those who are exposed to night dews ventors, are committed the future great imed with its ring of old red sandstone, I called rest can only be moved by some foreign force and vicissitudes of climate. I advance these provements which are to benefit our country to mind the prophecy of Berkely, and thought out of itself. All bodies in motion have a opinions in consequence of having been in an and our fellow-men. I could at length see what he could not, the tendency to move forever in a straight line. expedition where many were carried off by a scheme of its fulfillment. He saw Persia re-

We have been told by one gentleman, that | ton rod out of its rectilinear direction, and this is the axis. The centrifugal force, then, is nothing more than the rectilinear force bent out of its natural road by the axis or centripetal force. Centripetal force is not the exclusive property of a wheel or disc : it is displayed in the governor of the engine, the whirl-round of the old toll-gate, two arms on an axis; in short, anything which has an axis.

Those who have honestly believed there was something in this alleged discovery, have been led into error by looking to the centripetal as the natural line of direction of the impressed power, instead of the centrifugal. Another cause is, that centrifugal force increases with the square of the velocity, and they could not see how this could happen unless the power originated in the moving body. A very little learning would have enabled them to see into this, for it could not be otherwise, and it plays the bowls into our assertion, that the centrifugal is just the rectilinear force which has been bent out of, and seeks its natural line of direction. To give a moving body a double velocity, it requires four times the original force impressed upon it triple the velocity, nine times the force : this is a well-known law of mechanics. If the centrifugal force increases according to the square of the velocity, the velocity is increased at the expense of an increase of power according to the square. Here, then, we have a balance of forces : it is thus expressed, CV22=4; centrifugal force increased with the square of the velocity; **RV2²**=4. C V3³=9CV; RV3³=9PV. Gentlemen do you not see how these things balance-how they accord with those laws recognised by natural philosophers and all the engineers of sound and correct views: it cannot be otherwise.

We have been told that Mr. Allen, of the Novelty Works, had expressed himself as a convert to the new theory; if he has we are much mistaken. We might say a great deal more on the subject, but will conclude by merely saying to the assumptions in the Tribune letter, that stationary pressure, by syphon or anything else, would not empty the Croton reservoir in ten centuries.

Coal the Cause of England's Greatness .-- The Future Greatness of the United States.

During a brief sojourn of that eminent geotermined what was to be on the 26th of May, out generating this plus of the impressed force, ogist, Hugh Miller, in England, he critically and on the 3d, 11th and 19th of June, the but no sooner is it made to move in a curviliexamined the carboniferous districts, especialquarter days respectively of that lunation." ly the coal fields of central England, to which This is an important discovery, and shows force is originated. This brings the whole she has for so many years owed her flourishing new theory to the reductio ad absurdum, "a that the influence of the moon is appreciable, trade. Its area, he remarks, scarcely equals line of direction begets a force." This is the contrary to the generally received opinion that of one of the Scottish lakes-thirty miles among the learned. logic of the matter; as well might it be said, long and eight broad; "yet how many steam a pure geometrical line can beget a concrete; engines has it set it motion? How many The Moustache. a circle a sphere; (like the absurd theory of railway trains has it propelled, and how many A correspondent of the United Service Ga-Smith), nothing beget something; the path millions of tons of iron has it raised to the zette says :--- " Sir,-I have lately seen in the of a planet its moving force; the railroad the surface, smelted, and hammered? It has two military journals several letters advocamoving force of the locomotive. that mighty span? In twenty-five years made Birmingham a great city-the first iron ting the growth of the moustache for infantry depot of Europe." "And if one small field But if the inventors of the "new motive regiments. I must go further and suggest it century. Great changes will take place duhas done so much," he says, "what may we power"-this tremendous centrifugal forceto be worn by both army and navy, if it is ring the intervening years, as there have duexpect from those vast basins laid down by possible to overcome our national prejudices. ring the past. The railroad and telegraph, it is not plus the momentum. Lyell in the Geological map of the United I advocate it from no foppish freak, but from and many other great inventions, belong to States? When glancing over the three huge All bodies at rest have a tendency to rest a sanatory motive, as conducive to the health

American Watered Silks. American watered silks are possible and exist. For generations, the manufacturers of France alone, had the knowledge of the art of giving silk the power of reflecting the rays of light, like the waves of a gently undulating surface of water; and even now, in England, the art of watering silk can hardly be said to exist. But in America, in Boston indeed, within a few months, experiments have been made upon ribbons, which have resulted in perfect success. The long experience of Lyons is now equalled by a Boston manufacturer. The art of watering silk is the discovery of Mr. Samuel Edgerly, one of the firm of Tilt & Co., of Milk street, whose silk factory is upon Tremont road. After years of study, and some experiments, he is now able to turn out watered silk ribbons, so beautiful and perfect, as to pass for French ribbons, even when inspected by ladies who are expert in matters of taste. In their factory, during something like a year, beautiful and substantial plain-woven ribbons have been made, and also those of various ornamental devices. Now ingenuity has triumphed, and to-day our country in the World's Fair, could exhibit as fine watered silks as will grace that great museum from older lands.-[American Cabinet.

[Bah, this art has been known and practiced in America for twenty years. We described and published the process of "watering silks" five years ago.

Does the Moon Influence the Weather.

From remote ages, a traditionary opinion has prevailed among the rude-and civilized too-people of all nations, that the moon influenced the weather. A few years ago, the French astronomers reported against this opinion as a fallacy, and the question was thought to be settled, but in the July number of the American Journal of Science and Arts. Mr. J. W. Alexander contributes a short article on meteorological coincidences, in which he states as the result of a long continued series of observations, "that the third day before the new moon regulated the weather on each quarter-day of that lunation, and also characterized the general aspect of the whole period. Thus, if the new moon happened on the 26th of May, 1851, the term day was the 24th of May; the weather on which the 24th of May de-

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Scientific American.



Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than anyother journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improve ments. No charge is made except for the execution of the engravings, which belong to the patentee af ter publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING JULY 1, 1851. To Wm. Hinds, of Otsego, N. Y., for Vice Saw Set.

I claim constructing a vice for the purpose of compressing saws to be set or filed, in the following manner, namely, with only one supporting arm to each jaw, hinged at their lower extremities, and having an extra arm on one side of and parallel, or nearly so, to said supporting arms, to the upper extremity of which is attached an eccentric lever, or its mechanical equivalent, for compressing the two jaws together; constructed substantially as herein described.

To Washburn Race, of Seneca Falls, N. Y., for ar rangement of catches on the upper sash, operated by moving the lower sash.

I claim the arrangement herein described, of the catches and window sashes, for the purpose described.

To Benj. Kraft, of Reading Pa., for improvement in Boxes and Axles for saving oil.

I claim causing the bevelled edges of the oil box to enter the grooves of the axle and rest against their outer shoulders but not against their inner ones, thus at the same time preventing end play, and the escape of the oil-the journal bearing being lower than the bevelled edges of the oil box, and sufficiently above the bottom of it, to prevent oil coming from the box to the journal.

To Henry Whitney, Jr., of Cambridge, Mass., for improvement in Inkstands.

I do not claim the invention of the elastic diaphragm for inkstands, but I claim my inkstand as a new article of manufacture in which the following features are, for the first time associated, viz., an elastic diaphragm covered and secured from injury, by a metallic cap, regulated by a screw passing through the cap, and in combination with the diaphragm, the funnel stop, and waste cup.

To J. B. Wickersham, of New York, N. Y., for improvement in Iron Fences.

I claim the manner herein described of secu ring the rails of iron fences, by means of sectional or divided parts, having slots therein, which are so arranged that, when in place, they break joint with each other, the slot in one section, extending upward, and the slot in the other downward, so closing the slots, as to prevent the rails, which have a loop, or dead eye, turned on each end for that purpose from passing through or coming out as herein fully set forth.

To H. W. Sabin, of Canandaigua, N. Y., for iraprovement in Bedsteads.

I claim the knuckle joints for holding the rails of the bedstead together, in combination with the rods, substantially in the manner and for the purpose described-said rods being the perfection of the work is secured, the

To A. E. & D. Lazell, of Chickopee Falls., Mass. or improvement in Bread Cutters.

We claim the use of a series of knives or cutter, made in the form of eccentric circles or scrolls, with the cutting edge on the periphery, so as to represent a spiral line or curve, when combined with the bars or ribs of the bed piece, which serve to sustain the loaf, and also to guide the knives, and with the fingers or prongs which hold the loaf against the knives, whilst cutting, and also act as outside guides, when the whole is constructed, arranged, combined, and operating substantially as described

To Michael Miller, of Rochester, N.Y., for improve ment in Pianofortes.

I claim the spring acting on the valve in combination with the weight of the key resting on the valve for the purposes substantially as described.

To Daniel Barnum, of the County of Philadelphia, Pa., for improvement in machines for making Hat Bodies.

I do not claim the combination of a picker and chamber, having an aperture for the admission of air-such a combination having long been known and used for opening and cleaning the fibres of fur. Nor do I claim the combination of these with a perforated exhausted former, such a combination having been referred to in an application for a patent by T. R. Williams, in 1840, though it was not then claimed as his invention. Nor do I claim the use of water to harden or to wet the hat body, such use being as old as the felting process. Nor do I claim the hardening of a hat body on a cone, such a process having been described and patented to Wells, James & Peck, in 1837, they using a solid cone, upon which a web was wound to form the body, and numerous jets of steam were used to harden the same, or to wet it, as it was wound on the cone, there being no exhaust, and processes for hardening bodies on a perforated cone, have also been described in 1840, by Williams, and by Wells in 1846, they both using water pressure to hold the fibres, while the cone and fibres are immersed. Nor do I claim any of the parts as my invention, except as they are used in new combinations, and producing new and important results.

But I claim the exhausting and suspending fan, with its casing and aperture, constructed, arranged, and operated substantially for the purpose described, in combination with the picker and chamber, perforated exhausted former, and exhaust fan, arranged substantially as described and shown, by which arrangements and combinations the several parts, or their equivalents, perform their several and combined functions in a better manner, and produce better results than has been heretofore attained, without any chamber, trunk, or tunnel, or any other means, to control the fibres after being suspended in the air by the fan, or between the fan and perforated exhaust cone, or former, substantially as described.

I also claim the combined action of the currents of air and the currents of numerous jets of hot water, in the hardening or wetting process, the currents of air performing the triple duty of holding the fibres of the former. and of aiding the water to penetrate the hat body, and at the same time to carry the surplus water through the perforations into the exhaust thus effectually preventing injury to the hat body, from the accumulation of the surplus water to wash it, while the wetting or

and in the process of hardening as in the facility of operation, the whole being, by combination of machinery, heretofore unknown. To T. R. Bailey, of Lockport, N. Y., for fmprovenent in Lathes.

I claim controlling the poppet centre, so that it releases itself after the turning is finished, by connecting it with a sliding bar, having a weight, or its equivalent attached, and carrying a ratchet, which is held by another ratchet attached to the stationary bed, the said catch having an arm attached, which is struck by part of the cutter head, after the cut is finished and released from the ratchet, substantially as shown.

[See engraving in No. 25, this Vol.]

To D. W. Eames, of West Turin, N. Y., for improvementin running gear of railroad carriages

I claim the employment of wheels in any number of pairs attached, on either side, to the truck, or frams. of railway vehicles, and set at any inclination to the horizon, converging to a point, in or below the rail, so that both wheels of any one pair will rest or travel on opposite sides of the upper surface of either one or the same rail, essentially as described. To Charles Atwood, of Derby, Conn., for improvement in wire Hooks and Eyes.

I claim, first, the addition of side springs to the common forms of hooks and eyes, substantially in the manner and for the purposes set forth.

Second, I claim the small ridges, or elevations on each side of the beak of the hook, made by bending the wire of the side springs, or by other means equivalent thereto, for the purpose set forth.

Third, I claim the jews-harp form, or partly circular eyelets, extended to form loops adapted to receive tape, in connection with the small elevations, to keep the tape in its proper place, substantially as set forth.

To John Crum, of Ramapo, N. Y., for improvem in machinery for Cutting Files.

I claim connecting the file blank to be cut, with a bed, which has a positive feed motion. substantially as described, in combination with an incidental rolling motion, depending upon the shape of the blank and the angle which the cutter forms therewith, substantially as described.

I also claim connecting the chisel with its stock by a joint, as described, by which they are rendered self-adapting, as described.

I also claim holding the file down on to the bed, during the operation of cutting, and near to the cutter, by means of a roller or its equivalent, combined with the rolling bed, substantially as herein described, but this I only claim when the end of the file is so connected with its bed that it shall be free to move up and down, that the pressure of the roller may keep that part of the file that is being cut, firmly down on to the bed, as herein specified.

I am aware that before the date of my invention, the cutter of file cutting machines has been jointed to a helve or bar, but in such cases it has not been combined with a rolling bed, and therefore I do not wish to be understood as claiming, broadly, the making of the cutter with a joint, but to claim this only, under the limitations pointed out above.

March I am also aware that the file blank has been April made to slide, during the feeding motion, over May a rolling bed, to adapt the transverse plane of June the file blank, to the line of the cutting edge, July for cutting the different ranges of teeth, and, Aug. hardening process is greatly facilitated, and therefore, I do not wish to be understood as Sept. claiming, broadly, the employment of a rolling Oct. also employed to support the slats forming the whole process being accomplished by the com- bed, but to claim such rolling bed, when made Nov.

devices being arranged and operating substantially as set forth, in such a manner that the cross piece of the connecting rod, which is placed transversely to the crank shaft, shall be on opposite sides of the axial line of said shaft, at opposite extremities of the stroke of the piston.

I also claim the belts, or gimbal rings, or the equivalents thereof, arranged substantially as set forth, for the purpose of transmitting the movement of the crosshead to the connecting rod of a steam engine.

(For the Scientific American.) Practical Remarks on Illuminating Gas.

[Concluded from page 334.] Oil and rosin gas establishments, we must admit, are sources of great nuisance; the chief cause of which is the soot or lampblack which escapes while cleansing and renewing the retorts, and in the former works the odor of the volatile oil, and other animal matter undergoing decomposition, is exceedingly disagreeable.

There are not a few persons who entertain a belief that the gas contained in the gas holder will explode if any lighted material be brought in contact with it; and many prejudices have been grounded upon this belief, although it is perfectly absurd; if a lighted candle were to be thrust into a vessel containing carburretted hydrogen gas, it would be extinguished as readily as though it were immersed in water. Gas cannot burn without a supporter of combustion.

In almost all loaclities where coal gas works have been established, the land in the immediate vicinity has enhanced in value, and persons living in the neighborhood suffer no inconvenience whatever. I have alluded to this subject for the purpose of aiding if possible the formation of a right feeling towards this matter, and to set at rest all fears of nuisance wherever a coal gas establishment is projected. If people would thoroughly understand this matter before they speculate upon the probable inconvenience arising from it, much valuable time would be saved, and much ignorance remain undetected.

J. B. B.

This article concludes the series on gas and gas lighting. They are the most valuable ever published on the subject in our country, and will be used for reference as standard authority. They are from the pen of Mr. J. B. Blake, gas engineer, Boston, and exhibit a scientific and practical acquaintance with the subject.

Patent Office Report.

As the Report of the Patent Office for 1850 is not yet published, the following statistics of that Office will be of great interest to our inventors. We are obliged to Mr. C. D. W. Lawrence, late Chief Clerk, for the same-a gentleman who filled the office with ability and integrity.

Statement of amount of fees received and number of applications and caveats filed during each month for 1850 :

Jan.

Feb.

Cash.		Applications.	Patents.
8,777	47	239	60
7,239	26	176	60
8,119	43	196	38
6,683	72	177	48
7,589	43	196	60
8,847	88	191	44
6,188	23	161	31
6,287	9 3	174	49
6,984	00	181	34
6,095	57	166	61
6.392	81	165	52

	bottom of the bedstead.	bination of the several parts named, or their	to move with the file, during the feeding mo-	Dec. 7.721 32 199 65	
	To J P Paine of Worcester, Mass., for improve-	equivalents, for producing the currents of air	tion from end to end, under the limitations		
	ment in Spectacle Frames.	and water, with the perforated former over the	specified.	\$86,927 05 2,193 602	
	I claim the combination of the spring andcy	exhaust in the manner and for the purposes	To L. F. Cavanaugh, of Newfield, N. Y., for 1m-	Applications in 1848, 1,628; 1849, 1,955	;
	linder, with the temple bow and the glass frame,	substantially as described.	provement in Handles of Brushes and Brooms.	1850, 2,193. Cases granted in 1848, 607	;
	the whole being substantially as described.	The effects of these improvements are the	I claim the lever jaws held together by the	1849, 595; 1850, 602. Patents issued in	1
	To A. Palmer & S. G. Williams, of Brockport, N.	production of a machine combining the best	head piece of the screw, in combination with	1848, 660; 1849, 1,076; 1850, 995. Cas	1
	Y., for improvement in Grain Harvesters.	means for opening fibrous materials and sus-	the conical end of the handle, substantially in	received in 1848, \$67,576 69; 1849, \$80,75	2
	We claim discharging the cut stalks and	pending them in the sir, surrounding a per-	the manner and for the purpose set forth.	78; 1850, \$86,927 05. Cash expended in	1
	heads of grain from the platform by means of	forated and exhausted former, and also of a	To F. P. Dimpfel, of New York, N. Y., for impro-	1848, \$58,905 84; 1849, \$77,716 44; 1850	,
	the combination of the rake with the lever,	new combination of means for hardening the	ved arrangement of the Steam Engine.	\$80,000 95.	
	and the cc-operation therewith of the series of	fibres, and completing the process, without re-	I claim the method described, of connecting	There were 238 more applications last yea	e
i	teeth on the face of the wheel, and the in-	moving the hat or applying any pressure, pre-	the steam piston of a steam engine with the	than the year before. The number increase	•
	clined rail rising above the curved guard of	paratory to the suspension of the pressure of	crank thereof, by means of a piston rod, fixed	rapidly every year,—the march of invention i	·
- 4	the platform, substantially in the manner	the air, by which means a great improvement	crosshead, side bars, forked connecting rod and	onwards-improvement succeeds improvement	Ξ
G	set forth.	is effected, as well in the forming of the hat	belts, or the equivalents thereof, these several	with astonishing rapidity.	Đ
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TO CORRESPONDENTS.

L. S. S., of Ohio.-Your drawing and description is not clear; if you could send us a small model we could judge better of its novelty. The expense would have to be paid by you.

I. F. D., of Brooklyn.-We do not believe your plan would work well. The examiners of the Patent Office think these devices of doubtful utility, and have rejected applications based upon this assumption, and Mr. Ewbank has signed them. He would pay no at tention to your letter, of this we profess to know how he would manage.

T. R., of Ohio.-The under strata of the Russ pave ment, in our city, is made of the concrete described by you. The large blocks are laid on top.

J. G., of Pa.-Yours has been received and will ap pearnext week.

T. M. C., of Phia.-We do not know of any one at present who would take an interest with you in the English application. The expense is so great, and the certainty of success so doubtful, that, in our opinion, you will find it difficult to engage any one in the case. We wish you success.

E.S., of N. H.-Yours of the 1st, enclosing \$23, in received: we shall attend to your friend's business when he comes on.

J. H., of Pa.-It is perfectly true what you say, but the rough log has reference only to floating in a river as might be inferred from another proposition. In nearly every river there are some counter currents; therefore the form of least resistance has the advan tage over that of the greatest, although both are advanced by the current of greatest force.

0. H., of N. Y.-So far as we know, your improve mentin the Harp is new : we have never seen clutches like the one you have presented in your sketch. They both appear to be patentable.

D. M., of N. Y - A small work on natural philosophy by Neale, of London, exhibits the magnetic equa-Jas cost is not over 37 cents.

D. B., of N. Y .- We will give yours attention.

L. J. 1'., of Mass.-We do not, at present, know the modelling composition to which you refer ; if we discover it you shall be informed. We shall also acquaint you about a suitable situation, if such an one comes under our notice.

P. M. E., of N. C .- The potash used for soap is the common kind, which can be purchased in the stores; it is dissolved in a small quantity of water. It must bevery strong, and is poured upon the grease and boiled for some time. We cannot give you the information about the brick moulds, &c., at present.

J. P., of ---Yours about the Filter we shall publish soon.

T. P. C., of Ohio .- We understand your contri vance, as explained in your letter of the 28th June and think it would be useful if made to work well If the same machinery has been used for other purposes, its application to a new purpose does not involve invention. If the contrivance is new you could obtain a patent for it. We have no additional instruction to give until the sketch and description are received.

G. S., of Ct.-Yours of the 1st is received and has been examined. The specific point upon which you desire to base a claim, could, we think, be patented. We have not been able to find any such arrangement connected to a wrench. As you do not explain the nut working on the bar, fully, we do not fully understand its operation. It looks something like the patents of Hewitt, Cowles, and Merrick,-we can tell upon receipt of the model, which you can send when complete.

N. M., of Ohio.-The manufacturers warrant the machine to do all the statement says-we do not. The weight without the frame cannot be much short of 150 lbs. Cash price \$25; it can be shipped to Pittsburg without trouble and at any time you order. You can make the ways of suitable length to accom modate the stick to be turned.

W. A. B., of Phila.-We have received yours, and understand its principles. It is new to us and strikes us favorably; there is a practical difficulty however in its operation. We have had a section of Broadway paved rough for the horses and smooth for the wheels. It has not answered the purpose owing to the great amount of crossing the track.

J. C. S., of N. Y.-Yours of the 1st inst., enclosing \$1 came safe to hand. We will look for your article, and if found it will be sent to Prof. H.

S. J., of N. Y., J. E. B., of Geo., H. C. A., of S. C., and A. J. R., of Mass .- Your models are received and will receive immediate attention.

J. C. W., of N. C.-Your letter of the 23rd ultime enclosing \$15 is received and will be attended to.

Moneyreceived on account of Patent Office busi-

Scientific American.

Back Numbers and Volumes.

In reply to many interrogatories as to what back numbers and volumes of the Scientific American can e furnished, we make the following statement : Of Volumes 1, 2, and 3-none.

Of Volume 4, about 20 Nos., price 50 cts.

Of Volume 5, all, price, in sheets, \$2; bound, \$2,75 Of Volume 6, all back Nos., at subscription price

New Edition of the Patent Laws

We have just issued another edition of the American Patent Laws, which was delayed until after the adjournment of the last Congress, on account of an expected modification in them. The pamphlet contains not only the laws but all information touching the rules and regulations of the Patent Office We shall continue to furnish them for 121-2 cts. per copy.

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Agency. Important to inventors.—The under-signed having for several years been extensively ongaged in procuring Letters Patent for new mechani-cal and chemical inventions, offer their services to in-ventors upon most reasonable terms. All business entrusted to their charge is strictly confidential. Pri-vate consultations are held with inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Mo-dels can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible. Having Agents located in the chief cities of Eu-rope, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manu-facturers at all times, relating to Foreign Patents. In the item of charges alone, parties having business to transact abroad, will find if for their interest to consult with us, in preference to any other concern. MUNN & CO., Scientific American Office, 128 Fulton street, New York.

BEARDSLEE'S PATENT PLANING MA **BEARDSLEE'S PATENT PLANING MA-**chine. for Boards and Plank —This recently pa-tented machine is now in successful operation at the Machine Shopand Foundery of Measrs. F. & T. Town-send, Albany, N. Y., where it can be seen. It produ-ces work superior to any mode of planing before known. The number of plank or boardsfed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the above-named foundery, or at his residence. No. 764 Broad-way, Albany. GEO. W. BEARDSLEE. 43tf

MORTISING MACHINE.—Doar Sirs : I re-ceived the Portable Mortising Machine about3 weeks ago : I have used it, and am very well pleased with it. It is the best plan of a machine of the kind I have ever seen. W. R. McFARLAND. Nashville, Tenn., June 22, 1851. The above machines are for sale by MUNN & CO., price \$20—boxed and shipped. 42 tf

BRICK-MAKER WANTED.-I am desirous B of obtaining a foreman for an extensive brick-yard : it will be necessary that he be a sober indus-trious man, a practical brick-maker, fully competent to superintend the work of 40 men; to such a person asalary of \$500 a year would be given; situation permanent, upon good behavior. Address A. MIL-LER, Raleigh, Canada West. 43 4

MONTGOMERY MANUFACTURING CO'S MONTGOMERY MANUFACTURING CO'S Iron Works, Montgomery Ala. Capital inves-ted, \$250,000. Steam Engines and Boilers, Reuben Rich's cast-iron centre vent water wheel and iron scrolls complete (the very best wheel in use), sugar mills, saw and grist mill irons of most approved pat-terns, iron and brass castings of every variety, &c. Orders promptly executed, and upon terms as favo-rable as can be secured from the best northern es-tablishments. When required, deliveries made (through their agents) at Mobile or New Orleans. Ad-dress GINDRAT & CO., Agents. 42 3m

B. WILSON'S SEWING MACHINE, A ejustly allowed to be the cheapest and best now in use, patented Nov. 12, 1530, can be seen on exhi-bition at 195 and 197 Broadway, (formerly the Frank-lin House, room 23, third floor,) N. Y. Rights for Territory or Machines can be had by applying to WM. S. LOVELL, Agent. 42 2*

M ECHANICS' FAIR.—The Middlesex Mecha-inc's Association will epen their first exhibition for the encouragement of the mechanic arts and ma-nufactures in the city of Lowell, on Tuesday, Sept. 16, 1851. The Committee of Arrangements for this proposed Fair, respectfully invite and solicit all per-sons engaged in the various branches of mechanism, manufactures, science, and art, to present specimens of their various products for exhibition and premium. Ladies are cordially invited to present specimens of their ragenuity and taste. Preminms will be award-ed as the articles presented may merit. Articles for exhibition should be sent on or before Sept. 10th. For more particular information or coopies of the circular, address (post-paid) J. A. Beard, Esq., Supt., Lowell, Mass. Ey order, OLIVER M. WHIPPLE, Chairman. M. C. BRYANT, Sec'y. 4010

AW'S PLANER FOR PLANK, BOARDS, AW'S PLANER FOR PLANK, BOAKDS, J.C., is now attracting much attention on account of its effectiveness, the excellence of its work, its simplicity, and consequent economy. Machines are now in operation in Brooklyn, New York City, and at various points South and West. Rights or ma-chines for sale by H. LAW, 23 Park Row. 35 tf

contact for sale by H. LAW, 23 Park Row. 35 th **ECONARD'S MACHINERY DEPOT**, 109 Dearl st. 60 Beaver, N. Y.—The subscriber is constantly receiving, and offers for sale, a great va-rlety of articles connected with the mechanical and manufacturing interest, viz., Machinists' Tools—en-gines and hand lathes, iron planing. and vertical drilling machines, outting engines, slotting machines, bolt cutters, slide rests, universal chucks, &c. Car-penters' Tools— mortising and tennoning machines, wood planing machines, do. Steam Engines and Boil-ers, from 5 to 100 horse power. Mill Gearing,— wrought iron shafting, brass and iron castings in ide to order. Cotton and Woolen Machinery furnished from the best makers. Cotton Gins, hand and pow-er, and power presses. Leather Banding of all widths, made in a superiormanner, from the best oak tanned leather, Manufacturers' Findings of every de scription—bobbins, reeds, abuttles, temples, pickers, card clothing, roller cloth, potato and wheat starch, with the superiormanner, from the best tarch power of the bost oak tannel scription. card clothing, roller cloth, potato and wheat starch, oils, &c. P. A. LEONARD. 33tf.

DATENT CAR AXLE LATHE.—I am now manufacturing and have for sale the above lathes: they will turn and finish six sets per day, weight 5,000 lbs., price \$600. I have also for sale my Patent Engine Screw Lathe, for turning and chuck-ing tapers, cutting screws, and all kinds of common job work; weight 1500 lbs., price \$225, if the above lathes do not give good satisfaction, the money will be refunded on the return of the lathe, if within six months. 32 13* Hartford, Conn.

G REAT REDUCTION IN PRICE.-Themos **CREAT REDUCTION IN PRICE.**—Themost and medical recipes, rules with regard to the recove-ry and preservation of health, an account of the dif-ferent medical theories of the day, useful tables, &c., entitled "THE GRAEFENBERG MANUAL OF HEALTH." It is complete in one volume of seven parts, and is beautifully printed upon fine paper, in a convenient form of 300 pages. The immesse success which has attended the sale of previous editions, has warranted a reduction in the price of this (the 7th) edition, from 50 to 25 cts. per copy. Any number of copies, from one upward, will be forwarded upon the ereceipt of the money. (post-paid). Address THE GRAEFENBERG COMPANY, 214 Broadway, N.Y., or this Office. 35tf

WOODWORTH'S PATENT PLANING MACHINES: 1851 TO 1856.—For rights at Honesdale, Carisbondale, Providence, Pittston, Scranton, Wilkesbarre, Williamsport, Meadsville. Newcastle, and other runoccupied towns in Northern Pennsylvania and New York, apply to JOHN GIB-SON, Planing Mills, Albany, N. Y. 414*

WATTS & BELCHER, Manufacturers of Steam Engines, Lathes, Planing Machines, Power Presses, and Mechanics' Tools of all descrip-tions : Washington Factory, Newark, N. J. 3813*

Tions: Washington Factory, Newsra, A.C. THE COTTON CULTIVATOR, Patented March 20, 1849, is in successful operation in Mau-ry Co., Tenn., both in the cultivation of corn and cot-ton; it is a saving of one-third the labor usually ta-ken in the cultivation of the above named crops... State, county, or plantation rights for sale : those wishing to buy will do well to come and see those that use them, and if they do not find them re-commended by good farmers as here stated, I will bind myself to give them the right to any State or county. The farmers, in some places, have clubbed together and bought their counties, and have made money by it. The patentee, or some of his agents. will attend most of the Fairs this season, where the Cultivator may be seen. SAMUEL W. AKIN. Springhill, Maury Co., Tenn. 41 5*

CHILD'S PREMIUM SAW MILL-To Plank Road Contractors and Lumbermen generally.-The subscriber having obtained a patent for improve-ments in circular saw mills, by which large timber can be cut with as great facility as small, and with one half less power, and one-third less weste of tim-ber than by ordinary mills, offers mills and rights on reasonable terms. For illustration see Scientific American of March 15th, 1851. 0. C. CHILD. Granville, III., May, 26, 2851. 39 9eow*

Wai. S. DovELD, Agent.
For sale, the right to use this justly celebrations, & c. — The undersigned having succeeded in counteracting, effectual graving machine in the following States, viz.: Pennsylvania west of the Allegheny Mountains, Virginia west of the Blue Ridge, Ohio, Indiana, Kentuo-bigned having succeeded in counteracting, effectual graving machine in the following States, viz.: Pennsylvania west of the Blue Ridge, Ohio, Indiana, Kentuo-signed having succeeded in counteracting, effectual graving machine in the following States, viz.: Pennsylvania west of the Blue Ridge, Ohio, Indiana, Kentuo-signed having succeeded in counteracting, effectual graving machine in the Ollowing States, viz.: Pennsylvania west of the Blue Ridge, Ohio, Indiana, Kentuo-key, Tennseee, Wisconsin, Iowa, Missouri, Irkansas, Texas, Louisiana, Florida, Alabama, and Mississippi-for particular apply to the Proprietor, ELISHA BLOOMER, 304 Broadway.
Bloomer, 304 Broadway.
Bloomer, 304 Broadway.
CRANTON & PARSHLEY, Tool Builders, and those not proving statisfactory, when completed may be rejected. Astronomical Clocks made and planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, have now made ar-planed and screw and gearing out, hav

CARD.-The undersigned beg leave to draw the attention of architects, engineers, machi **CARD.**—The undersigned beg leave to draw the attention of architects, engineers, machi-nists, opticians, watchmakers, jewellers, and manu-facturers of all kinds of instruments, to his new and extensive assortment of fine English (Stubs) and Swiss Files and Tools, also his imported and own manulactured Mathematical Drawing Instruments of Swiss and English style, which he offers at very rea-sonable prices. Orders for any kind of instruments will be promptly executed by P. A. SIBENMANN, Importer of Watchmakers' and Jewellers' Files and Tools, and manufacturer of Mathematical Instru-ments, 154 Fulton st. 42 2* A

DICK'S GREAT POWER PRESS.-The DICK'S GREAT POWER PRESS.—The public are hereby informed that the Matteawan Company, having entered into an arrangement with the Patentee for the manufacture of the so-called Dick's Anti-Frittion Pfess, are now prepared to exe-cute orders for the following, to which this power is applicable, viz.—Boiler Punches, Boiler Plate Shears, Saw Gummers, Rail Straighteners, Copying and Seal-ing Presses, Book and Paper Presses, Embossing Presses, Fresses for Baling Cotton and Woollen Goods —Cotton, Hay, Tobacco, and Cider Presses; Flax-seed, Lard, and Sperm Oil Presses; Stump Extract-ors, & c. & c. The convenience and celerity with which this machine Can be operated, is such that on an average, not more than one-fourth the time will be required to do the same work with the same force required by any other machine. WILLIAM B. LEONARD, Agent, 25tf No. 66 Beaver st., New York City.

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TO PAINTERS AND OTHERS.—Ame-rican Anatomic Drier, Electro Chemical grain-ing colors, Electro Negative gold size, and Chemical Oil Stove Polish. The Drier, in-proves in quality, by age—is adapted to all kinds of paints, and also to Printers' inks and colors. The above articles are compounded upon known chemical laws, and are sub-mitted to the public without further comment. Manu-factured and sold wholesale and retail at 114 John st., New York, and Flushing, L. I., N. y., by QUARTERMAN & SON, 35tf Painters and Chemists

M ACHINERY.-S. C. HILLS, No. 12 Platt Street, N. Y., dealer in Steam Engines, Boil-ers, Iron Planers, Lathes, Universal Chucks, Drills Kase's, Von Schmidt's, and other Pumps, Johnson's Shingle machines, Woodworth's, Daniel's and Law's Planing machines Dick's Presses, Punches, and Shears; Mortic' g and Tennoning Machines, Belt-ing, machiner7 oil; Beal's patent Cob and Corn Mills; Burr Mill, anu Grindstones, Lead and Iron Pipe, &c. Letters to be noticed must be post paid. 38tf

BAILEY'S SELF CENTERING LATHE **B** for turning Broom and other handles, swelled work, ohair spindles, &c.; warranted to turn out twice the work of any other lathe known-doing in a first rate manner 2000 broom handles and 4000 chair spindles periday, and other work in proportion. Orders, post-paid, may be forwarded to L. A. SPALDING, Lockport, N. Y. 21tf

RAILROAD CAR MANUFACTORY...-TRA-Passage, Freightand all other descriptions of Rail-road Cars, as well as Locomotive Tenders, made to order promptly. The above is the largest Car Fac-tory in the Union. In quality of material and in workmanship, beauty and goed taste, as well as strength and durability, we are determined our work shall be unsurpassed. JOHN R. TRACY, 39tf. THOMAS J. FALES.

AP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1 1-4 to 7 inches in di-ameter. The only Tubes of the same quality and manufacture as those so extensively used in Eng-land, Scotland, France and Germany, for Locomo-tive, Marine, and other Steam Engine Boilers. THOS. PROSSER & SON, Patentees, 16tf 29 Platt st., New York.

ATHES FOR BROOM HANDLES, Etc. We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pil-lars, Rods and Rounds ; Hoe Handles, Fork Handles, and Broom Handles. This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smoeth over swells or depressions of 3.4 to the inch, and work as smoothly as on a straight line, and does ex-cellent work. Sold without frames for the low price of \$25-boxed and shipped, with directions for set-ting up. Address, (post paid) MUNN & CO., Atthis Office. At this Office.

WOODWORTH'S PLANING MACHINE. For sale, the right to use this justly celebra-ted labor-saving machine in the following States, viz.: Pennsylvania west of the Allegheny Mountains, Vir-ginia west of the Blue Ridge, Ohio, Indiana, Kentuo-ky, Tennessee, Wisconsin, Iowa, Missouri, Arkan⁸³⁸, Texas, Louisiana, Florida, Alabama, and Mississippi. For particulars apply to the Proprietor, ELISHA BLOOMER, 304 Broadway. 38 10*

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	nobs bince suly 1.	its original cost. The boiler is 20 feet long and 35 in.	may be rejected Astronomical Clocks made and	planed and screw and gearing out have now made ar-	
	J. W. R., of N. Y., \$40; D. H. T., of Mass., \$30;	in diameter; 2 return flues, 11 in. in diameter each,	warranted equal to any imported	rangements to accommodate that class of custom-	
	J. Van B., of N. Y., \$20; A. L., of N. J., \$8; H. H.,	with steam chamber top of boiler 2 ft. high, by 16 in.	Glass(Illuminated) Diala of the most beautiful de-	ers : this arrangement will enable small shops, with	H
	of Mass., \$40; E. S., of N. H., \$28; W. F. W., of	diameter. The heads are wrought iron, with grate	scription furnished. Address	a little more than half of the amount of ready cash.	
- (1	S. C., \$30.	bars, fronts, binders, and bolts complete, all made in	SHERRY & BYRAM.	to get them a new lathe. Cuts of these lathes and	
		the best manner, and called by the manufacturers a	Oakland Works, Sag Harbor, L. I.	other tools can be had by addressing as above (nost-	
	Post Office Stamps.	20 horse-power boiler; also sheet-iron cap to conduct	"Mr. Byram has established his reputation as one	paid). N. B. Machinists' tools constantly on hand.	111
		the smoke from the end of the boiler to the chimney.	of the first clock makers in the world"-[Scientific	40tf	HI.
	In consequence of the change of rates on the first	The Engine is upon a solid horizontal cast-iron frame	American.		
	of next month, we would respectfully notify the pub	131-2it long, 21-2 wide, 9 in. deep; has a belt ba-	"Mr. Byram is a rare mechanical genius."-[Jour-	BEFORANICS INSTITUTE PATE THAT	11
	lig that henceforth until further notice Post Office	lance wheel 8 ft. diameter, 12 in. face; cylinder 21-2	nal of Com. 29 12eow*	tention of Machanica inventors and artigana is	
	ne that Menceloith, until Turther house, Tost oldee	it. stroke and 8 3-4 in diameter; has copper connect-		aspecially called to the Delytachnic Erhibition mhich	
	Stamps will not be received at this office in payment	ing pipes and heater for heating water before enter-	TRAIMEDIS ADTIFICIAL LEGS Manu-	will open at the rooms for Bowery and Division at	
1	for subscriptions to the Scientific American.	ing boller; it has double pumps, and the whole is so	factured at Springfield Mass and 376 Chest-	on the 15th of May Those who wish to exhi-	
- 11		being and in such condition that no expense need	nut et Philadelphia by Messre Palmer & Co _ All	bit models, machinery &c of mechanical skill and	
		beincurred in putting it in funning order after being	orders from New Vorkand New England must be	those who would like to carry on permanently any	
1	Patent Claims.	but 3 years and are offered at the low price of \$1 000	made to Dalmer & Co. Springfield. Mass -"I have	mechanical occupation that would be in any way cu-	
	Persons desiring the claims of any invention	to close a concern. Any one wishing an engine and	examined carefully the Artificial Leg, invented by	rious or attractive to visitors, are requested to call on	
- 1		boiler of the above capacity will find this an oppor-	Mr. B. F. Palmer : its construction is simple and its	the Actuary. Steam power will be provided. Well-	11
	which has been patented within fourteen years	tunity to purchase chean which does not often occur	execution beautiful, and, what is most important.	lighted, warmed, and airy rooms can be had on liberal	
- 11	ann abtain a const hur addressing a letter to this	Any of our subscribers remitting a draft on New	those who have the misfortune to require a substi-	terms. As this Exhibition is permanent, an excellent	11
	an obtain a copy by addressing a letter to this	York for \$1,000, will receive in exchange therefor an	tute for a natural limb, and the good fortune to use it,	opportunity is offered to skillful mechanics to bring	in
Ľ	fice; stating the name of the patentee, and	engine and boiler which would not be furnished by a	all concur in bearing practical testimony to its supe-	themselves into notice. Articles may be sent in im-	£Ψ
-		manufacturer for less than \$1.800. Address	mority in comfort and utility. VALENTINE MOTT.	mediately and will be taken care of and insured. Z.	H
li.	enclosing one dollar as ice for copying.	MUNN & CO., (Post-Paid.)	New York, Jan. 29, 51." 39 6meow*	PRATT, Prest.; T. C. DODD, Actuary. 34tf	пLL
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Scientific American. 344 July 2nd, 1750, died December 22nd, 1831. of astronomers;" born at Pesth, Hungary, Scientific Museum. Maj. James Rennell, scientific geographer, June 15th, 1854, died at Paris September 2nd, born at Upcott, England, died 1831, aged 88. 1832.

For the Scientific American Necrology for the last Half Century --- Men of Science.

Benjamin Thompson (Count Rumford), an ingenious philosopher; born at Concord, N.H., 1753, died at Autevil, France, August 21st, 1814.

Archibald Bruce, mineralogist and editor of the earliest purely scientific journal in America; born at New York, February 1777, died February 22, 1818.

Fanjas de St. Fond, mineralogist and geologist; born at Montelimart, 1750, died at So riel, near Valenci, July, 1819.

Sir Carles Blagden, English philosopher died at the house of Barthollette Arceuil, near Paris, March 26th, 1820, aged 80.

John Murray, Scotch chemist; died at Edinburgh, July 22d, 1820.

Gowan, the friend of Linnaeus and Jussieu; died 1821, aged 88.

Corvisart, distinguished European physician; died in France, Sept 19, 1821, aged 45. Alexander Metcalf Fisher, professor of ma-

thematics and natural philosopher in Yale College; born at Franklin, Mass., July 22d, 1794, perished in the wreck of the Albion, April 22d, 1822.

Rene-Just Hauy, mineralogist and honorary canon of Notre-Dame; born in l'Oise, France, February 28th, 1743, died June 3rd, 1822.

Schubert, philosopher; died at Philadelphia, October 22d, 1825.

Scipio Breislak, professor of physics and mathematics; born at Rome, died February 15th, 1826, aged 78.

Reichenback, European philosopher; died at Philadelphia, May 12th, 1826.

Mare-Auguste Pictet, distinguished savant of Geneva, Switzerland; died April 19th, 1826.

Joseph Fraunhofer, a skillful astronomical instrument maker; born at Straubing, Bavaria, March 6th 1787, died June 7th, 1826.

Bode, European philosopher; died November 23rd. 1826.

Pere Simon De La Place, the great French philosopher; born March 23rd 1749, died at Paris, March 5th, 1827.

Alexander Volta, the Italian philosopher; born at Como, 1745, died at the same place, March, 5th 1827.

Francis Alexander, (La Rochefoucauld.) Peer of France and member of the Institute died at Paris, March 27th, 1827, aged 81.

Chladni, European Philosopher; died April 4th, 1827.

Ramond, European philospher, died May 14th, 1827.

Fresnal, European philosopher; died July 14th, 1827.

William Philips, geologist and mineralogist; died at Tottenham, England, April 4th, 1828.

Dr. Wollaston, astronomer and chemist, born at East Dereham, England, Aug. 6, 1766, died Dec. 22, 1828.

Nathan Smith, professor of physic and surgery, Yale College; born at Rehoboth, Mass., September 30th, 1762, died January 26th 1829.

Thomas Young, physician, linguist, and mathematician; born at Milverton, Eng., June 13th, 1773, died May 10th, 1829.

Col. Jared Mansfield, professor of natural philosophy in the Military Academy at West the aperture, M, as will allow the fibres to ra-

M. Cherevix, French chemist; died in England, 1831.

Amos Doolittle, earliest American engraver; born at Cheshire, Conn., died Jan. 31st 1832, aged 78.

Abbe Angels Cesaris, first astronomer of the observatory of Milan, Italy, died 1832.

Barron Boissel de Monville, geologist and philosopher; died in France, 1832, aged 68. Geo. Simon Serullas, chemist; died in

France, 1832, aged 58. Auguste Duvau, French botanist; died 1832,

aged 61. Francois Xavier (Baron de Zach) "the dean being correct.

Deville and Meyraux, profs. of Natural History, died in France, 1832.

Scarpa, eminent surgeon; died at Pavia Italy, October 31st, 1832, aged 85. Gasper Spurzheim, phrenologist; born at

Longvich, Prussia, December 31, 1776, died at Boston, U. S., November 11th 1832.

Count Barbara Oriani, Italian astonomer; died at Milan, November 12th 1832, aged 80. [This subject will be completed in another

paper. It is very valuable information, and has been prepared with great care by an able scientific friend, and may be relied upon as

Oth of next October. The managers of the exhibition invite mechanics from all parts of the United States to contribute specimens of their productions, for which prizes of gold and ilver medals, and diplomas, will be awarded.

Notice.

The article on Hydraulics is necessarily delayed till next week.

LITERARY NOTICES.

PLYMOUTH AND THE PILGRIMS. By Joseph Ban-vard : published by Gould & Lincoln : Boston.—This is a very interesting little work, containing incidents of adventure in the history of the first settlers of New England. We are never tired of reading the adventures, the sufferings, and triumphs of those no-ble Puritans, who left their native land and came here to establish a home for themselves and children in the wildress and then die. It is very assure he a to establish a nome for themselves and children in the wilderness and then die. It is very easy to be a patriot now-a-days, for it costs nothing, but it was very different with the old ironsides and the early settlers of America. Every New Englander, no matter where he resides, should own this book.

HARPER'S New MONTHLY MAGAZINE, for July, is a splendid number; it contains beautifully engraved portraits of several of the most prominent patriots of 1776, besides a correct view of old "Independence Hall," "Liberty Bell," and fac-similes of the signa-tures to the Declaration. Accounts of Francis' Life Boats are given with eleven exquisite engravings. The matter, original and selected, is of the highest order, and compares favorably with any previous number. The enterprising publishers have placed this work, in the short space of one year, far in ad-vance of its cotemporaries. Its success is unprece-dented in magazinedom-pages, 144; engravings, 31; price, 25 cents. Harpers Bros., 82 Cliff st., N.Y.

NORTH AMERICAN MISCELLANY—A weekly maga-zine of choice selections from the current literature of this country and Europe. Published by A. Palmer \$ Co., No. 8 Barclay street, at \$3 per annum. The style of this work is handsome, and it is edited with great care and discrimination. On the whole, we doubt it it has a superior throughout the entire range of American weeklies.

HARPERS' NEW YORK AND ERIE RAILROAD GUIDE HARPERS' NEW YORK AND ERIE RAILROAD GUIDE Book, containing a description of the scenery, rivers, towns, villages, and most important works on the road; illustrated by 136 engravings from original sketches: 12 mo., paper, 50 cents; muslin, 621-2 cents. Having occasion, recently, to pass over this stupendous highway, we were luckily provided with a copy of this faithful daguerreotype of the road and its scenery, and can bear testimony to its general ac-curacy: as a matter of history the work will well pay perusal. Thegetting up is after the usual style of the famous house of Harper & Bros., 62 Cliffst.

SHAKSPEARE'S FOETICAL WORKS.—Published by Philips, Sampson & Co.; Dewitt & Davenport, New York, agents. No. 42, 43, and 44, in one volume, is issued : one more number completes the edition.

"Ecarte," or the Salons of Paris, by Major Richardson, is just from the press of Dewitt & Davenport, price 50 cents. The author tells a capital story alprice (ways.



INVENTORS AND MANUFACTURERS. The Best Mechanical Paper IN THE WORLD! SIXTH VOLUME OF THE SCIENTIFIC AMERICAN.

SCIENTIFIC AMERICAN. The Publishers of the SCIENTIFIC AMERICAN respectfully give notice that the SIXTH VOLVME of this valuable journal, commenced on the 21st of September last. The character of the Sci-ENTIFIC AMERICAN is too well known throughout the country to require a detailed account of the va-rious subjects discussed through its columns. It enjoys a more extensive and influential circula-tion than any other journal of its class in America. It is published weekly, as heretofore, in Quar-to Form, on fine paper, affording, at the , but of year, an *ILL USTRATED ENCYCLOPEDIA*, of over FOUR HUNDRED PAGES, with an Index, and from FIVE to SIX HUNDRED ORIGI-NAL ENGRAVINGS, described by letters of rof-ference; besides a vast amount of practical informa-tion oncerning the progress of SCIENTIFIC and MECHANICAL IMPROVEMENTS, CHEMISTRY, CIVIL ENGINEERING, MANUFACTURING in its various branches, ARCHITECTURE, ASONRY, BOTANY, --in short, it embraces the entire range of the Arts and Sciences. It also possesses ar Diginal feature not found in any other weekly journal in the country, viz., an Oficial List of PATENT CLAIMS, prepared ex-pressly for its columns at the Patent Office, --thus constituting it the "AMERICAN REPERTORY OF INVENTIONS." TREMS-\$2 a-year; \$1 for six months. All Letters must be Post Paid and directed to AMUNN & CO.,



IMPROVED MACHINERY FOR MAKING HAT BODIES.

improvements in machinery for making hat bodies, invented by Mr. Daniel Barnum, of Philadelphia, the patent for which has just been granted, and the claim will be found on our list of this week.

A represents the frame, with B, the picker. arranged and combined with feeding rollers and apron, as seen at K, and also with a chamber between the picker, B, and fan C, there being an aperture under the picker for the admission of air, the arrangement and operation of these several parts being substantially the same as one section of the common fur blower, except that the chamber is reduced in height. C is a small fan combined with the chamber and through which it receives its supply of air from the aperture under the picker, B: a current of air passing through the chamber is induced by the exhaust action of the fan, sufficient in volume and velocity to receive the opened fibres as they fall from the picker, B, and to concentrate them within the fan casing, from which they are suspended in the air surrounding the exhausted perforated cone, E, through a small square aperture, M, in lines forming tangents to the circle made by the fan. The casing of the fan, c, is made adjustable by means of the shaft, D, around which is seen a cord extending each way, the two ends of which are attached to different points of the casing, so that by turning the shaft, D, to the right and left, a circular vibratory motion is given to the entire casing, thus elevating or depressing the aperture, M, at pleasure. This arrangement gives perfect control over the distribution of the fibres upon the cone, by simply changing the position of the aperture, M, as the lines radiating from the fan through the small aperture, are thus made to embrace either the lower, the middle, or the upper portions of the cone, as desired; the cone, E, is placed at such a distance from

The accompanying engraving represent | combination with the currents of air, for the purpose of holding the fibres and of wettings them over the exhaust, and of actually commencing the felting process by a motion of the fibres in contact, under a pressure caused by the combined action of the currents of air and

water as they pass through the fibres into the exhaust; with these arrangements, the liability to damage the hat, by applying cloth and cones, to make pressure upon the fibres, to hold them while they are removed from the exhaust to immerse them, and in the removal of the cloth (which often takes off portions of the fibre and spoils the work) is entirely removed.

The palpable differences between these improvements and those which have preceded them, are-first, the use of the best known means for opening the fibres, to wit, the small wire picker-while in all previous machines inferior means have, as a matter of necessity, been used in order to obtain a current of air to carry the fibres through a long chamber or trunk. Second, the use of an exhausting fan combined with the chamber, for the purpose of concentrating the fibres by the action of the fan within the fan casing, instead of a large long chamber or trunk, gradually changed in form, for the purpose of concentrating them after they are suspended in the air; and, third, in suspending the fibres through a small square opening in the fan casing of less than one-fourth of the size of the cone, in tangents from the circle made by the fan, without any chamber or trunk, gradually changed to an aperture corresponding in shape, and higher than the cone as hitherto used, between the suspending fan and the cone, or any other means, to control or direct the fibres on to the cone after they are in the air; and fifth, in dispensing with the cloth and outer cones, to make pressure upon the fibres, and also with immersion in the hardening process, and the liability to damage resulting from such appli-

	Point: died at New Haven, his native place.	diate after leaving the aperture so as to fall	cation and immersion, and in the facility of	All Letters must be Post Paid and directed to	
- 11	Feb. 3rd. 1830. aged 71.	evenly upon that portion of the cone within	operation and perfection of the work.	Publishers of the Scientific American.	
	Stephen Elliott, philosopher: died in 1830.	the ranges or tangents from the fan. F is an	More information may be obtained by letter	128 Fulton street, New York.	
	at Charlestown S. C.	exhaust fan, having a rapid motion for the	addressed to Mr. Barnum, at Philadelphia.	INDUCEMENTS FOR CLUBRING	
	Sir Humphrey Davy the eminent chemist.	purpose of producing a partial vacuum under		Any person who will send us four subscribers for	
	have at Banzanas Eng. Das 17th 1779	the cone. E. G is a square box or reservoir	Maryland Mechanics' Institue.	six months, at our regular rates, shall be entitled	
	born at renzance, Eng., Dec. 17th, 1778,	of hot water placed under the cone E for the	The Fair of the Maryland Mechanics' In-	to one copy for the same length of time; or we	
	alea at Geneva, May 28th, 1830.	double nurnose of furnishing a supply of wa-	stitute will be held this in the new hall of the	10 copies for 6 mos., \$8 15 copies for 12 mos., \$22	
	M. Fourier, mathematician, died at Paris,	tar to wat the hat and also to receive the sur	Maryland Institute, an edifice now nearly	Southern and Western Money taken at par for	
	1831.	the set is a set of the set of th	completed and forming one of the most im-	subscriptions.	
	J.S. Miller, philosopher; born at Dantzig,	plus which passes through the perforations in-	completed, and forming one of the incertaint	PREMIUM	
	died in England, 1831.	to the exhaust. H is a rotary pump connect-	portant improvements and attractive reatures	Any person sending us three subscribers will be en-	
	Henry Browne, nautical philosopher; died	ed with the box, G. I is a perforated sprink-	of Baltimore. The building is 355 feet in	titled to a copy of the "History of Propellers and	
	in England 1831.	ler, with a flexible tube or hose attached to	length and 60 in width, and the apartment in	ing first appeared in a series of articles published in	
	Sir Thomas Lawrence, artist; died in Great	the pump, H; the object of the pump and	which the exhibition is held is 265 feet long,	the fifth Velume of the Scientific American. It is	1
Ψ	Britain, 1831.	sprinkler being to produce a steady current of	and the entire width of the building. It will	ever issued, and contains about ninety engravings-	i
	Francis Huber, naturalist, born at Geneva,	numerous fine jets of hot water to be used in	old about 6,000 persons. It will open on the	price 75 cents.	1
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