

## Business and Personal.

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

Edge Tool Makers' Grindstones, at Mitchell's—Philadelphia.

Grindstones for dry grinding, at Mitchell's—Philadelphia.

Kitchen Grindstones—best in use—Mitchell, York Av.—Phila.

Wants Machinery for Small Machine Shop—and economical Steam Power, to run same. Address W. C. Freeman, Louisiana, Mo.

Patent Hydraulic Rams of double action, with Balanced Valves for Fountains, &c., by addressing C. Hodgkins, Marlborough, N. H.

Wanted a first class second-hand Iron Planer, to plane from 4 to 6 feet. Address, with price, A. H., care Geo. Scott, 49 Ann St., N. Y.

Wanted—Address of Manufacturers of Elastic Webbing. W. H. Woodworth, Pewamo, Ionia Co., Mich.

Fire proof Safe Patent for Sale.—This ingenious and valuable invention affords greater protection against fire than any ever devised, while at the same time the safe is perfectly dry. For circulars, address T. Hyatt, 6 Wooster street, N. Y.

I will invest capital and services in an approved manufacturing monopoly that can be prosecuted in Providence, R. I. Address J. Waldron, P. O. Box 56, as above.

Machinery, Lathes, Presses, reduced prices; also sets Castings for foot Power lathes, &c., 7 & 8c. lb. Address J. Dane, Jr., Newark, N. J.

Patent Adjustable Plow Back-band Hook. Entire right for sale. Pat. Oct. 3, '71. Henry Beagle, Jr., 410 North 5th st., Philadelphia, Pa.

Wanted—a second hand 5 foot Iron or Copper Vacuum Pan, without air pump—for sugar. Ransom Syphon Condenser Co., Buffalo, N. Y.

For Sale, at a great bargain—a valuable Patent for adjustable Wheels and Axles for R. R. Cars: The whole right for U. S., and privilege of taking out European Patents. Address W. Hadgin, Athens, Ga. Has been pronounced the best thing out.

Taft's Portable Hot Air Vapor and Shower Bathing Apparatus. Address Portable Bath Co., Sag Harbor, N. Y. Send for Circular.

Shoe Peg Machinery. Address A. Gauntt, Chagrin Fall, Ohio. We will remove and prevent Scale in any Steam Boiler, or make no charge. Geo. W. Lord, 107 Girard ave., Philadelphia, Pa.

Use Soluble Glass for fireproofing Wooden Pavements, Shanties, R. R. Bridges—also as common hardening Mortar and Cements, makes most durable Stove and Foundry Putty, Iron Cement. Apply to L. & J. W. Feuchtwanger, Chemists, 55 Cedar street, New York.

Bailey's Star Hydrant has superior merits to all others. Address G. C. Bailey & Co., Pittsburgh, Pa., for descriptive circulars and prices.

Bishop's Tight Work Stave Machine saws 8,000 staves per day, lengthwise of the grain, without planer. Staves smooth. Address Beach & Bishop, Menasha, Wis.

Builder's Scaffold—Patent for Sale—For further particulars, address Redick & Kunkle, Butler, O.

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

The Oil used on all the Machinery at the A. I. Fair is from Chard & Howe, 134 Maiden Lane, New York. Ask them how it works.

Sign Factory—The largest Metal Sign Factory in the world. Orders solicited. Rates low, and work executed with despatch. R. A. Adams, 132 South 5th Avenue, New York.

Walrus Leather, for Polishing Steel, Brass, and and Plated Ware. Greene, Tweed & Co., 18 Park Place, New York.

Turkey Boxwood pieces for Sale, suitable for engravers and fancy turners' use. Address Stephens & Co., Riverton, Conn.

Patent Felt Floor Carpeting. C. J. Fay, Camden, N. J.

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

The best lubricating oil in the world is Winter pressed Sperm. Sold in bottles, cans, and barrels, by Wm. F. Nye, New Bedford, Mass.

Presses, Dies, and all Can Tools—Ferracute Works, Bridgeton, N. J.

Vinegar—how made—of Cider, Wine, or Sorgo, in 10 hours F. Sage, Cromwell, Conn.

Best Oak Tanned Leather and Vulcanized Rubber Belting. Greene, Tweed & Co., 18 Park Place, New York.

To Cotton Presses, Storage Men, and Freighters.—35-horse Engine and Boiler, with two Hydraulic Cotton Presses, each capable of pressing 35 sales an hour. Machinery first class. Price extremely low. Wm. D. Andrews & Bro., 414 Water st. New York.

Self-testing Steam Gauge.—The accuracy of this gauge can be tested without removing it from its connection with the boiler. Send circular. E. H. Ashcroft, Boston, Mass.

Ashcroft's Low Water Detector. Thousands in use Price, \$15. Can be applied for less than \$1. Send for Circular. E. H. Ashcroft, Boston, Mass.

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

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

Over 1,000 Tanners, Paper-makers, Contractors, &c., use the Pumps of Heald, Sisco & Co. See advertisement.

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

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

Improved Foot Lathes, Hand Planers, etc. Many a reader of this paper has one of them. Selling in all parts of the country, Canada, Europe, etc. Catalogue free. N. H. Baldwin, Laconia, N. H.

Blake's Belt Studs. The cheapest and best fastening for Rubber and Leather Belting. Greene, Tweed & Co., 18 Park Place, N. Y.

Diamonds and Carbon turned and shaped for Philosophical and Mechanical purposes, also Glazier's Diamonds, manufactured and reset by J. Dickinson, 64 Nassau st., New York.

Line, Shafting, Pulleys, and Hangers. First class. Send for circulars and price lists. Greenleaf Machine Works, Indianapolis, Ind.

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

To Ascertain where there will be a demand for new Machinery, mechanics, or manufacturers' supplies, read Boston Commercial Bulletin's, Manufacturing News of the United States. Terms \$4.00 year

## Examples for the Ladies.

Mr. James Stewart, of Yonkers, N. Y., reports that a Wheeler & Wilson Machine, No. 38, under his charge, has been at-binding by steam for nearly 17 years, and will now do as much work as any machine, new or old, of any make. From September, 1868, to 1869, it bound 137,088 hats, and the operator earned \$654.17. The previous year she earned \$507.48.

Burnett's Flavoring Extracts can now be obtained of reliable grocers everywhere.

## 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 reference to back numbers must be by volume and page.

**PROPORTIONS OF TELESCOPE.**—Let E. T. N. query No. 15, Sept. 30, procure for the object lens, one of about  $\frac{1}{2}$  an inch focal distance, another for the amplifying lens,  $2\frac{1}{2}$  inches focal length and  $1\frac{1}{2}$  inch diameter, and a third glass, 1 inch focal distance, to be placed next the eye. The distances at which these glasses should be placed from each other are as follows: The object glass should be placed at the end of a small tube, next the object, and the aperture or hole that lets in the light should not exceed one tenth of an inch in diameter. At a distance of about 7 inches from this glass, the amplifying should be placed; and the glass next the eye should be placed about  $1\frac{1}{2}$  inch from the amplifying lens; such a microscope, reckoning the combined eye glasses to magnify 6 times, and the object glass 14 times, will produce a magnifying power of 84 times in linear dimensions, and in surface 7,056 times. The stage and its supports may be made of wood, and the tubes of paper or very thin paste-board.—J. R. B., of Md.

**PASTING GLAZED PAPER.**—In answer to query No. 5, Oct. 21, if F. S. will mix a little honey in the paste, his object will be accomplished. W. R. J., of Pa.

**CLEANSING THE HAIR.**—Query No. 14, Oct. 21.—Barbers use carbonate of potash, known as salts of tartar, in water, to shampoo with. It is better to use a tablespoonful or two of common spirits of hartshorn, in a basin of water; then thoroughly wash the scalp and hair until they are clean; then wash with clean water, wipe dry, and apply a little oil or pomade.—W. R. J., of Pa.

**FRENCH POLISH.**—Let W. B. W. take one ounce of shellac, a quarter of an ounce of gum arabic, and a quarter of an ounce of gum copal; bruise them well, and sift through a piece of muslin; then put them, along with a pint of spirits of wine, into a closely corked vessel; place it in a very warm situation, and shake frequently every day till the gums are dissolved. Then strain through muslin, and keep well corked for use.—D. D., of Ohio.

**DIMENSIONS OF CYLINDER.**—W. G. N., query 20, Oct. 21, should multiply 231 (the number of cubic inches in a gallon) by the number of gallons, and divide the product by the height in inches. This gives the area of the cylinder. To find the diameter, divide the area by .7854, and extract the square root of the quotient. In reply to his second query: Find the area of cylinder by squaring the diameter, and multiplying by .7854, by which divide the number of cubic inches in the number of gallons, and the quotient will be the height in inches. To his third question: Divide the area by .7854, and extract the square root of the quotient. If the answer is in feet and decimal parts of a foot, multiply by twelve for the inches. If the answer is in inches, divide by 12 for feet.—A. B. P., of N. J.

**CLEANING POLISHED BRASS.**—If G. W. K. will get some tripoli, such as comes in lumps: powder it up fine, and use with oil and a cloth or chamols skin, and then use some more of the powder dry, with another piece of chamols skin, he will be able to make his brasses shine. If the brass be very badly tarnished, he had better use a solution of oxalic acid first, and immediately wash clean with water; then use the tripoli, with water or oil, whichever is the most convenient. The oxalic acid will immediately remove all stain and discoloration, and the tripoli will polish the brass. Most of the lacquers have shellac for a base, consequently heat would ruin them, although there is a kind that will stand heat, that does not contain shellac, but I have forgotten how it is made.—J. F., of Ga.

**STEAM HEATING PIPES.**—To R. G.—I have been using a heater for three years, and never met with the trouble you speak of. I carry low pressure (two pounds); if you have greater pressure, I would advise you to place a stop cock in your return pipe; then when you shut off the steam with one cock, you can shut off the return with the other cock.—J. A., of Md.

**CLEANING POLISHED BRASS.**—In answer to G. N. K., query 17, Oct. 14, I will say that I have found lime juice the best thing for cleaning polished brass. Rub the brass with cotton waste, dipped in lime juice, and polish or finish with whiting. This cleans the blackest brass or copper, with scarcely any labor. G. N. R. can try this, and is welcome to the recipe.—I. G. B., of S. A.

**CLEANING BRASS.**—If G. N. K. will take equal quantities of good vinegar and fine salt, he can clean his brass work easily; but this mixture will not polish it.—S. R. G., of N. J.

## 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.—**ALUMINUM FROM CLAY.**—I wish to know how aluminum is obtained from clay. Will some one let me know the process of manufacturing it, and how much can be obtained from a ton of clay?—J. L. R.

2.—**FIREPROOF PAPER.**—Can newspapers, intended to be used in walls to protect against cold, be cheaply rendered fireproof?—C. G. A.

3.—**FIREPROOF CLOTH.**—Can common cotton cloth be made fireproof by any substance that will withstand rain? A double tent of common sheeting, like two tents, one outside the other, is an excellent shelter for a party traveling in cold weather, even when snow is on the ground and ice in the rivers. It is very light, yet keeps out cold, wind, and rain better than duck, besides being cheaper. The sole disadvantage is its liability to catch fire from sparks from the camp fire. Such a misfortune has recently befallen me, and to have one's house thus burned over his head on a frosty night is no joke.—C. G. A.

4.—**SPONGY PLATINUM.**—How can I make the platinum sponge for Doebereiner's process? And is it possible to restore platinum sponge which has lost its catalytic property?—T. M.

5.—**TRANSPARENT CEMENT.**—In your last issue I read: "It is a shameful thing to be weary of inquiry, when what we search for is excellent." I have been experimenting lately in making a transparent cement. I have been very successful; only one difficulty is in the way. Will you tell me how I can prevent white sugar from turning into white powder again after it has been melted in water? I want it to dry clear, and prevent it from again becoming granulous, when mixed with gums and other protean bodies.—C. E. E.

6.—**SOLUBLE GLASS.**—On page 105, Vol. XXV., SCIENTIFIC AMERICAN, I read Professor Botger's method of preparing cement by mixing different materials with soluble glass. I have tried to obtain soluble

glass in San Francisco, but cannot get it. I am told silicate of soda is the same material, and have bought a small quantity to try. It is a hard, dry, jelly-like, colored substance; and, if made irregular on the face, it in course of time fills up and becomes level and smooth on the surface. I have dissolved it in hot water and used the liquid, but it has no more effect than water upon any substance with which it is mixed. When dissolved in water it is just as thin as water. I understand soluble glass should be of the consistency of sirup. It would be an advantage to have it of that thickness, as it would make the material with which it is mixed adhere better. Any information will be thankfully received.—W. J.

W. J., for a reply to his other query, can consult our advertising columns.

7.—**ENAMEL FOR IRON.**—I am experimenting, trying to make a hard, white enamel for iron, similar to the black plate used for ambrotypes. I shall be glad to have any suggestions as to articles or books from which knowledge on the subject can be obtained. The enamel should not only be hard, but insoluble in ether and alcohol when dry. I have succeeded with a plate made with varnish compounded with zinc white, but it is not sufficiently hard. The black plate is simply or principally asphaltum varnish. It becomes very hard, and still remains pliable. I want a substance soluble in turpentine.—J. S. Y.

8.—**PORCELAIN LINED VESSELS.**—Can tin vessels be lined with porcelain? What are the processes of fusing porcelain upon tin, and is the art patented?—C. L. S.

9.—**DESTRUCTION OF TREES.**—Will A. K., of N. Y., page 186, current volume, please tell me how to prepare the concentrated solution of sulphate of iron for killing trees?—J. B. S.

10.—**SCALE IN BOILERS.**—I wish to know how to prevent the carbonate of lime from forming scale in my boiler.—E. L. F.

11.—**INDIA RUBBER BELT UNDER WATER.**—Can a gum belt be successfully used in working under water? And, if so, can any and what preparation be applied to preserve the belt?—O. J. H.

## Declined.

Communications upon the following subjects have been received and examined by the Editor, but their publication is respectfully declined:

BOILER EXPLOSIONS.—P.

MATHEMATICAL NOTATIONS.—B. J. B.

MOTION.—G. W. H.

PHOSPHORESCENCE OF THE SEA.—A. P.

PROCURING RAIN.—H. J. S.

ANSWERS TO CORRESPONDENTS.—G. K.—J. P.—R. P. S.

QUERIES.—A. P.—C. C. & Co.—C. T. H.—J. B. B.—J. C. W.—T. I. M.

## Recent American and Foreign Patents.

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

**PIANOFORTE.**—Azariah H. Hastings, of New York city.—These improvements, in the construction of the plates and tuning mechanism of upright and other pianofortes, consist in a new manner of forming the upper or back edge of the metal plate, and in a new construction of and fastening for the travelers that hold the upper or back ends of the strings. The metal plate of a pianoforte has in its upper edge oblique grooves. Through these grooves are fitted the screws for holding the ends of the piano strings. The screws for the strings of each key are arranged in one groove, so that there are two or three screws in every groove. By the oblique direction of the grooves, the screws, though collected for the several notes, are, nevertheless, alternated transversely, to provide more room for the keys to work in and permit the use of larger screws. Each screw fits with its lower end into a nut or traveler, which is a prismatic rod, with a neck near, and a head at, the lower end. A funnel shaped cavity is formed in the lower end of the traveler, and an oblique slot cut through one side of the rod to meet such cavity. This slot forms a hook-bearing for the string. The upper end of the string is fitted through an aperture of the traveler, then wound around the neck, and finally put through the slot into the aforesaid cavity of the traveler. In this manner it is securely held, and will be in line with the adjusting or tuning screw, so as to be pulled straight and not twisted. The two or more layers of travelers are placed under flat guide straps, which prevent them from turning and hold them steady on the plate. These guide straps are preferably made of wood. The invention is, in every respect, as applicable to horizontal as to upright pianos.

**ELEVATOR BRAKE.**—Theodore Thorn, of St. Clair, Pa.—This is an improvement in a safety brake for elevators or platforms used for raising coal or other articles from mines or perpendicularly. It consists in a beveled cage or platform frame and in wedge shape brake blocks and jointed brake bars operating in vertical rabbeted timbers, in such a way that, should the hoisting chain or rope break, the loaded cage would instantly wedge, between the brake blocks, bars acting as knuckle joints to force the brake blocks with their ragged faces against the guidetimers. In use there would be more or less play between the timbers and the brake blocks and between the brake blocks and the cage; but, in case of a break, the cage would act instantly upon knuckle joints and be arrested.

**PAN SCRAPER.**—Gottlieb Scherer, of South Boston, Mass.—This invention has for its object to furnish an improved pan scraper or metallic dishcloth for scraping and cleaning pans, kettles, etc. It is formed of iron rings interlocked with each other to form a network or cloth. At one end of the scraper is formed one or more loops, also made of iron rings, for convenience in hanging up the scraper when not in use. When it is desired to make a heavier scraper, one half of the rings may be made double—that is to say, formed of two coils of wire. The scraper thus constructed is rubbed over the surface of a pan in the same manner as an ordinary dishcloth, and does its work quickly and thoroughly, leaving the surface clean and smooth.

**CULTIVATOR.**—John S. Nolen, of Paulsborough, N. J.—This invention relates to an improved implement or machine for agricultural purposes, particularly designed for the use of gardeners. It is so constructed in its several parts as to adapt it to be used at a harrow or mere pulverizer of the soil, and also as a cultivator, which shall lift the vines and throw the earth around the roots or stocks of the plants. Oblong and eight sided shovels, adapted to be reversed or changed in position so as to adapt the implement for use as a harrow or cultivator, are employed, both the form of the shovels and the method of constructing the machine being covered by the patent.

**FLOUR BOLT.**—Thomas G. Morgan, Murfreesborough, Tenn.—The ribs of the reel have cam rims attached midway between the arms. The roller knockers are arranged to fall upon the cams and impart to them a slight downward motion, by springing the ribs so that their recoil will detach the meal from the cloth and the ribs in the most effectual manner. The roller knockers are mounted in the ends of levers pivoted to the frame, and having adjustable weights to vary the force of the blows. By pins provided in the ribs for securing the cloth, tacking is avoided, except on the rib where the two edges of the cloth meet. Nuts on the arms enable the ribs to be adjusted out or in, radially for regulating the tension on the cloth. Clamping strips are placed on the ribs above the cloth to confine it, said ribs being held by nuts screwing down on the arms and having holes for the pins. The ribs are made oval on the inside to facilitate the rolling of the meal down the cloth, which, being kept free by this arrangement of the knockers, will bolt it properly without specking as much as when the meal is carried up by the ribs and let fall, and the cloth will not be worn as much a when so let fall.