

NEW PUBLICATIONS.

KEMLO'S WATCH REPAIRERS' HAND-BOOK: Being a Complete Guide to the Young Beginner in taking apart, putting together, and thoroughly cleaning the English Lever and other Foreign Watches, and all American Watches. By F. Kemlo, Practical Watchmaker. With Illustrations. Boston: A. Williams & Co., 100 Washington street.

This work contains information of practical importance to every one engaged in repairing watches. It is express, clear, concise, and comprehensive. While of special interest to the craft, it is also a valuable work for owners of watches. We need not instruct our readers that the man who understands a machine is the only one who can take proper care of it. The book before us is eminently adapted to give even the amateur a good understanding of the mechanism of the watch.

THE VELOCIPEDE: Its History, Varieties, and Practice. With Illustrations. New York: Hurd & Houghton.

A pleasantly-written, convenient, and entertaining little pamphlet, which will be sought for by enthusiasts in this sport.

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.

The original oil paintings, by Jerome Thompson, "Home, Sweet Home," "The Old Oaken Bucket," "Paddle Your Own Canoe," and "The Captive Child," will be sold without limit, at auction, on Friday, April 30, at 8 o'clock, at Fifth Avenue Art Galleries, cor. Fifth Ave. and 14th st., by John H. Draper & Co., Auctioneers, Hanover Square.

Henry Baughman, care Wm. C. Jessup & Co., Augusta, Ga., wishes to obtain a sand belt for smoothing spokes.

Map Engravers—Address Box 29, Greensboro', Ala.

A Machinist and Draftsman desires a situation as Draftsman. Address Paul Whitney, Frankfort House, cor. Frankfort and William sts., New York city.

Wanted—Parties to manufacture a new patent braider foot for sewing machines. Address D. Coon, Postoffice Draw 52, Ogdensburg, N.Y.

Rossing Machine.—Manufacturers of machines for rossing bark of saw logs, send circulars to J. R. Hoffman & Bros., Fort Wayne, Ind.

Blue Rapids.—The best mill power in Northern Kansas, with 27 acres of land, for sale, near a railroad. Address R. S. Craft, Holton, Kansas.

"Grindstones—How to Hang and Use them Properly." Send for descriptive pamphlet. J. E. Mitchell, 310 York Ave., Philadelphia.

For sale at a bargain—a complete barrel factory, nearly new. Address Hartmann, Laist & Co., Cincinnati, Ohio.

Rubber Tire for velocipedes and light carriages upon a new principle, obviating all objections. H. G. Tyer, India-rubber Manufacturer, Andover, Mass., and 86 Pearl st., Boston.

Foreman Wanted.—A young man that has had some experience as Foreman in a machine shop, competent to superintend the construction of large machinery, apply to Murray, Moore & Co., Portsmouth, Ohio.

Reckart's Patent Hub Lathe.—A matchless sweep. For descriptive circular, giving full particulars, address J. M. Scribner, Ag't, Middleburgh, N. Y.

Wanted—Steady employ for portable saw mill, 3 to 5 years' contract, by the thousand. Address Box 8, Ablon, Erie Co., Pa.

Sieve-hoop makers address Reimer & Holdsworth, 57 Fulton street, New York city.

Wanted—A situation by a first-class Electro Gold and Silver Plater. Address H., Box 178, Waterbury, Conn.

Riehle Bros., the Modern Scale Makers, successors to Banks, Dinmore & Co., 9 and Melon sts., Philadelphia. Circulars describing their recent Patents, & containing testamentary letters, sent free on application.

"Engineer."—You will save much oil and have none of the difficulty you speak of, if you put on one of "Broughton's" Lubricators, for which address H. Moore, 41 Center st.

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

J. D. Borin, Scottsboro, Ala., wants a first-rate Brick Machine.

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

A. B. Fisher, practical millwright, 9 Ross st., Brooklyn, E. D., N. Y. \$1 per year.—Inventors and Manufacturer's Gazette. The cheapest, best, and most popular journal of the kind published. Send stamp for specimen copy. Sattiel & Co., Publishers, P. O. box 448, or 37 Park Row, New York.

Machine for bending fellies—Patent for sale—the whole, or State Rights. Address DeLyon & Werner, Canton, Miss.

Diamond carbon, formed into wedge or other shapes for point ing and edging tools or cutters for drilling and working stone, etc. Send stamp for circular. John Dickinson, 64 Nassau st., New York.

The new method for lighting street lamps! For illustrated circular, with letter from President Manhattan Gas Light Co., and Supt of Lamps N. Y. City. Address J. W. Bartlett, Patentee, 569 Broadway, N. Y.

The Tanite Emery Wheel.—For circulars of this superior wheel, address "Tanite Co.," Stroudsburg, Pa.

The manufacture and introduction of sheet and cast metal small wares is made a specialty by J. H. White, Newark, N. J.

The Magic Comb will color gray hair a permanent black or brown. Sent by mail for \$1.25. Address Wm. Patton, Treasurer Magic Comb Co., Springfield, Mass.

For coppered iron castings address J. H. White, Newark, N. J.

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.

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

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

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

Mill-stone dressing diamond machine, simple, effective, durable. Also, Glazier's diamonds. John Dickinson, 64 Nassau st., New York.

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 00 a year.

APPLICATIONS FOR THE EXTENSION OF PATENTS.

KNITTING MACHINE.—John Pepper, of Gilford, N. H., has petitioned for the extension of the above patent. Day of hearing, June 28, 1869.

MACHINE FOR MORTISING WINDOW BLINDS.—Joseph A. Peabody, of Philadelphia, Pa., has petitioned for the extension of the above patent. Day of hearing, June 28, 1869.

BRIDLE REIN.—Kingston Goddard, of Richmond county, N. Y., has applied for an extension of the above patent. Day of hearing, July 5, 1869.

REFRIGERATOR.—William Moultrie, of New York city, has applied for an extension of the above patent. Day of hearing, July 5, 1869.

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.

C. B., of Ohio.—The dampness of the wall of which you write us, will be hard to remedy entirely under the circumstances. A brick wall in contact with damp shaded soil, will always be damp. You can help matters, however, by digging down below the brick on the outside and painting over the wall with pitch, such as is used on ships' bottoms. On the inside put up studs, and lath and plaster a wall, leaving a space between it and the brick. The studs may be of inch boards, as the only object is to get a wall not in contact with the damp brick.

E. H. R., of Ill.—You are not the first who has considered the *vis formatrix*, of a crystal the same, except in degree, as that of plants and animals. Prof's Owen and Huxley entertain nearly the same view, but when you ask what is the cause of this power, you go farther than those vigorous intellects deem it possible for philosophical inquiry to receive an answer. That is a subject for faith, not for physical research.

W. A., of Ind.—The velocity of a 36-inch burr stone to do best work ought to be about 150 per minute. To grind ten bushels of corn per hour will require, according to Nicholson's "Operative Mechanic," about three horse power.

M. E. O. C., of Wis.—The pressure in a boiler per square inch when it blows off, is found by multiplying the weight into the long arm of the safety valve lever, and dividing the product by the product of the short arm into the area of the valve in square inches, or a proportion may be used. In the special case you mention, where the long arm is 30 inches the short arm 3 inches, the area of the valve 4 square inches and the weight 125 lbs., the proportion would be $3:30::125:1250$, the entire pressure sustained by the valve, which divided by 5 inches, the area of the valve, gives the pressure per square inch in the boiler.

F. U., of Ill.—Will coal soot cause water to harden in a cistern? Ans. In general it will not. If however, the soot precipitated on the roof comes from a zinc smelting furnace it might contain oxides which would effect the water. The probable cause is the use of cement containing soluble compounds of lime. All new plastered cisterns render water more or less hard for a time.

G. J. B., of Vt.—Water engines are a very old device; you will find them described in Ewbank's Hydraulics, and in various other works.—Spencer's Water meter is a small double cylinder engine operated by water instead of steam, with slide valves and eccentrics. The objection to these machines arise from the inelasticity of water, and the liability of parts working under water to wear, etc.

H. K., of Mich.—Try the alum and double for stopping holes in burr stones without the glue, the latter does harm rather than good. If the holes are large use some fragments of burr stone as part of the filling.

E. W. L. C., of Ohio.—Shellac dissolved in alcohol is a good cement to make paper labels adhere to tin. The varnish should be tolerably thick.

T. H. G., of N. Y. inquires, "Can any of your numerous readers inform me, why it is, that, although many patents have been obtained for aerial machines, we hear nothing of their practical results?" The reason is simply that all aerial machines up to this time have been practically worthless.

"Jersey Farmer" can obtain such information about sawmills as he wants, by putting an advertisement in the *SCIENTIFIC AMERICAN*.

C. S. H., of Pa.—You ask "What constitutes a day's work for a draftsman?" There is no rule in reference to it that we know of, but draftsmen in our office work about eight hours—That is as long as they ought to bend over the board.

F. W. Woodward, of Winnsboro, S. C., states that there is an excellent quarry of oil and white stone near him and wishes to correspond with manufacturers.

S. F. H., of Mass. wishes to know "If the earth in proportion to its size is not as smooth and finely polished as a cambric needle?" We answer that in our judgment it is, but if our correspondent has any doubt about it we advise him to submit the question to an experimental test, and inform us of the result. It is a subject that deserves to be investigated.

N. H. S., of N. Y.—Calcium was obtained by Matthiessen by the electrolytic decomposition of a mixture consisting of two equivalents of chloride of calcium and one equivalent of chloride of strontium. The mass may be fused in a Hessian crucible, in the center of which is placed a porous tube filled with the same mixture, and into this an iron wire passed through the stem of a tobacco pipe is inserted. This wire is connected with the platinode of a battery, the zincode of which consists of a plate of iron bent into a cylindrical form, and immersed in the melted mass exterior to the porous tube. The calcium is reduced and preserved from oxidation by so regulating the heat that a film of solidified salt shall form upon the surface of the mixture in the porous cell. Lies Bodart obtained it more easily by fusing iodide of calcium with an equivalent quantity of sodium. See Miller's Inorganic Chemistry, page 407.

S. U. B., of Mich.—There is no difficulty in superheating steam in pipes to 300° Fah., but it is doubtful if the temperature of a room for kiln drying can be kept, by that means, to that temperature. Much of the heat is lost by radiation. Direct heat from a properly constructed furnace is better than steam heat for kiln drying purposes.

N. F. P., of N. J.—We do not hold ourselves responsible for the statements of advertisers in our columns, under whatever head they may choose to address our readers. The "Business and Personal," is an advertising column; we do not feel at liberty to express an opinion as to the value of the devices therein mentioned, or on the character of the advertisers. Our opinion of the Whitlock Exposition is freely expressed on page 280, current volume, in an editorial article.

C. W. I., of Iowa, asks if there is any practical rule for the position of a water wheel in a "draft tube;" whether there is any point in such "tube" at which a wheel will give a greater percentage of power than at any other. We hardly know what this correspondent means. He may suppose that more force may be gained by conducting the power (head of water) through a tube, to the wheel, at a distance from the source, than in receiving it direct from the source, or fall; but it is evident that the closer the wheel to the force—the less friction and consequent waste—the more power will be delivered.

J. E. C., of Mass.—Malleable cast iron is simply ordinary cast iron subjected to a red heat for hours, or days, according to the size of the articles, they being packed in iron scales or pulverized specular iron ore, the object being to combine the oxygen of the oxide with the carbon of the iron. A visit to any malleable iron concern will show the *modus operandi* better than we can describe it in a column.

Recent American and Foreign Patents.

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

IMPROVEMENT IN MATCHES.—Our readers will recollect an article recently published in the *SCIENTIFIC AMERICAN*, headed, "Wanted—A Pipe Light." The endless match, patented by Wm. H. Rogers, seems calculated to meet this want as well as to take a prominent place among competitors for domestic use. This match is self-igniting, and combustible throughout its whole length; when lighted it can be extinguished and re-lighted as well as before, and so on until it is entirely consumed. The match, when in use, is taken from the case and slipped into a metallic tube, so arranged that the match can be thrust out as wanted; when used, it is put out by a small extinguisher, which is slipped over the end of the tube. It is a very convenient and safe arrangement. The flame is very persistent, and is not easily blown out. For smokers and travelers the new match is specially adapted. The composition for these matches was patented through the Scientific American Patent Agency October 27, 1868, and the tube, or safe, October 13, 1868. The agents for New York city are J. H. Tennant & Co., 221 Pearl street.

HOOP ADJUSTER FOR FORE-AND-AFT SAILS.—F. B. Dunton, Center Lincolnville, Me.—The object of this invention is to provide the means for causing the mast hoops of fore-and-aft sails to work more perfectly than was hitherto the case.

ONE-WHEELED VELOCIPEDE.—Henry S. Cohn, New York city.—This invention relates to a new one-wheeled velocipede, which is arranged with spokes diverging laterally from the tire, so that sufficient space is formed within the wheel and between the spokes for arranging the drivers' support, or seat, on the axle, and for operating the vehicle, by applying power to the said axle in a suitable manner.

GANG PLOWS.—Thomas J. Hall, Byron, Texas.—This invention relates to a gang plow, which is so arranged that the beams can be swung side-ways and up and down at will, and so that they can be permanently secured in any desired position.

MITER BOX.—Robert Burchell and Robert T. Burchell, Trenton, N. J.—The object of this invention is to provide an improved apparatus for guiding hand-saws in the operation of mitering strips of wood, as molding and the like.

BLOTTING PAD AND HAND REST.—Peter Gorsline, Elizabeth, N. J.—This invention relates to a new apparatus, which is to be attached to the hand of a writer, and which will form a convenient hand rest, and act as a blotter. The invention consists in the combination, with a place for holding them, of a strap and blotting pad.

CORE COMPOUND.—John I. Vinton, Altoona, Pa.—This invention relates to a new and useful improvement in material for making cores in iron and brass founding, and for all purposes for which cores are used in forming metal castings.

WINDOW CORNICE.—O. L. Gardner, New York city.—This invention relates to a new and useful improvement in cornices for supporting window curtains in dwellings and other buildings, the improvement having reference to a mirror frame, for which letters patent were granted to the present inventor, dated September 10, 1867.

VISES.—F. H. Furniss, Waterloo, N. Y.—This invention relates to improvements in vises, the object of which is to provide for more permanently holding those vises which are arranged to be adjusted to any angle relatively to the bench.

WASHING MACHINE.—W. B. Gardner, Almond, N. Y.—This invention relates to improvements in washing machines such as have a grooved roller, and a reciprocating curved and grooved board acting in conjunction therewith; and it consists in the application to the said grooved roller of a brake arranged to arrest the motion thereof when required to subject some part of the clothes to a greater amount of rubbing than other parts.

STEAM PUMP.—John McCloskey, New York city.—This invention relates to improvements in steam pumps, designed more especially for employment in buildings in connection with ranges, for elevating water where it is not attainable from reservoirs; but is also applicable for general use as a steam pump. It consists in the adaptation of one cylinder and two pistons for both the steam and water engine and in the valve mechanism.

PLOW.—G. M. Atherton, Friendsville, Ill.—This invention has for its object to furnish an improved plow, designed especially for plowing stumpy and rooty ground, but which shall, at the same time, be so constructed as to be adjusted for ordinary plowing.

COMBINED BOLT AND LOCK.—Darwin V. Miller, Weedsport, N. Y.—This invention has for its object to furnish an improved bolt and lock, which may be used either with or without a key, and which shall be simple in construction, easily operated, and, at the same time, burglar proof.

ROTARY OILING PUMP.—Alexander Shafer, Wellsville, N. Y.—This invention has for its object to furnish an improved device for introducing oil into the steam chest or cylinder of a steam engine, which shall be so constructed that the oil may be introduced in any desired quantity and at any desired time.

CLOTHES FRAME.—William A. Daggett, South Vineland, N. J.—This invention has for its object to furnish a simple, convenient, strong, and durable clothes frame, which shall be so constructed and arranged that when extended it may furnish a large drying surface, and when closed it may be shut up into small compass.

HEATER.—J. S. Van Buren, Norwich, Conn.—This invention has for its object to furnish an improved heater, which shall be so constructed as to utilize a much larger proportion of the heat developed by the combustion of the fuel than is possible with the stoves and heaters constructed in the ordinary manner.

HEATER.—John H. Goodfellow, Troy, N. Y.—This invention has for its object to furnish an improved base-burning heater, simple in construction, and effective in operation, utilizing almost entirely the heat in the products of combustion before they escape into the chimneys.

ATTACHING HORSES TO CARRIAGES.—C. McElroy, New Baltimore, Mich.—This invention has for its object to furnish an improvement in the manner of attaching horses to carriages, by means of which the horse can be easily and quickly attached and instantly detached when required, which shall be safe and reliable, and, at the same time, will dispense with the use of the ordinary traces and whiffletrees.

TABLE ATTACHMENT FOR BEDSTEADS.—Mrs. E. D. W. Hatch, Chicago, Ill. The invention has for its object to furnish a simple and convenient table for attachment to bedsteads, lounges, etc., designed especially for invalid use, which shall be so constructed and arranged that it may be adjusted high or low, or in position as the convenience of those using it may require.

STOVE SHIELD.—Edward C. Stoddard and John R. Hoyt, Woodbury, Conn.—This invention relates to a new attachment to stove pipes, which has for its object to prevent the overheating by the pipes of wooden mantelpieces, or other combustible devices near which the pipe may be arranged. The invention consists in the use of sheet metal, or other plate or shield, suspended at the side from the stovepipe, so that an air space is formed between the pipe and shield.

NOZZLE FOR SHEET-METAL CANS.—Charles Pratt, New York city.—This invention has for its object to produce an improved seal for the nozzles of sheet-metal cans, such as are used for the transportation of a certain branch of burning oils, which, when removed from the nozzle, will leave evidence of its having been used.