

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; beside, as sometimes happens, we may prefer to address correspondents 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 \$1.00 a line, under the head of "Business and Personal."

References to back numbers should be by volume and page.

- L. M., of N. Y.**—Lime in the form of milk of lime will precipitate the carbonate of lime from water which is hard owing to the presence of that salt. The reaction is the combination of the lime with the carbonic acid in the water, which enables the water to hold the carbonate of lime in solution. If the water is allowed to stand long over precipitated carbonate of lime, it will, by the absorption of carbonic acid from the air, regain the power of dissolving the carbonate of lime which will render the water again hard.
- R. O., of La.**—We much doubt whether the sinking of a water wheel made hollow and water-tight between the arms, into water, so that its weight will be supported by its buoyancy and relieve the journals from friction, will be productive of a saving in power. We should expect the friction of the periphery upon the water which will support the wheel, to be more than that upon the journals in the ordinary way. You need not sacrifice any head to try your experiment. All that is necessary is to sink the wheel pit.
- C. E., of Maine.**—An illustration of your invention in the SCIENTIFIC AMERICAN could be obtained at less cost than an engraving done in inferior style and printed in circulars, which you would find it difficult to distribute judiciously in large quantities. This hint is a practical one, and worthy to be thought of. After we have printed an illustration we forward it to the patentee.
- S. T., of Miss.**—The object of rifle grooves is simply to give a rotary motion to the ball on its axis lying in the path of its projection. It is not to retard the ball so that the powder may exert greater force upon it before it leaves the gun. It has been found that the rotary motion thus imparted gives greater directness to the course of the ball, in other words, the ball will "go straighter" to the mark.
- F. M. H., of N. Y.**—We know nothing of the engine about which you inquire. It will only be fair for you to say that your boiler saves one hundred per cent of fuel over the best boilers now in use, when it has been proved by actual test to do what you say. You will probably wait some time for such evidence, as such a saving is not theoretically possible and is practically impossible.
- H. C. S., of Ill.**—We know of no simple test that can readily be applied to the detection of cotton seed oil in linseed oil. It is difficult to detect it with the best appliances known. The presence of lard oil, and similar adulterations, is best detected practically by the difficulty with which such oils dry. Linseed oil adulterated with lard oil will always be tacky when pure linseed oil has become hard and resinous.
- J. H. H., of Va.**—The ammonia prescribed as a remedy for toothache is the aqua ammonia of the shops. We advise you, if you are satisfied your neuralgia proceeds from decayed teeth, to have them extracted. In a personal experience which enables us to sympathize fully with you in your affliction, we have found that to be the only sure thing.
- H. A. R. of Del.**—The use of canned fruits and vegetables is constantly on the increase. We are informed that many manufacturers were unable to meet the demand for their goods last year. So you see that any improvement upon present processes in this industry, has a good chance for success. We are unable, however, to pronounce upon the value of your apparatus without seeing its operation. Your description of it is not clear to us.
- V. C., of Pa.**—We do not recognize any patentable features in your plan of steam engine. It seems to consist in a modification of the mechanism, and does not contain anything essentially new. The form is a good one no doubt to economize space, but even in this respect it is no better than some others.
- E. B. J., of Ill.**—You are all wrong in your premises. It is the oxygen that is consumed, *i. e.*, combined with carbon in the experiment you describe. The nitrogen is left. Oxygen does not support combustion by "mere presence." It unites chemically with the substances burned.
- J. G., of Vt.**—You are certainly an amateur, as you say, or you would know better than to use a file to finish a piece of metal in a lathe, which is required to be perfectly cylindrical. The turning tool should be the last tool to touch it. The best thing for you to do is to visit some machine shop and get some practical man to show you how to get a smooth finish without a file.
- R. S., of Pa.**—Hoe's rotary press was first used on the Philadelphia Public Ledger in 1847. The most important improvements in printing presses have been made within the last thirty years. The Bullock press prints on both sides of the paper the paper being fed in from a roll, and cut off in sheets after printing. The effect of rollers upon type is more injurious than the pressure of a flat surface.
- J. C. McD., of Ca.**—You are evidently confounding the terms "gather" and "set" as applied to wagon wheels. "Gather" is the inclination of the forward parts of the wheels towards each other, dependent upon the peculiar construction of the axletree. "Set" is the inclination of the bottoms of the wheels toward each other. Think the matter over again.
- C. K. H., of La.**—The resistances of media upon bodies of equal size moving with equal velocity and of the same weight and form, are as the densities of the media. Water being 800 times as dense as air will offer 800 times the resistance of air.
- H. L. B., of N. Y.**—We know of nothing better for polishing any kind of metal where a very high luster is required than rotten stone followed by Paris white and rouge. The latter was formerly very extensively used for polishing the silver plates for daguerreotypes.
- J. K. J., of N. J.**—The best qualities of chrome iron ore contain sometimes as high as sixty per cent of the oxide of chromium. We doubt whether you have found it as you seem to think, although it is possible. So far as we know it is only found in serpentine rocks, either in veins, masses, or pockets.
- E. B., of Mass.**—The connecting of your stove pipe with two chimneys will not avail to relieve you of the too powerful draft, unless one of the chimneys is much lower than the other. The answers to your other inquiries will be found in an article entitled "Hints on the Burning of Anthracite," which will shortly be published.
- R. M. N., of Ga.**—Mineral paints are for the most part oxides and sulphides of metals. The others about which you particularly inquire, are mixtures of the oxides of aluminum and the hydrated peroxide of iron, with, in some instances, oxide of manganese.
- P. McC., of Cal.**—There is plenty of room yet for new machines which will manufacture a good quality of wood pulp. To pay well they need only equal in efficiency some already in use. Should your machine prove to be superior to those, success awaits it. Actual experiment can only decide the question.
- Petroleum Broker** is reminded that in order to get his case before us properly he must put in an open appearance. We are not in the habit of wasting our time upon anonymous correspondents.

Recent American and Foreign Patents.

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

PUMP.—R. W. Crouse, Westminster, Md.—The object of this invention is to provide for public use a double-acting pump, so constructed that it can be conveniently repaired when the packing becomes worn or injured.

MACHINE FOR COVERING LIGHTNING RODS WITH SHEET METAL.—W. S. Reburn and F. J. Martin, Philadelphia, Pa.—This invention relates to a compound lightning rod, composed of an iron body, to give support, and a copper sheathing to furnish a good conducting surface.

CONVERTIBLE HOE AND FORK.—John H. Foster, Charlottesville, Va.—The object of this invention is to provide for public use a simple and durable instrument which can be adjusted to operate either as a hoe or a fork, and which can, at any time, be readily changed from one form to the other, as the work requires.

APPARATUS FOR PRINTING VIGNETTES.—Jean Elie Richard, Columbia, S. C.—This invention has relation to printing large vignettes from the solar camera. In order to print large vignettes, it is necessary that the prepared paper or blank should be placed at a distance from the camera, varying according to the diverging power of the lens and the size of the picture required.

GLASS HOUSE POT.—Thomas Scanlan, Birmingham, Pa.—The object of this invention is to provide for the use of glass manufacturers a pot or crucible in which to prepare the glass, so constructed and operating that it will produce more glass to a "filling" than those heretofore employed, and do its work in less time, and with greater convenience.

COMBINED HAY RAKE AND SEEDER.—A. P. Routt, Liberty Mills, Va.—This invention consists in an improved mode of fastening the teeth of a rake that may be used for raking hay, or for scratching in seed falling from a seed box placed in front of the rake. Also, in an apparatus for rendering the seeder inoperative when the machine is to be used solely as a rake.

EXCAVATOR.—H. H. Beard, Friar's Point, Miss.—This invention relates to a machine for ditching and leveling, in which the soil, cut out by the plows, is received upon an endless apron, and by that conducted to a second transverse endless apron; and the invention consists in making the said transverse apron in sections, and articulating said sections together, and in using plows of peculiar form.

PROCESS FOR PRESERVING VEGETABLES.—Francis H. Smith, Baltimore, Md.—This invention consists in taking Irish potatoes, sweet potatoes, and onions, in the raw state, slicing them, and then subjecting them to the action of steam or hot water, from five to fifteen minutes, as the nature of the vegetable under treatment may require. This operation "sets" or coagulates the albumen and starch contained within the vegetable cells, and prevents discoloration.

WASHING MACHINE.—D. C. Delinger, Decatur, Ohio.—This invention consists in providing a washing machine with two receptacles—one for water alone, and the other for water and clothes; said receptacle being connected by a pipe so that water may be forced from one receptacle to the other and back again, to effect the more thorough cleansing of the clothes; also, in an improved aperture for throwing the water from one receptacle to the other, and, at the same time, washing the clothes.

SIDE-SADDLE TREE.—Jacob Straus, St. Louis, Mo.—This invention consists in combining in one tree a cantle, a back rail, a back spring, and an extension spring, in such a manner as to form a continuous flange along the off and back sides of the tree, so that the latter, when covered with raw hide, forms a saddle in itself, sufficient for all ordinary purposes, and is, at the same time, a perfect tree, upon which a saddle of any sort, and of the most desirable shape, may be built up by an ordinary saddler.

MICROSCOPE.—James H. Logan, Allegheny City, Pa.—In this improved microscope, every part except the lens, screw, clips, and reflecting surface of the mirror, is made of wood. The main features of the invention consist in the general construction and arrangement of the parts, whereby it is possible to make them all of wood, without sacrificing strength and efficiency, together with a new and improved method of effecting the focal adjustment and the peculiar adaptation of the microscope to the convenient and efficient use of globule lenses.

TREADLE FOR MACHINERY.—Carlos Stebbins, Pike, N. Y.—This invention consists of a platform for the foot to rest upon, rigidly attached to the lower part of an oscillating stirrup, said stirrup having an arm projecting at nearly a right angle from the upper end of one of its side arms, the outer extremity of said arm being joined by a connecting rod to a wheel running upon a fixed pivot, from which motion may be communicated to machinery, the whole arrangement being intended to do its work with much less friction and resistance than ordinary treadles.

ATTACHING BELLS TO STRAPS.—Dwight M. Welch, Middle Haddam, Conn.—This invention consists in attaching bells to straps by means of a button or disk, which is soldered to the end of the shank of each bell after the latter has been inserted in a hole previously prepared for it in the strap, whereby a string of bells can be prepared in a few minutes, and at comparatively small expense. Patented Aug. 10, 1869.

STEAM GENERATOR.—J. Quipp and Robert Law, Buffalo, N. Y.—This invention consists in the use of a primary boiler, in which the steam is generated by the fire, and one or more secondary boilers in which the steam for use is generated by the steam from the first boiler; and it has for its object to provide a uniform application of heat to the secondary boilers, which is accomplished by the steam used for heating, which will be of the same temperature throughout the heating space.

COMBINATION LOCK.—Nicholas Reed, Otisville, N. Y.—This invention consists in an arrangement on a sliding locking bolt, engaging in a notch in the side of an ordinary slide bolt for locking it, of a series of combination disks capable of rotation thereon, and adjustment, to permit the said locking bolt to slide, or to prevent it, and also so arranged as to permit the changing places of the disks, and the position of the locking bolt to complicate the combination. It also consists in a guard attachment to hide the letters of the combination when locking, and to hold the disks in the right position while locking or unlocking.

STEM-WINDING WATCH.—James Nardin, Locle, Switzerland.—This invention relates to improvements in stem-winding watches, and watches having stopping devices for the second hands, having for its object to arrange the slides by which the winding devices are changed to gear with the hands, and the stopping is effected for better protection against being moved by the accidental contact of the said slides against anything whether the watch is in the pocket or otherwise. The invention also comprises an improved mode of operating the slide of the winding apparatus to gear the winding stem with the hands for turning them.

SODA WATER FOUNTAIN.—Wm. Gee, New York city.—This invention relates to an improved method of connecting bungs, pipes, faucets, plugs, etc., to soda water and other cylinders, when made of thin sheet metal, and either coated or lined with tin or not. The object is to provide a connection for the bungs, etc., which will permit the ready removal thereof when they become worn or require removing from any cause, without disturbing the tin or lead linings of vessels, and without the employment of solder to make the connections tight, the solder being objectionable for the reason that it is difficult to remove for disconnecting the said bungs or other parts, besides being exposed in some of the vessels to the action of acids which destroy it and loosen the parts.

BOILER.—A. J. LeGrand, Boonton, N. J.—This invention relates to improvements in heating boilers, such as are used in houses for supplying hot water or for generating steam for heating buildings, or for heating by hot water, as in horticultural buildings.

BUTTON FASTENING.—John L. Remlinger, Providence, R. I.—This invention has for its object the construction of a simple device for retaining buttons, studs, etc., on shirts and other articles of wearing apparel. The invention consists of two L-shaped plates, of which one projects from the underside of the button, while the other is pivoted to it, so as to swing freely.

SELF-CLOSING TELEGRAPH KEY.—J. H. McElroy (assignor to himself, D. J. Holly, and H. McElroy), Warwick, N. Y.—This invention relates to improvements in telegraph keys, whereby it is designed to provide an improved self-closing arrangement by the employment of only one spring, so guarded that it cannot be opened by any slight inadvertent touch, or by anything dropping on it; also the combination therewith of a simple and convenient cut out device.

VELOCIPEDE.—S. H. Sawhill, Cambridge, Ohio.—This invention relates to a new two or three-wheeled velocipede, which is to be propelled by hand, and which is so constructed that it can be easily operated, and that the body of the rider will be sustained in the most advantageous position. The invention consists in several improvements of the driving mechanism of the foot supports and steering mechanism, which, separately or combined, tend to produce a simple and convenient apparatus.

SEED PLANTER.—John Stark, Thomasville, Ga.—This invention consists in a new manner of operating the seed slide, from the axle of the rear supporting wheel; also, in arranging a rotating reel within the drop-box for separating cotton seed and for breaking up lumps of fertilizing matter that might enter the box; and in providing adjustable gates for the seed apertures, the position of said gates being regulated by the aid of graduated scales.

BUTTON AND STUD.—Henry Link, Little Falls, N. Y.—This invention relates to a new manner of connecting the shank of a button or stud to the head or body of the same, so that the latter cannot fall off spontaneously, while it may be removed at will without difficulty.

REELING MACHINE.—E. L. Buckup, Stapleton, N. Y.—This invention relates to a new machine for automatically dividing thread into skeins and hanks, while the same is being wound upon a reel, thereby doing away with very tedious manual labor and with much attention, heretofore required in forming skeins and hanks.

GRINDING TOOL.—E. Babcock and T. B. Farrell, Laurens, N. Y.—This invention has for its object to provide an apparatus by means of which it will be possible for one man to hold a tool to be sharpened against the edge of a grindstone and to also turn the stone.

AXLE FOR VEHICLES.—John Grabach, Clyde, Ohio.—This invention relates to a new spindle and oil reservoir for wagon axles, and has for its object to provide a continuous self-acting lubricating device, by which the axle will be kept greased in a uniform manner. The invention consists in forming an oil reservoir with an adjustable slide on the shank of the spindle, and a spiral groove on the body of the spindle.

DEVICE FOR UTILIZING RECOIL OF HEAVY GUNS.—J. B. Eads, St. Louis, Mo.—This invention relates to a new method of storing up the power developed in the recoil of large guns, so that it may be afterward utilized at the will of the operator, to run the gun into battery, or to raise it above a parapet or other defense, to admit firing over the same. The invention consists principally in devices for causing the force of the recoil to compress an elastic substance or material, such as metallic or other springs, air, water, or other fluid, so that such compressed article or substance will, when allowed to expand, run the gun forward or elevate it as aforesaid, to bring it into position for firing.

CURD GRINDER.—C. W. Terpening, Geneseo, Ill.—This invention relates to a new machine for grinding curd and mixing it with salt, by means of grinding disks that operate above a vat. The object of the invention is to obtain means for rapidly treating and manipulating curd, and for properly blending the salt, so that there will be no danger of souring the curd and spoiling the cheese.

PIPE WRENCH.—Wm. H. Downing, Pioneer, Pa.—This invention relates to a new pipe wrench, which is so arranged that it will securely hold gas and other pipe, and allow it to be turned in either direction without releasing the pipe, and so that it can be adjusted to different sized pipe.

MURRAIN REMEDY.—Henry Jacobs, Fayetteville, Tenn.—This invention relates to a new medicine for the cure of murrain in cattle, and consists in a new combination of ingredients, which are compounded so as to produce an effective medicine.

TIRE AND BAND SHRINKER.—G. W. Dalbey, Carrollton, Miss.—This invention relates to a new device for shrinking all kinds of tires and bands, and consists of a novel arrangement and combination of parts, whereby both large as well as small tires and bands of all kinds can be shrunk to suitable sized circles.

FLOOR FOR MALT KILNS.—Wm. Gerhard, Jr., Florence, Mass.—This invention relates to a new manner of constructing malt kiln floors of longitudinal wires, and has for its object to avoid any projections on the drying surface.

SAFETY LAMP.—E. G. Kelley, New York city.—This invention has for its object to construct a non-explosive lamp which is to be used with benzene, kerosene, naphtha, or other hydrocarbon liquids, and in which a collection of dangerous gases is impossible. The invention consists in providing the reservoir of the lamp with a vent for the escape of the gases that may be created in the lamp, and in covering such vent with wire gauze, or perforated metal, for the purpose of preventing against the danger of igniting the contents of the lamp by igniting the escaping gases. The invention also consists in applying a wire gauze, or perforated sheet metal plate, to the lower end of the wick tube, to prevent the ignition of the contents of the lamp in case the flame on the wick should be blown into the wick tube.

WATER WHEEL.—P. H. Wait, Sandy Hill, N. Y.—This invention relates to a new manner of constructing the buckets of that class of water wheels which operate with a vertical inlet and discharge inward or central inlet, the guide chutes being formed similar to the buckets, but in opposite direction. The object of the invention is to prevent the difficulties arising heretofore in wheels of the said class in which the direct acting point of the bucket moves at a velocity considerably less than the reacting point.

FRUIT BOX.—Geo. M. Fenley, Medora, Ind.—This invention relates to a new and useful improvement in the construction of a fruit box for transporting berries, etc., to market, the fruit box being so hinged together that, when empty, it may be folded up perfectly flat, thus enabling a large number to be packed in a small compass for re-shipment.

RAT TRAP.—J. M. Henrie, Vanalia, Iowa.—This invention consists of a box, preferably having two chambers or spaces, one being permanently covered and the other provided with a sliding cover, which is connected by rods to a crankshaft, to which a weighted cord is attached for rotating it. Each revolution of the crankshaft will withdraw and return the cover, and at each return it is locked, and held until the animal, setting on the cover for the bait, by his weight depresses a hinged part and unlocks it, permitting the weight to draw it back suddenly under a plate which scrapes the animal off into the pit below, where he is secured by the return of the cover. The invention also comprises a locking device for holding it closed when run down, an arrangement of springs for quickly setting the cover into motion and arresting the motion of the said cover at the close of the return movement; also, a means of enticing the animals from the receiving chamber into another.

HOT AIR FURNACE.—Joseph E. Chapman, Cannon Falls, Minn.—This invention relates to a furnace for heating air for warming buildings, or for other purposes.

GAS GENERATING LAMP.—Lasslo Chandor, St. Petersburg, Russia.—This invention relates to an improvement in lamps, whereby it is designed to provide a simple, efficient, and safe lamp, which will, self-acting, generate gas from hydrocarbon oils, namely, petroleum, kerosene, naphtha, benzine, and turpentine, singly or in any way mixed, and all combustible fluids whatever, and burn the same without the aid of the glass chimneys now commonly used with lamps for burning these substances.

PISTON PACKING.—L. P. Garner, Ashland, Pa.—This invention consists in forming wedge-shaped recesses at the ends of the packing rings, and the employment of wedges fitting them, to be acted on when the cylinder takes steam, by the steam, to force them into the recesses to spread and thereby tighten the rings. The direct pressure of the steam on the inner faces of the rings is also made use of in conjunction with said wedges when required.

HAT PRESSING BAG.—Samuel Wing, Munson, Mass.—This invention relates to improvements in india-rubber or other elastic bags such as are used in the manufacture of straw, felt, and other hats, for holding them when in the pressing molds. The invention consists in the application to such bags of metallic forming rings to insure the proper formation at the corners or at all points or angles where two walls or parts meet.

HINGE COUPLING.—S. W. Perkins, Geneseo, Ill.—This invention relates to a new and useful improvement in hinge couplings for the thills, shafts, or poles, of single or double carriages, and for many other purposes.

COMBINATION PENCIL SHARPENER AND PEN HOLDER.—Moses W. Dillingham, Amsterdam, N. Y.—This invention relates to a new and useful improvement in a device for sharpening lead-pencils and holding a pen.

ROCK DRILL POINT.—C. H. Davis, San Francisco, Cal.—This invention consists in removing parts of the edges of flat pointed drills by making notches or recesses from the point upward, so that the drills will cut only a part of the distance of their breadth, the stone along the other part being broken by the effect of the cutting part.

VINE CUTTER.—Charles Crenshaw, Bartlett, Tenn.—This invention has for its object to furnish an improved machine for cutting potato and strawberry vines, which shall be simple and inexpensive in construction, and effective in operation.

CAR WHEEL.—W. R. Thomas, Catauqua, Pa.—This invention has for its object to furnish an improved car wheel, simple in construction, strong, and durable.

GUARD FOR CIRCULAR SAWS.—Isaac Holliday, South Brooklyn, N. Y.—This invention has for its object to furnish a simple and convenient device, by means of which the upper or exposed part of a circular saw may be covered in such a way as not to interfere with the operation of the saw, while preventing anything from coming in contact with and being injured by, or injuring said saw.

TRUSS FOR CONNECTING BOOMS TO MASTS.—James E. Tibbetts, Trenton, N. J.—This invention has for its object to furnish an improved device for connecting booms to the masts of vessels, which shall be simple in construction and safe in operation, and which will allow the boom to be conveniently removed when desired.

ELECTRIC FIRE AND BURGLAR ALARM.—Eugene Fontaine, Fort Wayne, Ind.—This invention has for its object to improve the construction of electric fire and burglar alarms, so as to make them more convenient in use, and more reliable and effective in operation.

CURRY COMB.—H. Mithoff, Columbus, Ohio.—This invention has for its object to furnish an improved curry comb, simple in construction, easily and cheaply made, which will at the same time be strong and durable.

PEN HOLDER.—C. G. Wilson, Brooklyn, N. Y.—This invention has for its object to furnish an improved pen holder, designed more particularly for those having stiff or crooked fingers or hands, and which shall be so constructed as to allow the pen to be held at any desired angle or inclination.

WATER WHEEL.—S. D. Taylor, Hazleton, Pa.—This invention relates to new and useful improvements in that class of water wheels known as turbines.

LAMP.—P. Prettyman, Paradise Spring Farm, Oregon.—This invention relates to improvements in lamps, whereby it is designed to provide an improved means for holding the glass chimneys thereon; preventing the wick tube from heating and the communication of heat to the oil chamber, and for facilitating the process of combustion.

REGISTERING APPARATUS FOR SPINNING FRAMES.—Henry P. Gregory, Plattsburgh, N. Y.—This invention relates to improvements in registering apparatus for spinning jacks, and other spinning machinery, the object of which is to so arrange them that dishonest operatives may be prevented from working them to make them register more than they would do by the legitimate operation of the machines to which they are attached.

STEAM PUMP.—L. P. Garner, Ashland, Pa.—This invention relates to improvements in that class of steam pumps, whereby two pump pistons are actuated by one engine, the piston rod of the engine forming one of the pump rods, and actuating the other through the medium of a cog wheel gearing into teeth on the piston rod of the engine, and also into corresponding teeth on the other pump rod.

HORSE HAY RAKE.—Thomas J. West, Alfred Center, N. Y.—The object of this invention is to provide a sulky attachment to the common horse hay rake, and suitable operating mechanism whereby the rake may be manipulated by the attendant while sitting on the seat of the sulky in advance of the rake.

HORSESHOE MACHINE.—Charles P. Williamson, Louisville, Ky.—This invention relates to improvements in machinery for forming horseshoe blanks, and has for its object to provide a simple and efficient arrangement of means for the purpose. The invention consists in an improved arrangement of oscillating bending dies, a sliding former, pressing and creasing die, and discharger.

NEW PUBLICATIONS.

COTTON CULTURE, AND THE SOUTH CONSIDERED WITH REFERENCE TO EMIGRATION. By F. W. Loring and C. F. Atkinson. Boston: A. Williams & Co., 100 Washington street.

This pamphlet is the embodiment of a large mass of information obtained by the authors in response to a circular letter addressed to the cotton planters of the South. It contains a large amount of interesting and authentic information, with a free discussion of the labor and immigration questions. Some extracts from this portion of the work will be found in another column.

BENEDICT'S TIME TABLES.

Benedict Brothers, 691 Broadway, whose "time" has been regarded for many years as standard in this city, are now issuing a series of very convenient time-table cards—small in size—which give the exact time of the departure of all the railway and steamboat lines leaving this city. They are carefully revised from official sources, and 200,000 copies of the cards are now freely circulated every month throughout the city and upon the trains and steamboats. The expense of their publication is met by advertisements printed upon the cards. It seems to us that, as an advertising medium, these time-table cards offer superior advantages.

THE RESOURCES OF CALIFORNIA. Comprising Agriculture, Mining, Geography, Climate, Commerce, etc., and the Past and Future Development of the State. By John S. Hittell. Fifth Edition, with an Appendix on Oregon, Nevada, and Washington Territory. San Francisco: A. Roman & Co. New York: 27 Howard street.

PHYSICAL SURVEY OF VIRGINIA, Her Geographical Position, its Commercial Advantages, and National Importance. Preliminary Report by M. F. Maury, LL.D., etc., Professor of Physics Virginia Military Institute, Lexington, Va., Gen. Francis H. Smith, A.M., Superintendent. Second Edition. New York: D. Van Nostrand, 23 Murray street, and 27 Warren street.

Inventions Patented in England by Americans.

[Compiled from the "Journal of the Commissioners of Patents."] PROVISIONAL PROTECTION FOR SIX MONTHS.

- 2,133.—ANNEALING METALS.—James M. Bottum, New York city. July 15, 1869.
2,227.—PRESERVING THE AROMATIC PRINCIPLE OF HOPS.—E. D. Brainard, Albany, N. Y. July 22, 1869.
2,235.—TELEGRAPH-WIRE INSULATORS.—W. E. Simonds, Hartford, Conn. July 22, 1869.
2,241.—PURIFYING ALCOHOL AND PARAFFINE.—C. C. Parsons, New York city. July 23, 1869.
2,261.—REAPING AND MOWING MACHINE.—James Thayer, New York city. July 26, 1869.

- 2,264.—VALVE.—Gerard Sickles and J. H. Thornlike, Boston, Mass. July 26, 1869.
2,311.—STEAM ENGINE.—John Storer, Peekskill, N. Y. July 26, 1869.
2,320.—SPINNING MECHANISM.—R. L. Walker, Southbridge, Mass. August 3, 1869.

APPLICATIONS FOR EXTENSION OF PATENTS.

- LOCK.—Sarah A. Holmes, administratrix of the estate of Richard G. Holmes, deceased, and William H. Butler, of New York city, have petitioned for an extension of the above patent. Day of hearing, October 18, 1869.
LATH MACHINE.—Andrew Blaikie, of San Francisco, Cal., and Walter Clark, of Marquette, Mich., have applied for an extension of the above patent. Day of hearing Oct. 18, 1869.
TOBACCO PRESS.—Rudolphus Kinsley, of Springfield, Mass., has petitioned for the extension of the above patent. Day of hearing, October 25, 1869.
LATH CHUCK.—Eli Horton, of Windsor Locks, Conn., has applied for an extension of the above patent. Day of hearing, October 25, 1869.
PLANING MACHINE.—James A. Woodbury, of Boston, Mass., has applied for an extension of the above patent. Day of hearing October 25, 1869.
HAND SEED PLANTER.—D. W. Hughes, of Palmyra, Mo., has petitioned for the extension of the above patent. Day of hearing, November 1, 1869.

Official List of Patents.

Issued by the United States Patent Office.

FOR THE WEEK ENDING AUG. 17, 1869.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT OFFICE FEES:

Table with 2 columns: Description of fee and Amount. Includes fees for each caveat, application for patent, extension of patent, and various other services.

For copy of Claim of any Patent issued within 30 years, \$1.
For copy of the model or drawing, relating to such portion of a machine as the Claim covers, from \$1 upward, but usually at the price above named.
Official Specification of any patent issued since Nov. 20, 1866, at which time the Patent Office commenced printing them, \$1-25.
Official Copies of Drawings of any patent issued since 1836, we can supply at a reasonable cost, the price depending upon the amount of labor involved and the number of views.
Full information, as to prices of drawings, in each case, may be had by address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

- 93,661.—VAPOR BURNER.—J. E. Ambrose, Lombard, Ill.
93,662.—HEAD-REST FOR DENTISTS' AND BARBERS' CHAIRS.—R. W. Archer, Rochester, N. Y.
93,663.—TOOL HOLDER FOR HOLDING TOOLS WHILE BEING GRIND.—Egbert Babcock and T. B. Farrell, Laurens, N. Y.
93,664.—MODE OF MOUNTING ORNAMENTAL CROSSES.—W. B. Bennett, Providence, R. I.
93,665.—BUCKLE.—Herman Bernheimer and Henry Newman, New York city.
93,666.—MANUFACTURE OF AX BIT.—Charles Blair (assignor to the Collins Company), Collinsville, Conn.
93,667.—FRUIT GATHERER.—John Bowles, Augusta, Ga.
93,668.—BONE BLACK EQUALIZER.—Daniel Brasill and D. A. Mullane, New Orleans, La.
93,669.—PHOTOGRAPHIC PLATE HOLDER.—Joseph Buchtel, Portland, Oregon.
93,670.—REEL FOR WINDING YARN.—E. L. Buckup, Stapleton, N. Y.
93,671.—RAILWAY CAR AXLE.—H. D. Burghardt (assignor to himself and G. S. Willis, Jr.) Pittsfield, Mass.
93,672.—CLOTHES PIN.—M. E. Burlingame, Willett, N. Y.
93,673.—MANGER.—Adam Chambers, Unionville, N. Y.
93,674.—VAPOR BURNER.—Lasslo Chandor, St. Petersburg, Russia, assignor to Cassius M. Clay.
93,675.—HOT AIR FURNACE.—J. E. Chapman, Cannon Falls, Minn.
93,676.—COAL ELEVATOR.—L. S. Chichester, New York city.
93,677.—APPARATUS FOR ELEVATING AND WEIGHING COAL, ETC.—L. S. Chichester, Brooklyn, N. Y. Antedated August 5, 1869.
93,678.—TRUNK AND OTHER HANDLES.—John Churchill, Bristol, Conn.
93,679.—MACHINE FOR ROLLING HOE BLANKS.—W. T. Clement and E. V. Foster, Northampton, Mass. Antedated August 4, 1869.
93,680.—GANG PLOW.—Peter Conrath, Freeburg, Ill.
93,681.—VINE CUTTER.—Charles Crenshaw, Bartlett, Tenn.
93,682.—WAGON BRAKE.—C. J. Crounse, Clarksville, N. Y.
93,683.—MACHINE FOR UPSETTING TIRES.—G. W. Dalbey, Carrollton, Miss.
93,684.—ROCK DRILL POINT.—C. H. Davis, San Francisco, Cal.
93,685.—DOOR LATCH.—F. W. Dean, Tremont, Ill.
93,686.—POWER APPARATUS FOR VEHICLES.—J. G. Dillaha, Waco, Texas, assignor to himself, R. M. Boone, and N. D. Bailey, Chicago, Ill.
93,687.—PENCIL SHARPENER.—M. W. Dillingham, Amsterdam, N. Y.
93,688.—PIPE WRENCH.—W. H. Downing, Pioneer, Pa.
93,689.—ELECTRO-MAGNETIC ENGINE.—A. E. Dupas, New Orleans, La.
93,690.—HAND SEED PLANTER.—Jeptha Dyson, Philadelphia, Pa.
93,691.—GUN CARRIAGE.—J. B. Eads, St. Louis, Mo.
93,692.—CULTIVATOR AND HARROW COMBINED.—Ezra Emert, Franklin Grove, Ill.
93,693.—FRUIT CRATE.—G. M. Fenley, Medora, Ind.
93,694.—RAIN WATER CUT-OFF.—Edward Fleming (assignor for one half to G. A. Pease), Ann Arbor, Mich.
93,695.—TEETH FOR CULTIVATORS.—H. F. French, Boston, Mass.
93,696.—STEAM PUMP.—L. P. Garner, Ashland, Pa.
93,697.—STEAM ENGINE PISTON PACKING.—L. P. Garner, Ashland, Pa.
93,698.—VAPOR BURNER.—T. S. Gates and A. H. Fritchey, Columbus, Ohio.
93,699.—CONDUCTOR FOR ROLLING MILLS.—John Gearing, Pittsburgh, Pa.
93,700.—SODA FOUNTAIN.—William Gee, New York city.
93,701.—FLOOR FOR MALT KILNS.—William Gerhard, Jr., Florence, Mass.
93,702.—WASHING MACHINE.—Edwin Gillis, Battle Creek, Mich.
93,703.—CARRIAGE SPRING.—J. W. Gilmer, and W. H. De Vain, Sacramento, Cal.
93,704.—MACHINE FOR DOUBLE-SEAMING SHEET METAL.—James Globber, Omaha City, Nebraska.
93,705.—MACHINE FOR TURNING THE EDGES OF SHEET METAL.—James Globber, Omaha City, Nebraska.
93,706.—MACHINE FOR PRESSING DOWN THE SEAMS IN SHEET METAL.—James Globber, Omaha City, Nebraska.
93,707.—CARRIAGE AXLE.—John Grabach, Clyde, Ohio.
93,708.—CLOTHES DRYER.—W. S. Graves, Kansas City, Mo., and A. S. Capron, Grass Lake, Mich.
93,709.—REGISTERING APPARATUS FOR SPINNING MULES.—H. P. Gregory, Plattsburg, N. Y.
93,710.—MACHINE FOR FORMING PLOW HANDLES.—G. V. Griffith, Fort Wayne, Ind.
93,711.—SASH FRAME AND FASTENER.—J. M. Hale, Georgia Plains, Vt. Antedated August 5, 1869.
93,712.—GRATE.—Robert Ham, Troy, N. Y.
93,713.—MANUFACTURE OF IRON AND STEEL.—James Henderson, New York city. Antedated August 4, 1869.
93,714.—RAT TRAP.—J. M. Henrie, Vandalia, Iowa.

- 93,715.—BENCH SHEARS.—John Hill, Charlotte, Mich., assignor to himself and William Adams.
93,716.—GUARD FOR CIRCULAR SAWS.—Isaac Holliday (assignor to himself and J. S. Dean), South Brooklyn, N. Y.
93,717.—REMEDY FOR MURRAIN IN CATTLE.—Henry Jacobs, Fayetteville, Tenn.
93,718.—CARPET BEATER.—Thomas Jordan, Brooklyn, N. Y.
93,719.—LAMP.—E. G. Kelley, New York city.
93,720.—COMBINING A LETTER BALANCE AND A PEN HOLDER.—R. B. Kepner, Philadelphia, Pa. Antedated August 12, 1869.
93,721.—FANNING MILL.—T. B. Kirkwood, Dublin, Ind.
93,722.—SIDE WALL REGISTER.—J. M. W. Kitchen, Brooklyn, N. Y.
93,723.—FLUE BRUSH.—J. D. Kunkel, Cincinnati, Ohio, assignor to himself, Frederick Stockhove and C. F. Hornberger.
93,724.—HEAD BLOCK FOR SAW MILLS.—C. Leffingwell, Clarksburg, Ohio.
93,725.—BOILER.—A. J. Le Grand, Boonton, N. J.
93,726.—BUTTON.—Henry Link, Little Falls, N. Y.
93,727.—GRINDING AXES.—Harvey Mann, Bellefonte, Pa.
93,728.—SELF-CLOSING TELEGRAPH KEY.—J. H. McElroy, Warwick, N. Y.
93,729.—MACHINE FOR SOWING PLASTER, GRASS-SEED AND GRAIN.—A. W. McKay, Elkhart, Ind.
93,730.—CULTIVATOR PLOW.—Neal McKay, Columbia, Mo.
93,731.—SEWING MACHINE.—Daniel Mills, New York city, assignor to Charles Goodyear Jr., New Rochelle, N. Y. Antedated Feb. 17, 1869.
93,732.—CURRY-COMB.—H. Mithoff, Columbus, Ohio.
93,733.—SAFETY GUARD FOR GUN NIPPLE.—C. T. Moore Gilmanton, N. H.
93,734.—ICE PITCHER.—Bernard Morahan, Brooklyn, N. Y.
93,735.—STEM WINDING WATCH.—James Nardin, Locle Switzerland, assignor to V. T. Magnin, Guédon, and Co., New York city.
93,736.—SCOOP.—Andrew Nonnamaker, Circleville, Ohio.
93,737.—HORSE POWER.—George Oerllein, Utica, Minn.
93,738.—HORSE POWER.—George Oerllein, Utica, Minn.
93,739.—PROCESS FOR PURIFYING PARAFFINE.—C. Chauncey Parson, New York city.
93,740.—TREADLE.—C. Chauncey Parson, New York city.
93,741.—THRILL COUPLING.—S. W. Perkins, Geneseo, Ill.
93,742.—COAL STOVE.—Jacob S. Platt, Philadelphia, Pa.
93,743.—TUCK-CREASING ATTACHMENT FOR SEWING MACHINES.—Wm. Preiss, New York city.
93,744.—LAMP BURNER.—Perry Prettyman, Paradise Spring Farm, Oregon.
93,745.—STEAM GENERATOR.—Jonathan Quipp and Robert Law, Buffalo, N. Y.
93,746.—TINSMITHS' SHEARS.—Ellery P. Ralph and James Hannan, Gallipolis, Ohio.
93,747.—COMBINATION LOCK.—Nicholas Reed, Otisville, N. Y.
93,748.—BUTTON.—John L. Remlinger, Providence, R. I. Antedated August 12, 1869.
93,749.—CULTIVATOR.—John J. Rose, Elmwood, Ill.
93,750.—HORSE HAY FORK.—John W. Roe, Lewisburg, Pa.
93,751.—VELOCIPEDE.—S. H. Sawhill, Cambridge, Ohio.
93,752.—EXPLOSIVE COMPOUND FOR USE IN FIREARMS, BLASTING, ETC.—Taliaferro P. Shaffner, Louisville, Ky.
93,753.—EXPLOSIVE COMPOUND.—Taliaferro P. Shaffner, Louisville, Ky.
93,754.—EXPLOSIVE COMPOUND.—Taliaferro P. Shaffner, Louisville, Ky.
93,755.—BLASTING FUSE.—Taliaferro P. Shaffner, Louisville, Ky.
93,756.—MANUFACTURE OF NITRO-GLYCERIN.—Taliaferro P. Shaffner, Louisville, Ky.
93,757.—METHOD OF BLASTING WITH GUNPOWDER AND OTHER EXPLOSIVE SUBSTANCES.—Taliaferro P. Shaffner, Louisville, Ky.
93,758.—MAKING CAST STEEL.—Charles William Siemens, Westminster, England.
93,759.—DEVICE FOR SHIFTING BUGGY TOPS.—W. B. Slutter, Warsaw, Ind.
93,760.—TOY TOP.—Thomas E. Sparks, Norwich, Conn.
93,761.—ADJUSTABLE CLUTCH FOR LIFTING WELL TUBING.—Wm. A. Spring, Titusville, Pa.
93,762.—SEEDING MACHINE.—John Stark, Thomasville, Ga.
93,763.—CAMERA STAND.—Isaac H. Stoddard, Amenia, assignor to E. and H. T. Anthony and Company, New York city. Antedated August 12, 1869.
93,764.—FURNACE FOR STEAM GENERATORS.—Friedrick Sulter, St. Paul, Minn.
93,765.—HARVESTER.—Loren Swenson, North Cape, Wis.
93,766.—FASTENER FOR WHIP SOCKETS.—O. W. Swift, New Haven, Conn.
93,767.—WATER WHEEL.—S. D. Taylor, Hazleton, Pa.
93,768.—CURD GRINDER.—C. W. Terpening, Geneseo, Ill.
93,769.—CAR WHEEL.—W. R. Thomas, Catauqua, Pa.
93,770.—TRUSS FOR CONNECTING BOOMS TO MASTS.—James E. Tibbetts, Trenton, N. J.
93,771.—COMBINED WATER TANK AND WARMING CLOSET.—Joel Tiffany, Albany, N. Y.
93,772.—OILER FOR THE SLIDES OF STEAM ENGINES.—Christopher C. Tracy (assignor to himself and James E. Grannis), New York city.
93,773.—CHAIR, TABLE, AND STAND COMBINED.—Abigail W. Viles, Elkhorn, Wis.
93,774.—WATER WHEEL.—P. H. Wait, Sandy Hill, N. Y.
93,775.—KINDLING WOOD.—J. Wesley Webber, New York city.
93,776.—MANUFACTURE OF FLOOR OIL-CLOTH.—John Weems and Wm. Weems, Johnstone, Great Britain.
93,777.—HORSE RAKE.—Thomas J. West, Alfred Center, N. Y.
93,778.—HORSESHOE MACHINE.—Charles P. Williamson, Louisville, Ky.
93,779.—RAILWAY STOP CHAIR.—John A. Wilson, Altoona, Pa.
93,780.—PEN HOLDER.—Charles G. Wilson, Brooklyn, N. Y.
93,781.—STOVE AND FURNACE GRATE.—George A. Wing, Albany, N. Y.
93,782.—BASE-BURNING STOVE.—George A. Wing, Albany, N. Y.
93,783.—HAT-SHAPING MACHINE.—Samuel Wing, Munson, Mass.
93,784.—QUILTING FRAME.—George C. Winters (assignor to himself and Edwin Miller), Winfield, Mich.
93,785.—PEPPER CASTER.—Ferdinand Wolf (assignor to himself and Henry Hanf), South Boston, Mass.
93,786.—CARRIAGE JACK.—Joseph E. Woll, Allegheny City Pa.
93,787.—SAWING MACHINE.—Hollis Woodward, Milwaukee, Wis. Antedated August 5, 1869.
93,788.—COCK-EYE FOR HARNESS.—Lyndon Worster, Syracuse, N. Y.
93,789.—FLEXIBLE WAINSCOT.—John F. Worth, Brooklyn, N. Y.
93,790.—FEED-WATER HEATER.—Peter C. Wortman, Meadville, Pa.
93,791.—CARRIAGE.—Benjamin F. Adams, Bangor, Me.
93,792.—BUCKLE.—Theodore Bailey, Fairfax county, Va., and Howard H. Young, Washington, D. C.
93,793.—CHAIN STOPPER.—William D. Barker, East Abington, Mass.
93,794.—PUMP.—A. Balding, Memphis, Tenn.
93,795.—APPARATUS FOR CARBURETING AIR.—J. F. Barker, Springfield, Mass., and C. N. Gilbert, New York city.
93,796.—EXCAVATOR.—H. H. Beard, deceased, Friar's Point, Miss. (W. J. St. John administrator.)
93,797.—METALLIC REMEDY FOR RHEUMATISM.—Moses Bernheim, New York city.
93,798.—FRICTION CLUTCH.—Erastus B. Bigelow, Boston, Mass.
93,799.—HARNESS-OPERATING MECHANISM FOR LOOMS.—Erastus B. Bigelow, Boston, Mass.
93,800.—POWER LOOM FOR WEAVING PILED FABRICS.—Erastus B. Bigelow, Boston, Mass.
93,801.—STEADY REST FOR LATHES.—James Brodie, San Francisco, Cal.
93,802.—SODA-WATER APPARATUS.—J. R. Brown, New Haven, Conn.