

Recent American and Foreign Patents.

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

SEAT FOR VEHICLES.—Lewis Pray, Portland, Me.—The object of this invention is to provide a movable folding seat for buggies and other light vehicles where it is frequently desirable to economize space.

FURNACE.—T. J. Leigh, London, England.—This invention relates to certain improvements in furnaces, and in effecting the combustion of fuel therein, whereby several advantages are obtained over the ordinary furnaces in use.

AUTOMATIC CROSS-FEED FOR LATHES OR BORING MACHINES.—Lewis Griscom, Mahanoy Plane, Pa.—The object of this invention is to accomplish the cutting of tapers on shafts and the boring of the corresponding tapering hole for the reception of the tapered shaft in a simple, accurate, and automatic manner.

FRUIT BUTTER STIRRER.—M. G. Collins, Baltimore, Md.—The frame which supports the stirring apparatus, and to which the lids are hinged, is attachable by thumb screws to the rim of the kettle. The stirring devices consist of a crank shaft, bevel pinions, and a vertical revolving shaft with arms.

CAR AXLE BOX.—A. H. Nathans and M. Thornton, Macon, Ga.—This invention is an improvement upon the axle box patented by D. H. Dotterer, April 8d, 1866, and consists in so constructing the spring packing plate used in his invention, that the oil cannot escape from the box, whereby the value of the whole device is greatly enhanced.

FLOW.—Thomas P. Warren, Norfolk, Va.—This invention relates to the plow patented by Warren and Woodhouse, on the 18th day of June, 1867, and consists in a new form and construction of the guide used in connection with the landside, and in a new method of attaching the moldboard to the standard, by which the parts are rendered more completely adjustable and the cost of construction is greatly reduced.

HAY AND COTTON PRESS.—Grey Utley, Charlotte, N. C.—In this invention the form of the press box and platen is the same as that now in common use, but by a new arrangement of guide rods for the platen in connection with a novel clamp and hand levers, the press may be operated by hand more rapidly and with greater advantages in regard to the application of the power and its full utilization than any of the hand or power presses now in use.

CORN PLANTER.—John Ellbertson, Kirksville, Mo.—In this invention the corn is planted by an instrument, which can be carried in one hand and used in the manner of a cane. The device is intended to facilitate the work of planting or dropping the seed, and to obviate the necessity of stooping for that purpose.

APPARATUS FOR MAKING CARBONATE OF LEAD.—Otto Jacobl, Philadelphia, Pa.—This invention relates to an apparatus for converting, by the action of acetic and carbonic acids, lead into carbonate of lead. The invention consists in combining with a converter in which the lead is contained, a vinegar making apparatus and a furnace, all acting in conjunction with each other, the heat of the furnace causing the vapors to arise from a vessel containing vinegar mash, and to travel to the vinegar apparatus, whence the acetic acid arises into the chamber or chambers that contain the lead, converting the lead or its outer faces into acetate of lead. Carbonic acid is then conducted into the converter to transform the acetate into carbonate of lead.

FLOUR SIFTER.—Johann Nowak, New York city.—This invention relates to a flour sifter to be especially used by bakers, its object being to facilitate the process of sifting the flour and to economize labor.

LINIMENT.—William P. Hamlin, Exira, Iowa.—The object of this invention and discovery is to provide an effective and sure remedy for wounds and bruises, and for most of the pains with which mankind are afflicted.

PROCESS IN MANUFACTURING BILLIARD BALLS.—William H. Lippincott, Pittsburgh, Pa.—This invention relates to the manufacture of balls used in playing billiards, baggabelle, and other games where globular balls are employed, and the invention consists in forming such balls of vulcanized India-rubber.

AMMONIATING SUPERPHOSPHATE OF LIME.—John S. Ramsburgh, New Market, Md.—This invention consists in ammoniating superphosphate of lime in such a manner that its fertilizing qualities will be preserved when the same is exposed to the atmosphere.

FINGER FOR SHUTTLE STOP MOTION FOR LOOMS.—E. S. Laney, Waterloo, N. Y.—The nature of this invention relates to improvements in fingers for shuttle stop motions for looms, whereby the same are made less liable to get out of proper position on the oscillating rod which actuates the touch off fingers, by reason of the sudden shocks and strains to which they are exposed from the action of the shuttle.

MACHINE FOR MAKING PAPER PULP.—Warner Miller, Herkimer, N. Y.—This invention relates to an improved mode of operating the followers, whereby the wood to be ground is pressed against the periphery of the stone, a positive mechanical device being used in the original patented machine, but in this springs or weights are employed, so arranged and applied that the machine is greatly simplified, and made to operate in a more perfect manner. It also relates to an improvement in the screening apparatus, whereby the pulp is not only deprived of all coarse, foreign substances, but also separated or divided into two or more different qualities with respect to the length and diameter of its fiber, whereas the original machine separated the pulp with respect only to the diameter of its fiber, and the different parts thus separated discharged from the machine at separate points, so that they cannot mingle with each other.

LAMP BURNER.—Wm J. Ross, Worcester, Mass.—This invention relates to a lamp burner, and it consists in the application of vents or tubes to the burner or socket thereof, for the purpose of admitting external air into the lamp and preventing explosions, now due to the accumulation of vapor or gases in the lamp, above the oil. It also consists in a novel and improved means for raising and lowering the wick, and in an improved fastening for securing the chimney to the burner; and finally, in an air guide constructed in such a manner as to prevent or conduct the air to the flame, and cause the latter to burn in the most favorable manner, both as regards form or shape and illuminating power.

LOADING HAY AND GRAIN.—S. R. Higgins, Parma, Mich.—This invention relates to a machine to be attached to a wagon or cart for the purpose of loading the same with hay or grain as it is drawn over the field.

WHEAT DRILL.—James W. Davidson, Mount Auburn, Ill.—This invention has for its object to furnish an improved machine for sowing wheat or other grain in drills, which shall be convenient and accurate in operation, and which shall cover the grain at a sufficient depth beneath the surface of the ground to protect it from the winter.

CHART OR MAP ROLLER.—E. L. Hagar, Empire City, Col. Ter.—This invention relates to a roller for maps or other similar charts, and it consists in arranging the roller therefor within a case, that is suitably constructed to allow the map or chart attached thereto to be rolled up or unrolled at pleasure through and by means of cords and tassels, or other suitable devices, the case enclosing the charts when rolled, and protecting them from becoming soiled or injured.

STUMP MACHINE.—Isaac J. Bogert, Fayette, Iowa.—This invention has for its object to furnish an improved machine for pulling stumps, raising and moving heavy weights, etc., which shall be simple in construction, easily operated, and powerful in operation.

PALLET FOR WATCHES, ETC.—Charles E. Mason, Elgin, Ill.—This invention relates to a novel manner of inserting the jewels or pallets in the block or stud provided for them.

COMBINED BEDSTEAD, CHAIR, SECRETARY AND WARDROBE.—Wm. Reckards, New York city.—This invention relates to a combination of a bedstead, chair, secretary and wardrobe, and it consists in a novel construction and arrangement of parts, whereby the device may, by a very simple manipulation, be converted into any of the articles above mentioned, and when not in use be capable of being adjusted or folded up to represent a book case, or other similar piece of furniture.

ANNUNCIATOR FOR HOTELS, ETC.—N. A. Patterson and H. T. Carr, Winchester, Tenn.—This invention relates more particularly to an annunciator for hotel purposes, though the same mechanism and principle may be applied to other buildings, as large publishing houses, manufactures and stores. It consists of two corresponding dials, on which are written, engraved, raised, printed, or painted, the wants or orders common in whatever building or business the annunciator is designed to be used.

LAMP BURNER.—Gilbert Lavere, Bridgeport, Conn.—This invention consists in the combination of two chambers forming an essential part of a burner for petroleum lamps, together with other devices perfecting the whole.

POLE TIP.—Alonzo Benedict, Albany, N. Y.—The object of this invention is to provide a metallic tip for the tongues or poles of carriages, which will not strain the leather of the neck yoke to so great a degree, nor distort the same to so great an extent as the pole tips heretofore used, and which will enable a lighter and neater neck yoke leather to be used.

APPARATUS FOR OPERATING HORSE HAY FORKS.—George M. Robinson, New Wilmington, Pa.—This invention has for its object to furnish an improved device for supporting and holding the fork while carrying a fork-load of hay to the mow and while returning empty for another load.

EXTENSION TABLE.—De Lance Cole, Marshall, Ill.—This invention has for its object to furnish a simple, inexpensive, convenient, and substantial means for enlarging or extending an ordinary breakfast or dinner table to any desired size or extent.

SPRING SEAT FOR SADDLES.—Robert J. Steele, Jr., Rockingham, N. C.—This invention has for its object to furnish an improved spring seat for saddles, which shall be so constructed and arranged as to be easy and comfortable to the rider, however rough may be the horse's gait.

PERPETUAL CALENDAR.—Charles T. Pooler, Deansville, N. Y.—This invention relates to a calendar which is so arranged that it can be used continually to record the days of the week or month and that the days of the week can be set over the figures of each month in such a manner that the device is applicable for each year.

TOBACCO PIPE.—Henry G. Dayton, Maysville, Ky.—This invention relates to a tobacco pipe which consists of an outer bowl, without a bottom, and of an inner bowl that fits into the outer bowl, and that is, by the tube projecting through a perforation into the inner bowl, held in place.

ADJUSTABLE COUCH.—Godfrey Widmer, New York city.—This invention relates to a couch which is provided with an adjustable head rest, so that it can be adapted to any desired position of the body. The invention consists of a longitudinally and transversely adjustable frame, upon which a sheet of canvas or other fabric is stretched, and of a frame swinging within a fixed frame and projecting above the same, so as to elevate the canvas and to form the head rest of the couch.

WATCH.—Charles Springer, Newcastle, Pa.—This invention consists in applying about and around the standing collar surrounding the winding arbor, a center square which moves the hands, or both, of a watch movement, for instance, of that class known as the "American," an adjustable grooved collar, having a suitable packing medium, to form a tight and close joint when the watch is shut, with the case thereof, and thus exclude the entrance of dirt to the interior mechanism of the movement.

BAIL EARS FOR PAILS.—Jonathan Walton, Brooklyn, N. Y.—This invention relates to an improvement in bail ears for wooden and sheet metal or tin pails, and it consists in constructing the ears of wire bent in proper form and attaching them to the pail either by clinching or by soldering.

CORN PLANTER.—A. J. Going, M. D., Clinton, La.—This invention relates to a machine for planting corn and other seed, such as peas, rice, etc. It is an improvement on that class of seeding machines in which a rotating wheel provided with seed cells in its periphery is used for a discharging device. The invention consists in a peculiar application of a small metallic plate, whereby the seed cells of the wheel, as they rotate and pass from underneath the hopper, are cut off from the grain or seed contained in the latter, so as not to have the seed cut, bruised, or injured in the least.

AERIAL NAVIGATOR.—Zephna Stone, Kinsman's, Ohio.—This invention relates to a device for navigating the air, and it consists in constructing a balloon in a novel way, whereby it may be made to rise and descend at the will of the operator or navigator, and be under the complete control of the latter.

CORN PLANTER.—Wm. H. Fish, Scarsdale, N. Y.—This invention relates to a device for planting corn and other seed in hills, and it consists in a novel construction and arrangement of certain parts, whereby the seed may be dropped regularly at proper intervals.

WATER INDICATOR AND ALARM ATTACHMENT TO STEAM BOILERS.—Thomas Flinn, Brooklyn, N. Y.—This invention relates to a device for indicating the height of water in steam boilers, and for sounding an alarm if the quantity of water should rise or fall in the boiler beyond the required limits. The invention consists in the use and combination of a cylindrical vessel, which is screwed or otherwise secured upon the boiler, with a rod which is supported by a float above water, and which fits into the cylindrical attachment, having a pin by means of which the height of the water will be indicated on a graduated scale arranged on the cylindrical vessel.

SUSPENSION BRIDGE.—Edward M. Carpenter, Middletown, N. Y.—This invention relates to a suspension bridge which is so arranged that it can always be held tense, and that it does not depend upon the construction and strength of the top and bottom cord. The invention consists in making each of the uprights of the bridge of two pieces, which are not at all connected with each other, and between which from above a wedge is inserted, which drives the upper ends of each pair of uprights apart, thereby stretching all parts of the whole bridge frame, and producing the desired arch.

SPOOL HOLDER.—A very neat contrivance for holding spool cotton is the invention of G. A. Priddyham, Newark, N. J., patented Jan. 28, 1868. Spools of various numbers of thread are placed in a row inside a plated holder, the size being engraved on the outside of the case, so that any required number may be tried by the seamstress without taking the spool from the case till the thread is used up.

DOOR BOLT.—G. A. Priddyham, Newark, N. J., patentee.—The advantages of this invention are that it is impossible for the bolt to be moved except by the knob on the inside of the door. This knob combines a screw fastening, which is forced against the bolt after it is operated, and holds it firmly in place, so that it cannot be forced back from the outside. J. H. Jilison, general agent, corner of Walnut and Mulberry streets, Newark, N. J.

THAWING OUT FROZEN WATER PIPES.—William Young, Easton, Pa.—The object of this invention is to provide means for readily thawing out the ice in water pipes when they become unserviceable from freezing, and also to be used for other purposes of a similar nature, and the invention consists in the use of steam for that purpose in the manner described.

FURNACE FOR THE MANUFACTURE OF CAST STEEL.—Francis Eilershausen, Montreal, Canada.—This invention relates to a furnace for the manufacture of cast steel from pig iron, in conjunction with wrought iron or iron ore, and for the purpose of smelting blistered steel in large quantities, and for remelting metals in general. The invention consists in the novel combination of two fire chambers, which are separated by a bridge; a large crucible being set up in one chamber, the fire in which chamber surrounds the crucible, while the other is a reverberatory fire chamber, by means of which the heat around the crucible is brought to an extreme degree.

VENTILATING COOK STOVE.—Luther M. Parsons, Waukau, Wis.—This invention relates to a method of ventilating a room and of supplying the necessary air to the burning fuel, and it consists in arrangement of flues, dampers, and pipes, whereby the impure air in the upper portion of a room is made to supply the fire, thereby preventing the current of fresh and healthy air which flows toward the stove on and near the floor to supply the draft from being drawn off, but retaining it for purposes of respiration.

HEMP BREAKING MACHINE.—J. S. Hoskins, Spring Hill, Mo.—This invention relates to a hemp breaking machine, and consists of a main frame on which are set two rollers on the peripheries whereof are a number of sharp pins similar to the hackle teeth of hackling cylinders.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$10 a line, under the head of "Business and Personal."

All reference to back numbers should be by volume and page.

R. A. D., of Fla., asks the amount of feed per certain number of revolutions of a circular saw working in hard Florida pine. "Doctors disagree" in this matter. A good manual on sawing is Parson's "Sawyers Companion."

F. W. W., of Md., asks if "a small boat twenty feet in length, if built for the purpose, can be propelled with less exertion by a propeller wheel than by two oars, and what should be the pitch and number of blades." Experiment alone can determine the relative value of oars and screw under such circumstances. There are, however, several objections to the latter on a small boat, apart from the question of relative speed or ease of propulsion.

E. H. B., of Mich.—The Watt formula for horse-power of a steam engine can be found in Multhead's "Life of Watt," and that and the difference between nominal and indicated horse-power has been repeatedly shown in our columns.

Business and Personal.

The charge for insertion under this head is one dollar a line.

Two sets superior iron-frame cards, 48-in. breakers, 40-in. finishers, one 30-in. double-cylinder roll card, one 24-in. do., one 200-splindle jack. For sale cheap. Apply at Union Iron Works, Rinebeck, N. Y.

Wanted—the address of every canvasser in the United States. Send two stamps to P. & K., Box 239, Cincinnati, Ohio.

I desire to buy a popular patent for the State of New York. Address A. Roberts, Box 2931, Buffalo, N. Y.

For Improved Lathe Dogs and Machinists' Clamps, address, for Circular, C. W. Le Count, South Norwalk, Conn.

Brick Machine.—Laffer's New Iron Clad has more advantages than any other ever invented. For descriptive circular address J. A. Laffer & Co., Albion, Orleans county, N. Y.

Broughton's graduating lubricators for steam engines cannot leak, and are the only reliable ones.

Manufacturers of W. H. Culf's patent pump send card and price list to R. C. Vanderford, Centralia, Nemehar county, Kansas.

Funston's electric toy.—See advertisement.

Mill-stone dressing diamond machine, simple, effective, and durable. Also, Glaziers' diamonds, and for all mechanical purposes. Send stamp for circular. John Dickinson, 64 Nassau st., New York.

For Sale—Eight new portable steam engines, thirty horse-power each, of superior construction. Address Poole & Hunt, Baltimore.

First class lock makers wanted. Address Jones & Nimick Manufacturing Co., Pittsburgh, Pa.

Make your patents pay!—J. H. White, Newark, N. J., will make and introduce to the trade, all descriptions of metal goods.

Olmsted's oilers—the most durable and convenient made. Sold by all dealers from Canada to California.

H. F. Speer, Rockport, Ind., wishes to purchase a small locomotive similar to the one described in this paper April 4th.

Broughton's standard oilers are the only really first-class oilers.

Volumes, numbers, and entire sets of Scientific American for sale. Address Theo. Hagar, Box 773, New York city Postoffice.

Agents wanted for Allison & Co.'s iron cement. It will stick anything together, and is not affected by water. A sample bottle will be sent, postpaid, to any address, on receipt of 25 cents. Allison & Co., Box 118 Sing Sing, N. Y.

Joseph Anzer, Box 762, Ashtabula, Ohio, wants an endless screw 3 1/2 inches long, and worm, 16 to 18 inches diameter, center bore 1 1/2 inches.

Winans' Incrustation Powder, (11 Wall st., N. Y.) A positive remedy for scaly boilers, warranted effective and uninjurious. 20,000 refs.

NEW PUBLICATIONS.

MAP OF THE UPPER PART OF NEW YORK CITY, including a Topographical View of the Central Park. Hamilton E. Towle, C. E., City Surveyor.

This is an elegant pocket map of that portion of New York extending from a point two blocks below the southern end of Central Park to Spuyten Duyvil Creek, the upper or northern boundary of the city, with a representation of the proposed "west side" improvements, and correct plans of the Central Park and other reserved territory, with a route of the avenues and the proposed new Boulevard, all made from actual surveys and drawn to scale. It is the clearest, most definite, and comprehensive map of that portion of the city, except the one attached to the Central Park Commissioners' Report, we have yet seen, and will give the citizen as well as the stranger a correct idea of different points, and serve as a valuable guide to persons desiring to purchase desirable lots in this Babylon of the Western Hemisphere. The map is produced in colors by the American Photo-Lithographic Company, and may be obtained of the publisher, 78 Cedar street, New York city.

CENTRAL PARK REPORT.

We are indebted to Andrew H. Green, Esq., Comptroller, for a copy of the report of the Board of Commissioners for the year, 1857. It comes to us copiously illustrated with cuts and maps, showing the progress made in various works in charge of the Board. The expenditures for the year in construction amount to \$199,264.06. A statement of the works completed during the year comprises many details of interest to the visitor to the Park, but which we have no space to describe. Many structures of rustic work, harmonizing well with the natural surroundings have been completed. The children's shelter is the most extensive example existing of this class of wood work. Experiments have been made for several years with cement, asphalt, concrete, and pavements of various sorts, none of which have proved entirely satisfactory, though some have developed valuable qualities. Several pieces of work were laid in the Park during last fall with a composition of tar gravel, and cement. The materials have been put down in several different methods on the Park in various localities, and with a variety of substructures, for the purpose of testing their merits. On the whole the Central Park annual reports are the most comprehensive and neatly got up of any of the hundreds of reports, from corporations and associations, which are being constantly received at this office. The execution is exceedingly creditable to the compiler.

THE GALAXY. May. Sheldon & Co., 498 Broadway.

The new publishers have improved and enlarged this magazine, and it is now one of the handsomest and best of our numerous monthlies. Price \$3 a year.

Improvement in Trunk and Door Locks.

A cheap lock, without complication of parts and not liable to get out of order, or easy to open by skeleton keys or temporary appliances, is a very desirable improvement. Such seems to be the one shown in detail and in several aspects in the accompanying engraving. Ordinary trunk and satchel locks are generally of such a plan and construction that they can be easily opened, even without their proper key, and are very liable to break, particularly when under the control of "baggage smashers"; and even door locks, on which night keys are used, do not always prevent surreptitious entrance.

The working parts of this lock are contained in a circular case, but they may be attached to a lock or case of any other form. The base or back of the lock—that portion permanently attached to the trunk or lid—is shown in Fig. 1, which gives the inside view. It is secured to a trunk, valise, or traveling bag by screws, passing through the holes shown, by rivets, or by any other sufficient means. Near its circumference is a raised circular flange, having on one side three or more parallel slots, A, and exactly opposite an equal number of drilled holes, B. Over this fits a cup-shaped disk, Figs. 2 and 3, having in its center a solid bolt, C, with a T-head, the end opposite the head being firmly seated in the body of the disk. When the part, A, and the disk, Fig. 2, are brought together, the head of C passes through an oblong slot in the central plate, D, and through a similar aperture in the base plate, A, when a quarter turn of the movable part, Fig. 2, brings the head of the bolt, C, across the slot, firmly uniting the parts, as in Fig. 2.

Between the center plate, D, and bottom of the cup disk, is a recess containing two, three, or more bolts lying in parallel recesses. These bolts are actuated at one end by springs, which force them out against the inner part of the flange, and at the other end by the action of a key, E, having as many pins as there are bolts. The pins of this key, being inserted into holes in the rim of the cup disk and pressed against the bolts, force them inwards until their ends correspond with the circumference of the ring holding the plate, D, when the lock may be opened and the parts separated.

Fig. 3 is a vertical central section of the lock, attached to a trunk. In this case the central bolt is extended through the base plate, and has a secondary T-head, F, passing through a slot in a plate attached to the trunk lid.

Fig. 4 shows the attachment of the lock to the knob of a door lock—the whole lock being contained in the knob. When the door is to be opened, as by a night key, the key, E, is inserted, which allows the knob to be turned and at the same time furnishes a lever to assist in turning it. By turning the knob half way around when the key is in, so that the apertures of the knob are on the top, the door can be opened as by any ordinary knob, and at all times the bolt, G, may be moved from the inside. The key, E, is absolutely necessary for opening the lock to which it belongs, as its pins are adapted exactly, in their length, to the bolts of each individual lock; and if an attempt is made to open the lock by the insertion of separate pins or wires, one single bolt may be pushed in too far, which will effectually prevent the turning of the cup disk by the protrusion of the back end of the bolt through the holes, B, in Fig. 1.

Patented through the Scientific American Patent Agency, January 28, 1868, by George Ruppel, Harlem, N. Y., who is desirous to dispose of the patent, or the right to manufacture.

Fire-Proof Bronze Color for Copper and Brass.

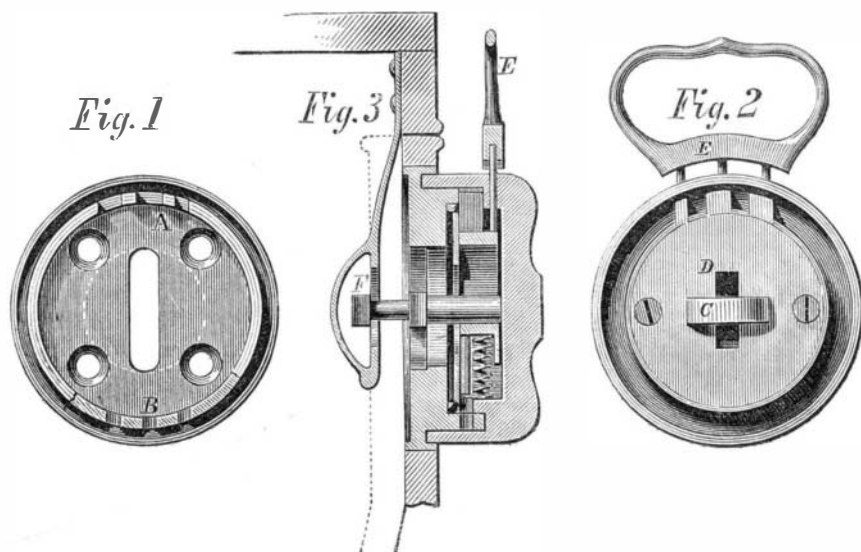
One-sixteenth of an ounce of crystallized verdigris, and the same quantity of finely powdered muriate of ammonia, are to be dissolved in five-sixths of a pint of rain water, the solution left standing covered for three to four hours, and then $1\frac{1}{2}$ pints more water poured into it. The copper vessel, which must be perfectly clean, is now to be held over a charcoal fire until it is equally heated throughout and becomes uniformly tarnished. The copper is now to be rubbed over with the mixture and then carefully dried.

After five or six repetitions of this treatment, the copper receives a brass color; after from six to ten repetitions, it acquires a fine yellow. If the copper is now to be changed from yellow to brown, it must no more be wetted while hot; if, however, it be desired to have it very pale brown, the process must be repeated twenty or twenty-five times. When the desired color is attained, the copper is to be laid in clean water, taking care to clean it or dry it rapidly after taking it out. This must be done carefully. The copper is then held over a weak charcoal fire, when the bronze becomes permanent and fire-proof. To give a fire-proof, brown, bronze color to brass, the following is the process:

$\frac{3}{4}$ of an ounce of crystallized verdigris and the same quantity of sal-ammoniac are mixed with five-sixths of a pint of rain water, and left to stand from two to three hours. The brass is then to be rubbed over with it from two to three minutes, when it becomes green. $1\frac{1}{2}$ pint of rain water is now to be added to the solution. The metal is now held over a charcoal fire, which must not be too strong, until it

acquires a copper color. It is then again wetted, and left to dry by evaporation. When it has been treated in this manner four or five times, it becomes olive colored. The heat may now be somewhat increased, but it is necessary to be very careful that the metal does not become too hot. When it has been treated nine or ten times in this manner, it becomes brown. As long as any greenish places are to be seen, however, this treatment must be continued, in many cases twenty to twenty-five times before the required color is obtained.

If, however, the metal be strong, the materials are to be dissolved in hot rain water, and the metal rubbed with it immediately until it acquires a fine dark green color; it is then to be held over a strong charcoal fire, by which means



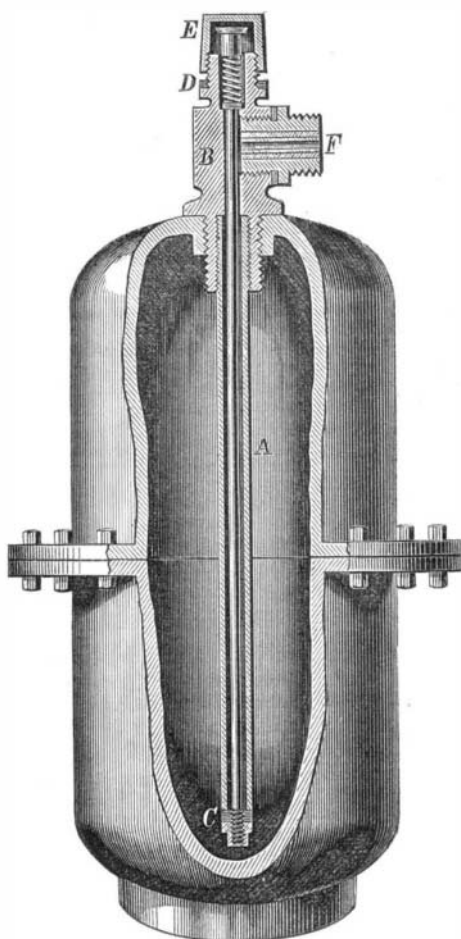
RUPPEL'S PATENT LOCK.

it acquires a fine brown color after ten to twelve repetitions of the treatment. It is necessary to be careful that the metal is equally heated throughout. If spots appear, they must be bitten out during the work and polished with brick dust.—*Genarbeitsblatt aus Wurtem.*

SOHNACKENBERG & ROSENKRANZ' IMPROVED FEED FOR SODA FOUNTAINS.

The object of this device, for which a patent is now pending through the Scientific American Patent Agency, is to furnish a ready means for preventing the flow of the carbonic acid solution into the delivery pipe from the fountain, to make the transportation of the filled fountains easier and more convenient, and to allow the attachment and detachment of the delivery pipe without annoyance, danger, or trouble.

The pipe, A, of india rubber or any suitable material is attached to the metallic head, B, which screws into one end of



the fountain. The pipe is of such a length as to reach nearly to the bottom of the fountain. Inside the tube is a metallic rod furnished with a nut and elastic washer, C, at its lower end, and at the upper end with a knob and spiral spring. Over this knob is screwed a thimble, E, which, being screwed down, depresses the rod and opens a space between its nut and washer at the bottom of the tube, to allow the passage of the gas charged liquid to the delivery plug, F.

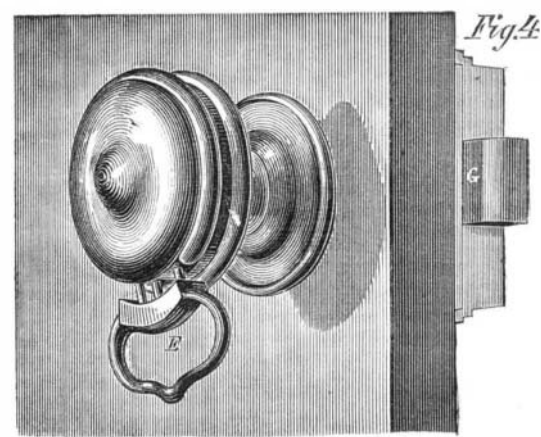
In transporting the charged fountain it is necessary only to partially unscrew the cap, E, allowing the spiral spring, D, to act in conjunction with the outward pressure of the gas against the bottom of the rod, to prevent the escape of the

liquid; and at any other time the outflow of the contents of the fountain can be prevented or regulated by the same means.

Address Schnackenberg & Rosenkranz, care of the American Mineral Water Co., President street, between Nevins street and Third Avenue, Brooklyn, N. Y.

Notes on Recent Scientific Discoveries and their Practical Application.**BOTTLING LAUGHING GAS.**

The use of protoxide of nitrogen, or laughing gas, as an anæsthetic agent, is no novelty, and would require no notice here, but for a suggestion recently made in the *British Medical Journal*, which offers a problem to mechanics. It would be very inconvenient for surgeons to be driving about with large bags of gas for administration to their patients. There are inconveniences also in the preparation of the gas on a small scale which disappear when the manufacture is carried on in a moderately large way. Now laughing gas can, by great pressure or intense cold, be condensed into a liquid, and



the suggestion of the journal we mention is, that liquid protoxide of nitrogen shall be sold, from which at any moment, by merely turning a tap, a bag of gas can be obtained for inhalation. To carry out this idea, bottles are required which will stand a pressure of at least 800 lb. The pressure at which the gas liquefies is about 30 atmospheres at the freezing point, so perhaps for a bottle to be perfectly safe at our ordinary temperature, it should be proved to 1,000 lb. There can be no difficulty, we should think, in producing such a bottle of cast steel, so light that a surgeon might take it with him on his rounds, and if there are all the advantages claimed for protoxide of nitrogen as an anæsthetic, there will probably be a considerable demand for such bottles. As regards the manufacture of the gas, and its liquefaction, these are very simple matters; the desideratum of to-day is a safe and portable bottle to hold the liquid, and we have little doubt that this will soon be furnished.

METALLIC CEMENT.

A very strong and durable metallic cement, we read in a German *Mechanics' Journal*, is formed when a mixture of equal parts of oxide of zinc, sulphate of lead, peroxide of manganese, and oxide of iron is made into a paste of proper consistence with boiled linseed oil.

BRASS PICKLING.

Dr. Hiller writes that the brownish red color often obtained when brass work is pickled in the usual mixture of acids, may be avoided by making use of a mixture of equal parts of commercial nitric and sulphuric acids. Articles dipped in this mixture, and then well rinsed in cold water have, he tells us, a very beautiful deep yellow color.

A NEW OIL CAN.

A new can for applying lubricating oil is described in *Cosmos*. It is a cylindrical vessel of a size that can be grasped by the hand, and is much the same in shape as that in common use. The top, however is flexible, and there is a spiral spring in the interior. When oil is required the workman presses with his thumb on the top and forces just the amount necessary. On removing the pressure the spring restores the can to its shape, and the oil in the long spout is forced back by the influx of air. Thus there is no waste of oil by dripping.

EXPLOSIONS OF RED FIRE.

The frequent recurrence of such accidents as that at Nottingham—not often, however, so fatal in their consequences—justifies us in giving a general caution to any readers who may be disposed to amuse themselves with making colored fires. The ingredients for red fire should be powdered separately, and they should be mixed in a sieve, and never in a mortar by means of a pestle. With this precaution the mixing of the color is perfectly safe; but the liability to spontaneous combustion some time after it has been mixed is as great as ever. The spontaneous combustion, however, is not attended with explosion.—*Mechanics' Magazine*.

New Suspension Bridge.

The Legislature of New York has authorized the erection of a suspension bridge over the Hudson river, at the Highlands. The total length of the bridge will be 2,499 feet; between the towers it is 1,665 feet, and the clear span is 1,600 feet. Its height above high water is 155 feet; it will bear a pressure of 5,280 tons, and the breaking strain is 25,171 tons. It could bear up at once 60 locomotives and 34,560 people; but 53 locomotives and 18,000 people would fill it. It will have twenty cables, each about fourteen inches in diameter, and these cables will contain 70,302 miles of steel wire. The towers will be 280 feet high. The iron and steel in the bridge will weigh 17,005 tons.