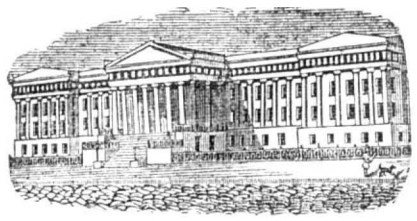

☞Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which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

LIST OF PATENT CLAIMS
Issued from the United States Patent Office.

FOR THE WEEK ENDING MARCH 25, 1851.

To Geo. Heffley, Samuel Conrad, and Jas. Wigie, of Berlin, Pa., for improvement in adjustable land sides of Plows.

We claim providing a right-angled heel plate with a hook, for the purpose of interlocking with a hook-shaped projection, attached to the land bar, forming a hook joint, said heel-plate forming the bottom and side of the land bar, and having its rearward portion susceptible of vertical adjustment, by means of a screw, and when adjusted being clamped by a horizontal screw bolt, its shank being placed in a segmental slot, to admit of its moving with the heel-plate, as described.

To C. W. Krebs, of Baltimore, Md., for apparatus for securing shutters in any required position.

I claim the right to the rods, pintles, sockets, screws, and apertures connected, arranged, and acting substantially in the manner and for the purpose described.

To Michael Norton, of Cambridge, Mass., for improved Sash Hook.

I claim the spring to throw the turning hook outwards, the spring-catch, G, (applied to the frame of the hook), and the projection, H, (extending either from the curved rail, or the lower window sash), in combination together, and with the said clamp hook and rail, the whole being made to operate substantially in the manner specified.

To Lewis Thorn, of Philadelphia, Pa., for improvement in Extension Tables.

I claim, first, the slides E and F, in combination with the cross-bars and folding rails; and second, the recess for the reception of the loose leaves; being formed substantially in the manner and for the purpose set forth.

To N. W. Speers, of Cincinnati, Ohio, for apparatus for moving and securing shuttles, etc.

I claim the manner of opening and closing window shutters from the inside, and securing them firmly at any point in their semi-circuit, by means of the horizontal screw shaft inserted in an opening in the lower portion of the window frame metallic nut surrounding the same, and the bar or plate attached to the shutter, substantially as described.

To R. C. Stevens, of Syracuse, N. Y., for improved apparatus for drawing and measuring liquids.

I claim the combination of measures with faucets, cocks, or gates, used in drawing liquids from can casks, barrels, &c., in such a manner, that, by opening the faucet attached to the cask, the measure will be filled; then, by closing the same, the desired amount may be drawn by opening the corresponding faucet in the measure; the whole combined substantially as described and for the purpose set forth.

To E. G. Lamson, of Shelburne, Mass., for improvement in Scythe Fastenings.

I claim the combination of the two wedge shaped bearers, the confining bolt, and the support at the extreme or other end of the shank, as constructed, substantially in the manner specified, the whole being for the purpose of enabling a person to change the positions of the blade of the scythe, in a direction transversely of the plane of the blade.

To Heman Whipple, of Port Richmond, N. Y., for improvement in machines for preparing clay for making brick.

I claim the use of a revolving screen, constructed of bars set at a slight inclination from the horizontal position, having lugs or crushers within it, each lug being hung or suspended at one end, on a bar, and prevented from touching or rubbing the screen, by a cord or chain attached to its other extremity, and rod, supporting it, or constructed and operating in any manner substantially the same and for the purpose herein set forth.

To Henry Klepfer, of Cincinnati, O., for improvement in upright Pianofortes.

I claim the arrangement of the sounding board in upright pianos between the strings and the performer, substantially in the manner described.

To Nathaniel Lamson, of Shelburne Falls, Mass., for improvement in Scythe Fastenings.

I claim the arrangement of the hole or holes of the head of the confining clasp, in such manner, with respect to the axis of the screw that when the said screw is turned one hundred and eighty degrees, the position or positions of the hole or holes, may be changed in such a manner as to secure one or more new and different positions for the shank, the same being for the purpose as specified.

To F. B. Stevens, of New York, N. Y., for improvement in Balanced Valves.

I do not claim, as my invention, valves having seats of such relative diameters, that they shall be retained thereon by the pressure of steam; but I claim the above description of valve, where the disc is held by a support running up through the hollow valve, so forming the valve that the upper seat shall be larger in diameter than the lower one, by means of the ring attached to the valve, and by means of the ring attached to the seat, or by any means substantially the same, for the purpose of retaining the valve in its seat, by the pressure of steam, whenever its position or location, in respect to the steam passages, is such that the pressure of steam is below the valve when closed.

RE-ISSUES.

To Horace Billings, of Beardstown, Ill., for Composition for covering Hams. Originally patented 9th April, 1850.

I do not intend to claim as my invention the covering of meats or other articles, with paper and cloth, or other flexible material, previous to coating them with my preserving composition; but what I claim is the formation of a preserving composition for coating meats, cheese, fruits, vegetables, &c, by the union of rosin, shellac, or seed lac, and linseed oil, or other oil of a similar nature, substantially in the manner and in nearly the proportions as set forth.

To James Phelps, of West Sutton, Mass., for improvement in Washing Machines for cleaning rags. Originally patented Nov. 24, 1843.

I claim an adjustable, rotating water elevator and strainer, arranged substantially as herein set forth, in such manner that it can be raised or lowered in the vat of the washing or beating engine, to vary the quantity of water discharged therefrom; or can be raised entirely from the vat to stop the discharge of water, or for other purposes, as set forth.

I also claim a rotating prismatic screen or strainer, for straining the water from the paper stock, in the vat of a washing or beating engine, in combination with devices for discharging the strained water, the prismatic screen being not only more efficient than a cylindrical screen, but also admitting of more ready repair.

DESIGNS.

To Wm. & Wm. H. Lewis, of New York, N. Y., for Design for Pedestals and Columns.

To Joseph Pratt, of Boston, Mass., for Design for Parlor Grates.

Beware of Eating Red Wafers.

A coroner's jury, in London, lately held an inquest on the body of a child, 9 years old, who came to his death in the following manner:—The deceased was playing in the street with other boys, when, seeing some bright red wafers lying before the door of an oil-shop, they tasted them, and subsequently ate some. All the lads were taken ill, and deceased, who had eaten more then the others, died. The wafers contained red lead, and the symptoms of the boys' illness were those which ordinarily follow poisoning by that metal. The jury returned a verdict of "Accidental Death," with an admonition to the tradesman from whose shop the wafers had been incautiously swept.

(For the Scientific American.)

Practical Remarks on Illuminating Gas.

A lack of general knowledge in a large portion of our community, pertaining not only to scientific, but to matters of universal daily use, is very evident; and a want of inquiry into the causes of the phenomena of the events which are constantly transpiring before us, is likewise very apparent. The most trivial effect has its cause, although it may appear at first enveloped by a seemingly impenetrable cloud of obscurity, still upon a little wise reflection, to every cause can be assigned an effect, and every effect can be traced to its own legitimate cause.

In the present article it is attempted to include such an account as the limits will permit, of the principles and the processes of the manufacture of gas for illuminating purposes.

If the various inquiries, made by many in the community, are any criterion by which we may judge of the tenor of the information of the mind upon this subject, it is time that a practical work should be placed within the means of every person, and particularly such as are now deriving the benefits of this great blessing. The want of a general knowledge and understanding of the principles of illuminating gas, is forcibly and truthfully shown by the ease with which people are led away by new lights (and I may say, too, false lights) which are brought before an unwary public, either from a speculative motive, or to gain notoriety, or perhaps by individuals, who, having more zeal than knowledge, are wrought into a false belief, by tenaciously clinging to what they consider their own new ideas. To aid in the more general diffusion of practical knowledge is the writer's aim, and if he should succeed in adding one thought to any person's vocabulary of wisdom, from whence a single new idea may germinate, his object will be fully gained.

It is within the memory of nearly all of us when the principal streets and avenues of our city were *supposed to have been lighted* by oil at night, and travellers were obliged to grope their way among these now-luminous objects, which seemed to render the darkness more visible, and the surrounding gloom served as an admirable covering, under which depredators could operate unseen and undetected. But now, when we look around us and see the great change which has been brought about through the influence of men of science and ingenuity, and are permitted to pursue our various vocations under the influence of this genial and cheerful light, ought we not to feel greatly indebted to the highly gifted and enterprising individuals by whose talents and industry, so great a blessing has been conferred upon society. And it is to this blessing, this new light, I would call the reader's attention.

The term *Gas*, in chemistry, synonomous with air, is employed to signify any elastic, invisible, aeriform fluid, permanent at the common temperature of the atmosphere, and not wholly condensable by any known degree of cold, natural or artificial. Animal and vegetable substances contain embodied within themselves gas; and all matter of a fatty, resinous, or bituminous nature, contains carbon and hydrogen, which become liberated when the substance is decomposed by heat, and form a new combination; this new combination is composed of 1 atom of carbon and 2 atoms of hydrogen, its atomic formulæ, therefore, would be $C+H^2$, and is termed carburetted hydrogen gas. Carbon, literally speaking, is the base of all illuminating gases, its richness and value being wholly dependent upon it. Before we proceed farther, it may be well to look into the nature of these two constituents, in order to have a perfect understanding of these important elements, and thereby to become familiar with their properties.

CARBON—This substance is very generally diffused in nature; all animal and vegetable substances contain it as do many of the minerals, either in the form of carbon or carbonic acid, free or combined. In charcoal, soot, coke, and animal carbon, it is black, amorphous, and very combustible; in graphite it is black, with a chrystallized foliated structure; and in the diamond it occurs diamorphous, colorless, and is chrystallized as a four-sided double pyramid (octahedron). United with oxygen it forms carbonic oxide, and with still more oxygen, carbonic acid. Carbon exists in all varieties of natural coal, bitumens, petroleum, and naptha; and in the form of carbonic acid, is contained in limestone, chalk, and various other minerals.

HYDROGEN—This substance was discovered in the year 1776, by Cavendish, and was formerly called inflammable air; its name is derived from two Greek words, signifying *water* and to *generate*. It is the lightest of all ponderable matter known, 14½ measures of it weighing only as much as 1 measure of atmospheric air. It is colorless and, when perfectly pure, inodorous; it is inflammable in an eminent degree, though, like other combustibles, it requires the aid of a supporter of combustion. It is attended with a yellowish blue flame, and a very feeble light. United with oxygen it forms water, and in the same proportions it is, in the aeriform state, an exceedingly explosive compound.

The first account which history affords of the knowledge of the existence of illuminating gas appears to be in the year 1664, when Dr. Clayton made known that combustible illuminating gas was produced during the decomposition of coal by heat; and that this could be collected. It was observed and experimented on, a century after, by Drs. Hales and Watson.

Lord Dundonald built some coke furnaces in 1786 and amused himself by collecting the evolved gases in tubes and burning them, but without any definite object.

Since the year 1792, another Scotchman by the name of Murdoch, to whom we are indebted for the invention of the useful application of gas, occupied himself incessantly with experiments up to the year 1796; which efforts were crowned, in 1798, by the erection of gas works for illuminating the manufactory of Boulton and Watt. Independently, and about the same time, Phillip Le Bon, a Frenchman, succeeded in illuminating his house by an apparatus in which he evolved the bad gas from wood (probably a mixture of carburetted hydrogen, carbonic acid, and carbonic oxide gases). The first establishment for the manufacture of coal was erected in London in the year 1805. In the year 1808, Mr. Samuel Clegg constructed an apparatus for producing gas, and communicated to the Society of Arts in Manchester; and a silver medal was voted Mr. C. for his communication. Mr. Murdoch, the same year, made a communication on the subject of gas-light to the Royal Society, and was complimented with Count Rumford's Medal for the same. Gas was employed for street illumination in London in the year 1812, and in Paris in the year 1815. In 1823 there were four large gas companies in London, having in all forty-seven gas holders at work, capable of containing 917,940 cubic feet of gas, and were supplied by 1315 retorts, which generated, per annum, 397,000,000 cubic feet of gas; by which 61,203 private lamps, and 7,268 public or street lamps, were lighted in the metropolis. From that time to the present the formation of new companies, the erection of extensive manufactories, and large expenditures, have become requisite to meet the increasing demand of the citizens for this highly desirable and economical light. At the present time the annual consumption of gas in the city of London is 3,000 million cubic feet; equal to about from 50,000 to 60,000 tons.

J. B. B.

(To be Continued.)

Fresh Water Frozen Beneath the Sea.

Fresh water was found frozen into solid ice in the lead which conveys the Cochituate water under the sea water of Boston Harbor to East Boston, and which pipe is 36 feet below the surface of the water. The explanation of the phenomena is, that fresh water freezes at 32 deg. F., while sea water requires a reduction of temperature 4½ deg. lower, or to 27½ deg., before it solidifies. Thus, the salt water was doubtless cooled, below the freezing point of pure water, and conducted away the heat from the lead pipe, so as to lower its temperature sufficiently to cause a film of ice to form on the inside of the pipe, and by successive layers of ice the pipe was gradually filled.

TO CORRESPONDENTS.

W. P., of Ill.—You are well aware, we suppose, that the air engine, acting nearly on the principle you describe, is older than the steam engine; you have only looked to the pressure of the air to assist in one direction, while it resists to the same amount in the other direction, and nothing is gained, and nothing lost, to be sure. The air-tight cylinder was one of the grandest improvements ever made on the steam engine.

T. J. J., of N. Y.—A wedge rail and grooved wheel has been long known; they were used before the T rail. They do not answer at all. This same plan was proposed by Mr. French, of Va., for steep inclines. In your plan for engraving, the whole work would have to be done on the wax, as carefully as on the clean wood. This would take as long, as the wood is very easy to work. The plan is the same as that for etching copper-plates.

J. L. P., of Phila.—The galvanizing of the iron is to cover it with zinc. Clean the iron well, then have the zinc melted in an iron vessel, and put in some salamoniac and tallow, then dip in your plates. We do not know the establishment where the galvanizing is carried on.

J. L. B., of ——.—We do not know what would be the price of the agricultural analyzing apparatus to which you refer, nor where it could be found. The best works on the subject of Agricultural Chemistry, are those of Johnston, Norton, and Liebig. Get those and you can do all the rest. We will try and fulfil your request at some future time.

W. P., of Mich —It is indeed true that you can destroy the equilibrium of pressure in a water box, by the inequality of the surface so as to produce motion on the side of the greatest pressure, but what amount of motion do you get? Any more than you give? No. There is no new power called into existence, and none but what is well known. We could not advise you to go to any more expense, for no ultimate benefit will result from the same.

C. J. M., of Ohio.—Yours next week.

V. K. of ——.—The depilatory powder to which you refer is not sold in this city. We could not speak personally of its merits. It does not at least remove the hair permanently.

J. E., of Ohio.—Its density is uniform throughout, but for railroad purposes it has been tried—and faithfully tried—and found unfit for the purpose.

A.B.G., of Ct.—Euclid is the best work you can get.

W. S., of Pa.—Gun-flints are all made by hand: we could give you the description, but it is too long to give here. The process is described in Barlow's Encyclopedia.

H. & W., of Andersonville.—We omitted to state in our letter, a few days since, that the $1 bill enclosed in yours of the 10th, was good; it was passed to your credit.

S. S., of Phila.—Geo. Bruce resides in this city and carries on an extensive type foundry.

D. B., of Mass.—We do not understand the advantages likely to arise from your plan for propelling canal boats over some others; neither do we see any patentable novelty in it to justify an application.

J. P G., of Me.—The elements in your machine for governing the water in steam boilers seem to be good, but this can never be satisfactorily determined without the aid of experiments, which must be made to satisfy yourself and others interested. There appears to be novelty in the arrangement which could be made the subject of a patent.

C. R., of Ill.—There is nothing so durable for the purpose as Roman cement. $1 received.

M. M., of Wis.—The proper way for you to obtain the desired information is to address a letter to the Commissioner of Patents, Washington, D. C., he will give you the information: no one else can.

X. Y. Z., of Mass.—We cannot give the information you ask for.

J. M J., of Me.—Such a machine as you refer to was patented some time since, by Joseph Graume, of Cincinnati, Ohio. The price, &c., we cannot give, but presume it can be obtained by addressing him as above.

T. B., of New Haven.—The price of Brewster's Optics, we think, is one dollar. It is the best work upon the subject up to this time.

R. B., F., of N. Y.—Pocket microscopes can be had for prices varying from $1 to $25; a good one can be obtained for $12. John Roach, 79 Nassau st., has them for sale. $1 received.

O. A. J., of Vt.—We have forwarded two copies of the Scalpel, as you directed.

H. E., of Cincinnati.—You could not obtain a patent for the sliding letters; they have been used before, and were made the subject of a patent some years since.

A. E. C., of Miss.—The circumstance you mention is not at all surprising or unusual: by reference to page 418, Patent Office Report, for 1849, Dr. Page mentions the fact that a patent was granted for one species of atmospheric churn, and before the fact could have been known far beyond the walls of the Patent Office, six inventors from different parts of the country were all pressing their claims before the Office for the same contrivance; cases of this kind have come under our own personal observations.

E. C., of La.—We can scarcely imagine how you are to accomplish the object you propose; it is contrary to the laws of chemical affinity. We think you will be disappointed in the end.

F. V., of Mich.—Your method of attaching the single wheel to the Cultivator could not be patented; contrivances for this purpose have been used before, and in a manner substantially similar to yours. We cannot encourage you to spend money upon an application.

A. H., of Mo.—The arrangement of the brushes we do not think could be secured by a patent. Some machines have been brought forward for cleaning streets where the dirt was all taken up and placed in a receptacle—none seem to have been effectual up to this time. We entertain the opinion that yours would not obviate a single difficulty not attained by Bishop's machine; neither can we see how a valid claim to a patent could be based.

C. A. C., of Md.—It would cost you about $300, by packet, to visit the World's Fair and remain three or four weeks, we should think; about two months would be consumed in going and coming.

J. L. M., of Ala.—The improved Corn Sheller belongs to Carter & Harris, of Yorkshire, N. Y., and is good, the price we cannot give. The "Refrigerator" is a good article, but as yet we have not heard of its being brought into the market. Messrs. Geo. Vail & Co. manufacture the horse power of Mr. Bogardus. Some improvements have been made whereby the friction is lessened, and is now, perhaps, as good for 4 horses as any in use: it is much used for cotton gins. James Stewart, of this city, makes good turning lathes at prices varying from $25 to $100. N. Hunt & Co., 110 Water street, Boston, are sole agents for Swingle's Patent Mortising and Boring Machine, price $125. Small sized mortising machines for light work can be had for $20.

W. L. L., of Pa.—The work to which you refer has been discontinued. Engineers and railroad companies would not support it.

M. S., of Ct.—Next week we will present to our readers an engraving of the Wind Mill.

W. F., of Boston. There are a number of engravings required to illustrate the welding process: they are now in the hands of the engraver.

J. C. H., of Miss.—We do not know where or at what price, such springs could be had as you require; H. H. Day, of this city, could make an india rubber one we should think. If such an one would answer your purpose you could address him upon the subject.

Money received on account of Patent Office business since March 26:—

E. B, of N. Y., $700; M. C. B., of N. H, $15; W. & B. D., of Ct., $30; G. B. C., of N. Y., $55; C. F. B., of R. I., $40; G. H. R., of Ill., $30; W. H. H, of N. Y., $20; J. C. B., of Ark., $30; A. G. D., of Ct., $45; W. G., of N. Y., $10; G. B. W., of N. Y., $10; T. & G., of N. Y., $30; H. & E., of N. Y., $30; A. S. B., of N. Y., $55.

Specifications and drawings of inventions belonging to parties with the following initials, have been forwarded to the Patent Office since March 26:

W. & B. D., of Conn.; G. W., of Mass.; B. & M., of N. Y.; W. G., of N. Y.; I. B L., of Vt.; S. G. S., of Ga., and A. G. D., of Ct.

Patent Claims.

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