

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."

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

T. P., of Mo.—If you wish to prevent the splitting of your hollow cutters or reamers in hardening, drill a small hole from the side to meet the large hole at its apex; otherwise there is no chance for the steam to escape and cracking is sure to result.

W. H. B., of Pa.—You can clean a clogged file or rotary cutter effectually by smearing it with oil lightly, exposing it to a forge flame a moment, and then carding it with the card that every machinist or filer uses. You may heat it so hot you cannot bear your hand upon it, but the temper will not be drawn.

S. R., of Me.—Ordinary rosin powdered and melted on the plate by a slight heat will give a temporary resistance to acids. In fact any resinous substance will form a base for a resistant to acids.

T. L., of Pa., wants to use an incombustible spongy coherent substance like platinum sponge but cheap. He says however that it need not possess all the properties of platinum sponge; all that is required is incombustibility, sponginess, and coherency.

H. N. C., of Pa.—A stream of cold air directed forcibly against a heated bar of iron keeps it hot, by the combustion of the iron itself. The oxygen of the air is brought so closely in contact with the heated metal, and is supplied in such quantity that it unites with the iron producing all the phenomena of combustion, among which is the evolution of heat.

A. W. P. of Pa.—There is no difficulty in making a speaking tube convey audible sounds one hundred yards. Biot, a celebrated French philosopher was able to hear low whispers through a tube of iron 3,120 feet in length. The straighter it is the better. We don't think putting it beneath the ground essential. Put it where it will be most convenient.

J. W. H., of Pa.—Self-sealing cans might be made that would perhaps allow the air to escape when the cans are heated, and close themselves hermetically upon the contraction of the air in cooling, but we are not aware that any such are used. The expulsion of the air is the only object to be attained in heating the fruit, where the modern process of canning is used, and if that is not thoroughly done the heating is detrimental rather than beneficial.

J. M., of Ill.—A good varnish for maps or water color paintings, is made of genuine Canada balsam and rectified oil of turpentine, equal parts. Mix; set the bottle containing the mixture in warm water, and agitate until the solution is perfect; then set in a warm place a week to settle, when pour off the clear varnish for use.

J. M. H., of Seminole Nation.—There is special legislation for the Indian reservations which can be found on consulting Brightley's Digest. Should the infringement of a patent be committed therein by a resident of some other State or Territory, a suit would be good, could the party be served, or the infringing machine be found within the jurisdiction of the court in which the suit is commenced. The Territories have District Courts which are severally invested with same jurisdiction as the U. S. Circuit and District Courts of the U. S.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per line will be charged.

Scientific Books and Periodicals sent to order to any part of the country. Purchases of all kinds promptly attended to. Address A. W. Macdonald, Jr., Room B, 57 Park Row, New York.

Manufacturers and dealers of the best crimping machines for boots please send circular and price to C. Kramer, Enterprise, Miss. Box 44.

For sale—Foundry and machine shop. For description address O. F. Griffith, Ag't, Mt. Pleasant, Iowa.

Nut Machines.—For sale, State, county, shop, or machine rights of nut machines. Address H. C. Hart, Unionville, Conn.

\$5,000 will purchase one half interest in a valuable patent that will pay \$30,000 the coming summer. No capital required except the purchase money. Address E. L. Smith, Buffalo, N. Y.

Wanted—address of patentee of machine for converting potatoes into pulp and dry cakes. A. Ott, 23 First ave., New York.

J. T. Raftery, of Eldara, Ill., wishes to correspond with parties for the manufacture of water elevators.

Photographic apparatus, 1-4 size, for sale cheap. Apply at 56 and 58 Murray st.

Hydraulic, steam, and vacuum gages, all sizes, at the lowest prices. Address R. H. Norris, Paterson, N. J.

Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Ct.

Brick claylands for sale. Apply 19 Cliff st., New York, Room 7.

Compound Lathe Chucks—Fairman's patent—The best in the market. Send for circular. Address Hutchinson & Laurence, 8 Dey st.

Makers of hand or power brick presses, send circulars to H. Arndt, Fort Plain, N. Y.

Inventors' and Manufacturers' Gazette—an illustrated journal of new inventions and manufactures. Cheapest paper in the world. \$1 per year. Sample copies sent. Address Saltiel & Co., Postoffice box 448, or 37 Park Row, New York City.

Fine and complicated watches of every description repaired, etc., in all their branches, by H. F. Plagel, 119 Fulton st., N. Y. A practical workman and author of The Watch. All work warranted.

Builders of 8 to 15-horse engines send address, with cut of engine and terms. Object, to select the best to sell for oil purposes. Wanted, 2d-hand iron planer, lathe, drill, pipe-cutting machine, and tools for small machine shop. Also, set of rollers. A. Logan & Co., Engine Dealers, Tideoute, Pa.

Pickering's Velocipede, 144 Greene st., New York.

For descriptive circular of the best grate bar in use, address Hutchinson & Laurence, No. 8 Dey st., New York. See Advertisement.

For sale low—Three second-hand presses for punching nuts and washers, all sizes, and other work. Punches and dies for same. Address Geo. H. Hawes, Fall River, Mass.

Two-set knitting mill for sale—See advertisement back page.

Glynn's anti-incrustator for steam boilers—the only reliable preventive. Causes no foaming, and does not attack the metals of the boiler. Liberal terms to Agents. Address M. A. Glynn & Co., 735 Broadway, New York.

W. J. T.—We think the patent asbestos roofing manufactured by H. W. Johns, of this city, is the best substitute for tin or slate. It is cheap and easily applied.

Inventors and patentees wishing to get small, light articles manufactured for them in German silver or brass, address Schofield Brothers, Plainville, Mass.

Tempered steel spiral springs. John Chatillon, 91 and 93 Cliff st., New York.

Two saw mills for sale. C. Bridgman, St. Cloud, Minn.

Rockwood, 839 Broadway, N. Y., photographs architectural or mechanical drawings and plans to a scale. Also, photographs of machinery.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Punching and shearing machines. Doty Manufacturing Co., Janesville, Wis.

Specialties in the Machinists' line. Parties desiring work of a special character address S. W. Gardner, 6 Alling st., Newark, N. J.

Responsible and practical engineers pronounce the Tupper Grate Bar the best in use. Send for a pamphlet. L. B. Tupper, 120 West st., N. Y.

Iron.—W. D. McGowan, iron broker, 73 Water st., Pittsburgh, Pa.

N. C. Stiles' pat. punching and drop presses, Middletown, Ct.

Machinists, boiler makers, tanners, and workers of sheet metals read advertisement of Parker Brothers' Power Presses.

Winans' boiler powder, N. Y., removes and prevents incrustations without injury or foaming; 12 years in use. Beware of imitations.

The paper that meets the eye of all the leading manufacturers throughout the United States—The Boston Bulletin. \$4 a year.

Recent American and Foreign Patents.

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

LIME KILNS.—George Atkins, Sharon, Pa.—This invention has for its object to furnish an improved lime kiln, simple in construction, easily and conveniently operated, and which will burn the lime thoroughly with a comparatively small amount of fuel.

ANIMAL TRAP.—W. Bronson Jarvis, Washington, N. C.—This invention has for its object to furnish a simple, convenient, reliable, and self-setting animal trap, which shall be so constructed and arranged as to be not at all liable to get out of order.

ROCK DRILLING MACHINES.—S. Gable, Millerstown, Pa.—The object of this invention is to provide a simple and effective machine for drilling rocks.

MEASURING INSTRUMENT.—Thomas Bisling, Bucktown, Pa.—This invention relates to a new and improved device for measuring cloth and giving linear measurements generally; and the invention consists in operating a revolving dial plate by a sliding pawl and ratchet wheel.

MACHINE FOR MAKING PAPER PULP.—Frederick Burghardt, Curtisville, Mass.—This invention relates to a new and important improvement in producing paper pulp from wood, and consists in pulverizing the wood by bringing it in contact with a revolving cylinder provided with a grating filling or scraping surface, and in vibrating the scraper longitudinally for changing the cutting or scraping surface of the cylinder on the wood, and also in a revolving cleaning cylinder.

FEATHER RENOVATOR.—Enoch Colvin, Paulet, Vt.—This invention relates to an improved apparatus for renovating feathers, and consists in subjecting them to the action of steam and heated air.

CARRIAGE TIRES.—William Williams, New York city.—This invention relates to a new and useful improvement in carriage tires, whereby they are made much more useful than they have heretofore been, and it consists in providing the tire with a flange for keeping the tire in place on the wheel, and also for protecting and strengthening the wheel.

SAFETY HAT.—James J. Giltenan, Cincinnati, Ohio.—The object of this invention is to so construct a hat that the wearer may be protected from danger from the sun's rays, and from excessive heating of the head; and it consists in making the hat with a double crown, and in inserting a sponge or other absorbent between the crowns for retaining moisture.

LOCK.—A. F. Pfeifer, Newark, N. J.—This invention has for its object to furnish a cheap, simple, and effective lock, designed especially for piano locks, sewing machine cases, and similar uses; and it consists in the combination of one or more hook or catch bolts, with the straight or sliding bolt of the lock.

BINDING ATTACHMENT TO HARVESTERS.—Wm. W. Snell, Brushford, Minn.—This invention relates to a new binding attachment, which is more particularly intended to be applied to the Marsh Harvester, but which may as well be used on any of the other harvesters now in use. It is arranged to operate entirely automatic, and will adjust itself to suitable size of bundles as they may be desired.

AUTOMATIC BOBBIN BUILDER FOR SPINNING JACK.—Oliver Brothers, Nautuck, Conn.—This invention relates to a new machine for automatically winding the yarn around the bobbins of wool-spinning machines; its object being to do away with the necessity of imparting oscillating motion by hand to the follower or thread guide.

PROCESS OF MAKING SHEET-METAL PANS.—C. Hodgetts, Brooklyn, N. Y.—The object of this invention is to avoid the weakening of the bottoms of sheet-metal pans; and the invention consists in forming a circular depression in the sheet metal plate from which the pan is to be struck, and in then bending up the sides of the pan, the depression remaining in the bottom at the junction of the same with the sides.

ROD COUPLING.—G. Thompson, Shamburg, Pa.—The object of this invention is to produce a device for connecting two rods, which are used as pump rods in oil wells, salt works, or for any other suitable purpose. It consists in the use of two clamps in which the ends of the rods are respectively held, the clamps being provided with male and female screw threads, or equivalent means, to enable their being connected; each clamp is constructed by cutting a wedge-shaped long recess into the lower end of a somewhat conical metallic block, and in forming lugs on the sides of such recess.

PROCESS OF MANUFACTURING PYROLIGNEOUS OR ACETIC ACID.—C. C. Parsons, New York city.—This invention relates to a new process of making acetic acid, and more particularly to a new manner of agitating and purifying the same, also to the application of electricity to the process.

VELOCIPEDE.—John A. Topliff and George H. Ely, Elyria, Ohio.—The object of this invention is to so construct a velocipede that it may be instantaneously transformed into a two or three-wheeled vehicle, as the rider may desire, and while in motion. It consists in providing a rear axle, which is bent, so as to be somewhat V-shaped, and in loosely hanging a wheel on each one of its inclined ends. When the axle is turned by suitable leverage provided for that purpose, so that its middle part is higher than its ends, the wheels will be both in the middle, and the tires will come together, so that the two rear wheels will constitute but one single wheel, making the velocipede a two-wheeled one, or, at least, one that possesses all the advantages of a two-wheeled velocipede.

CAR COUPLING.—W. J. Blackman, Columbus, Miss.—This invention relates to improvements in car couplings, by which it is designed to provide an arrangement by which the several cars of a train may be uncoupled by the engineer, while at his post on the engine, by means of hand levers and suitable connections, or by the brakemen on the several cars by a foot-pressing apparatus; and also certain improvements in the coupling apparatus.

CHURN.—W. D. McFadden, Senatobia, Miss.—This invention relates to an improved method of operating a vertically reciprocating churn dasher from a rotary driving mechanism.

FURNACES AND TOOLS TO BE USED FOR METALLURGIC PURPOSES.—Wm. Yates, Westminster, England.—This invention relates to improvements in the furnaces and rods to be used in metallurgic operations, and more particularly to puddling, converting, and reheating furnaces, in which iron and steel are operated upon, and consists in constructing such furnaces, or protecting their inner surfaces by a lining, so that they will be better able to resist the great heat to which such furnaces are exposed in metallurgic operations.

CAR BRAKE.—J. W. W. Smith, Canton, Mo.—This invention relates to improvements in car brakes, whereby it is designed, by the employment of a cylinder having a tapered hole through it longitudinally and fitted to an axle having a corresponding taper, to provide a simple and effective brake, the said cylinder being provided with means for sliding on the said tapered shaft so as to cause it to adhere by the frictional contact therewith, and rotate with it, thereby winding up cords or chains attached to the brakes, or to free it from the said frictional contact.

CAR COUPLING.—T. Caldwell and L. C. Wilcox, Buffalo, N. Y.—This invention relates to a new and improved car coupling of that class which are commonly termed "self-coupling," and it consists in a peculiar construction and arrangement of parts.

GATE.—E. B. Scattergood, St. John's, Mich.—This invention relates to a new improved method of constructing and hanging farm gates, whereby they are rendered much more useful and convenient than gates of ordinary construction.

SELF RAKE FOR REAPING MACHINES.—Edwin H. Smith, Westminster, Md.—The object of this invention is to provide a simple and effective self rake attachment for reaping machines, which, deriving its motion from the main drive wheel of the reaper, will obviate the necessity of employing an extra hand to rake off the grain as it falls on to the reaper platform.

VELOCIPEDE.—Isaac Samuels, Marysville, Kansas.—This invention relates to a new velocipede, which is set in motion by turning cranks by hand, and which is steered by the lower extremities of the occupant. The invention consists in the general construction and arrangement of parts, whereby the desired result—namely, causing the instrument to move rapidly with the application of but very little exertion, is obtained in a simple and efficient manner.

CULTIVATOR.—William Day, Morristown, N. J.—This invention relates to a new instrument for tilling the ground between rows of corn, potatoes, strawberries, onions, or any other similar plants, and consists in so arranging the draft above the wheels that a great leverage is obtained whereby the teeth or shovels of the instrument can be forced into the ground to any desired depth. The cultivators heretofore in use could not be made to do more than barely scratch the ground, a thorough overturning of the soil not being possible by their use, while this instrument will turn the soil to any desired depth in the most thorough manner.

SOFA BED.—B. L. Southack, New York city.—The object of this invention is to construct a sofa bed, in which the back of the sofa is used to form part of the bed bottom, in order to convert the sofa into a bedstead; the whole article has not to be moved off the wall near which it stands. This is a great inconvenience in the sofa beds now in use, and to overcome it is the chief object of this invention.

NEW PUBLICATIONS.

ELEMENTS OF GEOMETRICAL OPTICS. By N. F. Dupuis, M.A., Astronomical Observer to Queen's College, Kingston, Canada.

This is an abstract work, suited to the wants of students, engineers, surveyors, and astronomers, who wish to understand fully the principles upon which optical instruments are constructed. It contains concise formulae and useful problems for solution.

The **NATIONAL NORMAL** is the name of a new educational monthly, published at 176 Elm street, Cincinnati, Ohio, by R. H. Holbrook, who is also its editor. Mr. Holbrook has a wide reputation as an able writer upon educational matters, and the first three numbers we have received seem well adapted to the wants of the professional teacher. We commend this publication also to parents and others interested in educational improvement, as containing information and instruction that may be usefully applied to home education and family discipline, and as being calculated to elevate the standard of popular instruction.

The **ATLANTIC MONTHLY** for March has excellent articles by T. W. Higginson, Mrs. Stowe, Dr. Bowditch, James Freeman Clarke, James Parton, C. P. Cranch, and other well-known writers.

BROOKLYN MONTHLY.

A new candidate for popular support, and in all respects an excellent number. H. W. Love & Co., publishers.

Official List of Patents.

Issued by the United States Patent Office.

FOR THE WEEK ENDING FEBRUARY 23, 1869.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT OFFICE FEES:

On each caveat.....	\$10
On filing each application for a Patent (seventeen years).....	\$15
On issuing each original Patent.....	\$30
On appeal to Commissioner of Patents.....	\$50
On application for Reissue.....	\$50
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$50
On filing a Disclaimer.....	\$10
On an application for Design (three and a half years).....	\$10
On an application for Design (seven years).....	\$15
On an application for design (fourteen years).....	\$20

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay \$500 on application.

Patents and Patent Claims.—The number of patents issued weekly having become so great, with a probability of a continual increase, has decided us to publish, in future, other and more interesting matter in place of the Claims. The Claims have occupied from three to four pages a week, and are believed to be of interest to only a comparative few of our readers. The publication of the names of patentees, and title of their inventions, will be continued; and, also, as heretofore, a brief description of the most important inventions. We have made such arrangements that we are not only prepared to furnish copies of Claims, but full Specifications at the annexed prices:

For copy of Claim of any Patent issued within 30 years.....\$1
A sketch from 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.

The full 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 price of drawings, in each case, may be had by addressing
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87,083.—COMPOUND FOR REMOVING INK, STAINS, etc.—Victor G. Bloede, Brooklyn, N. Y.

87,089.—MACHINE FOR PLANTING COTTON SEED.—A. D. Brown, Sr., Columbus, Ga.

87,090.—SUGAR PRESS.—W. C. Bruson, Chicago, Ill.