

**Facts for the Ladies.**—Mrs. H. F. Taylor, Brasher Falls, N. Y., has used a Wheeler & Wilson Lock-Stitch Machine since 1858 in dress-making and family sewing, without any repairs and has broken but 2 needles in 13 years. See the new Improvements and Woods' Lock-Stitch Ripper.

**Burnett's Cocaine** gives new life to the hair.

To Lead all Competitors is the aim of the proprietors of the New Wilson Under-Feet Sewing Machine. It is founded on the very best principles known to the sewing machine science, and improvements, in advance of all other sewing machines, are being adopted constantly. The Wilson is rapidly gaining the preference of all parties that are acquainted with sewing machines, and it has already taken the front rank among the first-class machines of this country; and its price, owing to its being manufactured where labor and material are much cheaper than in eastern cities, is fifteen dollars less than all other first-class machines, which fact alone is sufficient to induce all to examine the New Wilson before buying any other. Sales-room, 707 Broadway, New York; also for sale in all other cities in 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.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$4 00 a year. Advertisements 17c. a line.

The best recipes on all subjects in the National Recipe Book. Post paid, \$2.00. Michigan Publishing Company, Battle Creek, Mich.

The official report of the Master Mechanics' Association will be published in full in the RAILROAD GAZETTE, 72 Broadway, New York, beginning July 6. Send \$1.00 for 3 months' subscription.

We will Remove and Prevent Scale in any Steam Boiler or make no Charge. Two Valuable Patents for Sale. Geo. W. Lord, Phila., Pa.

Wanted—To hear from parties who make a specialty of manufacturing small patent articles. Address H. D. Chance, Llewellyn, Pa.

Steam Boiler and Pipe Covering—Economy, Safety, and Durability. Saves from ten to twenty per cent. Chalmers Spence Company, foot East 9th Street, New York—1202 N. 2d Street, St. Louis.

"Anti Lamina" will clean and keep clean Steam Boilers. No injury to iron. Five years' use. J. J. Allen, Philadelphia, Pa.

For Sale—To R. R. Contractors: Two second hand direct-acting Locomotives, 12 tons and 20 tons weight—in good running order. Address Grice & Long Loco. Works, 1318 Beach St., Philadelphia, Pa.

For Hydraulic Jacks and Presses, New or Second Hand, send for circular to E. Lyon, 470 Grand Street, New York.

For Marble Floor Tile, address G. Barney, Swanton, Vt.

Wanted—A 2d Hand Boiler of about 3 horse power. Whitney Arms Company, New Haven, Conn.

Wanted—A situation under instructions in draughting room by a young man who is a machinist. Address J. S. C., care of B. F. C., Princeton, New Jersey.

For the simplest, cheapest, and best Rotary Pump in use for thick or thin liquids, send for circulars to Hersey Brothers, So. Boston, Mass.

Wanted—Iron Planer, of 5 to 6 ft. square by 12 to 16 ft. long, capacity. Must be new, or as good. Will exchange for some choice selected lands situated within 5 to 10 miles of Rail Roads in Northern Iowa. John Cooper & Co., Mount Vernon, Ohio.

The best Bolt Forging Machines are those that work vertical, and forge Bolts any length horizontally. For such, address John R. Abbe, 39 Charles Street, Providence, R. I.

To Capitalists—Two valuable Patent Rights for Sale or exchange for other property. For particulars, address John J. Baringer, Germantown, Columbia Co., N. Y.

Upright Drills—The best in the world. Built by Hawes Machine Co., Fall River, Mass. Send for Circular.

For the most beautiful Site, Building, and Water Power for manufacturing purposes, address Harris Brothers, Newport, N. Y.

Three fourths saving of fuel, by the Ellis Vapor Engine (Bisulphide of Carbon) in running the Haskins Machine Co.'s Works, Fitchburg, Mass. To whom apply.

Old Furniture Factory for Sale. A. B., care Jones Scale Works, Binghamton, N. Y.

Steel Castings to pattern, strong and tough. Can be forged and tempered. Address Collins & Co., 212 Water Street, New York.

The Waters Perfect Steam Engine Governor is manufactured by the Haskins Machine Co., Fitchburgh, Mass.

Presses, Dies, and Tinners' Tools. Conor & Mays, late Mays & Bliss, 4 to 8 Water st., opposite Fulton Ferry, Brooklyn, N. Y.

Portable Baths. Address Portable Bath Co., Sag Harbor, N. Y.

Standard Twist Drills, every size, in lots from one drill to 10,000, at 1/2 manufacturer's price. Sample and circular mailed for 25c. Hamilton E. Towle, 30 Cortlandt st., New York.

If you want to know all about the Baxter Engine, address Wm. D. Russell, office of the Baxter Steam Engine Co., 18 Park Place, N. Y.

If you want a perfect motor, buy the Baxter Steam Engine.

Manufacturer's and Mill Supplies of all kinds. Greene, Tweed & Co., 18 Park Place, New York.

Blake's Belt Studs. The best fastening for Leather or Rubber Belts. 40,000 manufacturers use them. Greene, Tweed & Co., 18 Park Place, New York.

Brown's Coal-yard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W. D. Andrews & Bro., 414 Water st., N. Y.

Mining, Wrecking, Pumping, Drainage, or Irrigating Machinery, for sale or rent. See advertisement, Andrew's Patent, inside page.

For Tri-nitrolycerin, insulated wire, exploders, with pamphlet, as used in the Hoosac Tunnel, send to Geo. M. Mowbray, North Adams, Mass.

Machinery Paint, all shades. Will dry with a fine gloss as soon as put on. \$1 to \$1.50 per gal. New York City Oil Company, Sole Agents, 116 Maiden Lane.

All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue.

For Steam Fire Engines, address R. J. Gould, Newark, N. J.

In the Wakefield Earth Closet are combined Health, Cleanliness and Comfort. Send to 36 Dey St., New York, for descriptive pamphlet.

To Ascertain where there will be a demand for new Machinery, Mechanics, or manufacturers' supplies, see Manufacturing News of United States in Boston Commercial Bulletin. Terms \$4.00 a Year.

Dry Steam, dries green lumber in 2 days; tobacco, in 3 hours; and is the best House Furnace. H. G. Btkley, Patentee, Cleveland, Ohio.

The Patna Brand of Page's Patent Lacing is the best. Orders promptly filled by the Page Belting Co., No. 1 Federal St., Boston.

Absolutely the best protection against Fire—Babcock Extinguisher. F. W. Farwell, Secretary, 407 Broadway, New York.

Williamson's Road Steamer and Steam Plow, with Rubber Tires. Address D. D. Williamson, 32 Broadway, N. Y., or Box 1809.

Belting as is Belting—Best Philadelphia Oak Tanned. C. W. Army, 301 and 303 Cherry Street, Philadelphia, Pa.

Diamond Carbon, of all sizes and shapes, furnished for drilling rock, sawing stone, and turning emery wheels or other hard substances also Glazier's Diamonds, by John Dickinson, 64 Nassau st., New York.

Boynnton's Lightning Saws. The genuine \$500 challenge. Will cut five times as fast as an ax. A 6 foot cross cut and buck saw, \$6. E. M. Boynnton, 80 Beekman Street, New York, Sole Proprietor.

The Baxter Steam Engine is safe, and pays no extra Insurance.

Peck's Patent Drop Press. For circulars address the sole manufacturers, Milo, Peck & Co., New Haven, Ct.

Better than the Best—Davis' Patent Recording Steam Gauge. Simple and Cheap. New York Steam Gauge Co., 46 Cortlandt St., N. Y.

The most economical Engine, from 2 to 10 H.P., is the Baxter.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

For hand fire engines, address Rumsey & Co., Seneca Falls, N. Y.

**Notes & Queries.**

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.]

1.—COLORING LINSEED OIL.—How can I color linseed oil red or brown? Aniline in alcohol will not do.—J. P. W.

2.—TAXIDERMY.—How are birds and animals stuffed?—J. H. Y.

3.—CLEANING MARBLE.—What is the best way of cleaning polished marble slabs from grease, oil, or red wine stains?—C. R.

4.—POLISHING KNIVES.—Will some one inform an old subscriber how the English polish is put on knives, how the wheels are made and what kind of leather should be put on?—J. G.

5.—WALNUT STUMPS.—What is the value of walnut stumps and in what shape should they be sent to market? Are the white walnut, black walnut, or butternut the most valuable?—E. C.

6.—VINEGAR.—Will some practical man inform us of the best mode of making vinegar from the best materials, that the public may not continue to be poisoned by vitriolic and other mixtures?—G.

7.—SKIN DISEASES.—I notice in your paper of May 11th, 1872, a communication from a sufferer from skin disease, attributing the cause to the use of a certain kind of soap. I am one of many shop mates who have the same disease, and I think we contracted it from using sand paper, as it is altogether on the hands. I have had it two months, and have had two of our best doctors here at work on me, but without success. What they give me to use are washes for the hands, which apparently drives it away for a few days; but just as soon as I commence to work, out it comes again. I have been using carbolic acid and glycerin, bathing the hands in strong salt brine, nitrate of lead, and sulphuret of potassium; the latter apparently does the most good, but the cure is not permanent. We should be grateful to you if you could get, from some of your eminent physicians in New York, a radical cure. I think some medicine should be taken to purify the blood, but both the doctors I have seen do not give me any.—C. N.

**Answers to Correspondents.**

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 100 a line, under the head of "Business and Personal."

ALL references to back numbers must be by volume and page.

J. D., and others.—Multiply together the area of the piston in inches, the mean boiler pressure in pounds per square inch, the length of the stroke in feet, and the number of strokes per minute; divide by 33,000 and you have the horse power of your engine.

To R. P. P.—There are positive and negative poles to the induced currents of the electrical machines that you speak of. As to method of manufacture, consult books on electricity. It is not new to place a wheel at the bow of the canal boat, nor to have side pieces extended forward to prevent lateral movement of swell or waves. This plan was illustrated in last volume of SCIENTIFIC AMERICAN.

W. S. M.—The clearest and most dense ice will keep the longest and produce the most refrigeration. Placed in water, the temperature produced by two cubes of ice, one of porous or snow ice, the other of dense clear ice, will be the same. But the clear ice will refrigerate a larger quantity of water than the porous ice.

MILK SOURED BY A THUNDER STORM.—Milk, beer, and other fluids turn sour by oxygenation. After a thunder storm there is always in the air a considerable excess of ozone, which is oxygen in its most active condition, ready to attack any matter that can be affected by it.—D. B., of N. Y.

PROPORTIONS OF STEAM ENGINE.—D., query 5, page 26, is informed that James Watt determined that the condenser and air pump should each have one eighth the capacity of the cylinder. In more modern practice, however, the air pumps are made larger, especially in marine engines. Some engineers also make their condensers larger, but the practice is not justified by any economical result.—D. B., of N. Y.

DIMENSIONS OF BELT.—Query 7, page 416, Vol. XXVI.—W. J. S. can ascertain the width of belt required for his purpose by calculation from the speed of his driving pulley. A belt one foot wide running at the speed of seventy feet per minute will develop one horse power; a belt three inches wide, to develop the same power, must run of course at 280 feet per minute.—T. L., of Mass.

GILDING ON GLASS.—In answer to J. F., query 5, page 416, Vol. XXVI., I would say that gilding on glass is done by the use of what is termed a water size, made by the use of some mucilaginous substance, such as the white of egg reduced with water. I conclude that English gelatin is best, but great care is necessary not to make it too strong; and it should be perfectly clean, therefore straining it through thin muslin is a good precaution. The gilding is done upon the back side of the glass. First clean the glass perfectly with alcohol; then apply the sizing with a flat camel hair brush, and immediately lay the gold leaf. Stand the glass on edge and allow the surplus size to settle from under the gold. The gold will flatten and have a burnished appearance. When dry, lay

out your designs on paper and transfer by the use of some sharp pointed instrument, pricking through the paper; then paint your design on top of the gold; asphaltum varnish is a good material for that purpose. When that is dry, wash off the surplus gold, and shade the letters or other design with paint of any color desired and let it dry. If you desire a colored ground, then paint the whole surface with the color desired. Experience is necessary for this class of work.—R. F., of Mass.

OCEAN CABLES.—H. F. H., query 1, page 416, Vol. XXVI.—The Atlantic cables mostly lie at the bottom of the ocean, but there are many stretches between the submarine mountain peaks. The specific gravity of the cable causes its sinking and remaining at the bottom of the sea.—E. H. H., of Mass.

CEMENT FOR LETTERS ON GLASS.—To J. F.—This is frequently made by diluting white of egg with water to a suitable degree of fluidity, and adding a little carbolic acid to prevent decomposition, and then filtering. Paint the glass by means of a badger hair brush, allow it to partially dry, and apply gold or silver leaf, and allow it to become thoroughly dry. Now put on the stencil plate, and with a needle point mark out, down to the glass, the letters or design. Then put the whole plate into a shallow dish of tepid water, and by means of a stick, finger, or finger nail, etc., rub off the extraneous metal, and you will have your perfect letters left, and if the cement has not been too thick, with a perfect brilliancy.—E. H. H., of Mass.

SLACK COAL AND SAWDUST.—To J. F. T.—Mix them together with enough gas tar to stick and make into bricks. A machine like the pug mill of a brick machine would do, or indeed a brick machine at once would probably answer, especially such a one as would press the mass into a mold, and not such as would drive out the stuff in a stream, then to be cut with wires. This last style of machine would inevitably make very poor work, but by the former you would get, I think, a solid fuel, and only take a very small quantity of the cheap tar.—E. H. H., of Mass.

SLACK COAL AND SAW DUST.—J. F. T. can burn all his sawdust for fuel if he has proper grates and has a good draft to his fire box. I am sawing green hemlock with a five feet circular saw, and burn every bit of sawdust made. I use no coal or extra fuel.—N. J., of N. Y.

CUTTING STEEL AUGERS, ETC.—To A. V., query 10, page 354, Vol. XXVI.—I would say, first, that the diameter should vary with the diameter and pitch of thread, and should be about two inches for threads from 24 to 32, three inches from 16 to 24. The number of revolutions should be from 12,000 to 16,000 per minute, and a pulley 2 x 2 (on a steel arbor running in Babbitt boxes) will be large enough to run it. A. V. will find he will have to harden his cutters and temper to a straw color in order to have them stand.—C. M. P., of Mass.

TEST FOR ZINC.—To J. B.—The simplest method for an amateur to employ is probably to evaporate a gallon of water to dryness, put the residue on to a platinum wire, and moisten with a solution of potassium carbonate. Apply the blowpipe flame, and the little mass will yield a green colored appearance if zinc be present. Other means of testing are adopted, but to any but a professional will be found complicated. The presence of five grains in a gallon would eventually prove injurious, but it would probably be only after a lengthened use of such water. The antidote for acute zinc poisoning is the exhibition of an emetic, and afterwards the drinking copiously of albuminous fluid and large doses of tannin or oak bark tea, etc.—E. H. H., of Mass.

UNITED STATES COINAGE.—To F. R. E., query 16, page 10.—Copper cents were issued first in the year 1793 and ceased in 1857. In 1815, there were none coined. The half cents made their first appearance in 1793, and were discontinued in 1857. In 1793, 1801, 1812 to 1824 inclusive, and 1852 there were none coined except a few pattern pieces in 1813, 1833, 1840, and the eight succeeding years, and 1852. The eagle head nickels were first issued in 1857, and in 1859 were supplanted by the Indian head.—E. T. P., of N. Y.

**Recent American and Foreign Patents.**

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

HORSE SHOE NAIL CLINCHER.—Wm. H. Lyman, Springfield, Mo.—Many efforts have hitherto been made to construct this tool so as to afford the greatest leverage to the hand of the smith, to avoid side strain upon the screws and pivots, and to prevent the liability of the jaws to slip from the nail. Some clinchers have one of these advantages and some another, but none have hitherto combined them all. This clincher has the following advantages: 1st: It is constructed so as to take off all side strain from the fastenings screws or pivots and thus to allow none of the parts ever to lose their true relative position to the others. 2nd: It is provided with double leverage jaws, so that the grip of one hand will easily and accurately clinch the nail. 3rd: It has a peculiar shape of underjaw which prevents that jaw from slipping and causes it to rock on the nail head. The effect of these several advantages is to give the smith complete control of the horse's foot, while he is being shod to enable him always to turn off perfect work, and with a furnish him with a most durable tool that is not liable to get out of order.

HARVESTER REEL.—George S. Grier, Milford, Del.—The invention consists in supporting an adjustable reel by means of a pivoted crank shaft, which passes through the hollow shaft of said reel and moves up or down with it.

FIRE KINDLER CASE.—David W. Thompson, St. Joseph, Mo.—The invention consists of a screw capped can for holding the oil and kindler, so that the former is prevented from spilling or waste in the event of the can being accidentally upset, and the latter is kept from rattling or moving about in the can while the can is being handled; at the same time the kindler is always saturated and ready for use.

ROSSING MACHINE.—Charles Gilpin and James T. Hill, Cumberland, Md.—The invention consists in causing the knife of a rossing machine to change its position automatically according to the thickness of bark passing between the rolls, and in the peculiar arrangement of devices by which this new idea is carried out.

PEANUT AND COFFEE POLISHER.—Benjamin F. Walters, Norfolk, Va.—The invention consists in combining a rotary and stationary brush with a feed hopper, so that coffee or peanuts may be readily, conveniently and effectually polished for market.

CIRCLE FOR CARRIAGE.—Edwin Wilson, Prattsburg, N. Y.—This invention relates to an improved method of connecting the reach, front axle, head block and circle of a carriage. The reach and head block are rigidly attached to a three armed plate or strap which rests upon the circle. The straight part of the circle is attached by clips and yokes to the axle. The ring bolt is attached to the upper side of this straight part, and passes through the strap and the head block. The whole is strengthened by braces.

COVERING TUBULAR FABRICS WITH RUBBER.—William H. Bates and Hugh Faulkner, of Leicester, England, assignors to Ezra Thomas Sawyer, of East Hampton, Mass.—This invention relates to a new machine for applying an outside coating of india rubber, gutta percha, or other analogous elastic gum to tubular fabrics that are to be made water tight. It is more particularly adapted to, and intended for, the manufacture of rubber hose, but may also be used for other tubular fabrics. The tube to be covered has a core placed within it and is joined at the ends. It is passed over two drums, and by their means carried repeatedly through the waterproofing solution, drying cylinders, and an annular scraper until the covering is thick enough.

WATER WHEEL.—James P. Lamoree, of Mexico, N. Y.—This invention relates to that class of water wheels in which the buckets are arranged in diametrical pairs, and are thrust in and out as they rotate. It consists in adjusting the throw of the buckets so that the maximum protrusion thereof takes place at different points, which is accomplished by means of a shaft, axle and axis which are arranged adjustably in a rectangular slot in the middle part of each pair of buckets.