

(24) W. H. asks: Would it make any difference in the speed of 2 rowboats 18 feet long, one having a straight cutwater and the other having a cutwater inclining 4 inches in 18, this being the height of the boats, other things being equal? A. We scarcely think there would be any appreciable difference.

(25) J. F. N. asks: How can I remove the scale from sheet steel? A. With an emery wheel.

(26) D. R. W. says: We are obliged to use water from a well for watering plants. It forms an incrustation upon the earth and the flower pots, which, we presume, is alkali. Can you recommend anything which we can put into the water to neutralize the alkali? A. It is probably a lime salt. Try the addition of a little clean lime water, allow to stand a short time undisturbed, then pour the water off from the sediment.

(27) H. H. S. says, in reply to C. M. F., who asked if plaster of Paris were suitable for porous cells: Some two years ago I made several cells of Daniell's battery, using plaster porous cups, and found them to work very successfully. These cells were about the cheapest I ever saw. A. If the plaster cells are porous, they will answer instead of porous clay cells.

(28) H. J. says: Some time ago I saw an article in your paper recommending coffee as a disinfectant. It would be very expensive, and I have for years been using coffee grounds after the coffee has been extracted. I dry them and keep them for use. I simply sprinkle them over a hot stove or shovel of coals in the sick room. They would be good for emigrant vessels or hospitals, and might be used to great advantage in the yellow fever districts at present.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

H. S. S.—It contains no silver.—C. H. C.—It is decomposed mica.—C. P.—It is black oxide of manganese.—J. B. H.—It is carbonate of copper with shale.—H. W. S.—Both are sulphides of iron, No. 1 being pyrite, No. 2 marcasite.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On Aërostation. By J. J. R.
On Celestial Dynamics. By J. W. H.
On Mental Telegraphy. By J. L. M.
On Trisecting an Angle. By P. H. F.
Also inquiries and answers from the following:
F. P.—H. R. L.—V.—R. D.—W. C. K.—N. B. P.—W. L.—W. T.—R. K.—J. C. W.

NOTES TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent? "Who sells the best dies and taps for screw-cutting work? Who makes the best gas apparatus for domestic use? Who sells Centennial bronze medals? Who makes the improved zinc white, described on p. 323, vol. 35? Who makes the best incubators? Who sells the best ice machine?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending October 3, 1876, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing inventions such as Animal trap, Axle boxes, Bag fastener, Bale tie, Barbed fence wire, Barometer, Bed spring, Blackboard rubber, Blast furnace, Blower, Book binding, Boot soles, Boots, Boots, manufacture of, Boring machine, Bottle stopper, Bran-scouring machine, etc.

Main table listing inventions such as Brick kiln, Bristles, cleaning, Buckle, Ligabotom & Smith, Bung cutter, Bung machine, Butter worker, Can, metalic, Can, self-opening, Cane and stool, Capstan, Car axle box, Car coupling, Car coupling, H. Sells, Car coupling, J. S. Williams, Car roof, H. Aldridge, Car roof metal, H. Aldridge, Car spring, W. P. Hansel, Car wheel, Allen & Pullman, Carriage step and shank, F. A. Sawyer, 2d, Cartridge-feeding device, G. P. Salisbury, Cartridge shells, burring, Salisbury et al., Case for bottles, etc., G. Wilson, Chamber bucket, L. C. Batten, Chandeller, Carter & Brown (r), Check rower, W. L. Black, Chimney top, J. Hessler, Churn, J. Brown, Churn, Hubbard & Sterling, Churn, W. Marvin, Churn, D. R. Nevitt, Churn, J. M. Roberts, Cigar pipe, I. A. Heald, Cigarette package, H. Maddock, Clothes wringer, A. Israel, Coal, economizing, M. B. Eaton, Cooling animal charcoal, C. H. Hersey, Corn planter, L. L. Haworth, Corn planter, H. J. Snyder, Corset, F. C. Batcheller, Cotton press, etc., W. M. Peniston et al., Cotton scraper, L. C. Gillaspie, Sr., Cow milker, E. M. Knollin, Cultivator, J. Falcer, Currycomb, C. R. Taylor, Die for press dyeing, D. C. Farrington, Distilling oil, H. C. Rose, Door check, S. O. Ball, Door check, W. Casell, Dumping car, E. Davis, Dumping wagon, F. M. Pennebaker et al., Dust guard for railway cars, E. Leverich, Dynamo-electric machine, E. Weston, Earthaugers, operating, E. M. Hoagland, Easy chair and lounge, Nichols & Cain, Electric coupling, A. Ryder, Electric pile, J. Cerpoux, Electro-magnetic governor, Sangster et al., Evaporating liquids, J. E. Weaver, Extension chandelier, Browne & Carter, Eyeglass, I. Alexander (r), Fan, automatic, Ruben & Bradshaw, Feed water heater, J. B. Mitten, Fence, portable, Martin & Briggs, Firebricks, compound, etc., J. Kiernan, Flower stand, H. B. Adams, Fly trap, J. M. Scantlin, Folding chair, F. F. Parker, Food, preserving, Thoma & Ehrich, Forging horseshoe nails, J. Mills, Fruit picker, J. C. McEwen, Fulling mill, R. Eickemeyer, Furnace, heating, A. Gale, Furniture spring, J. L. Branson, Furniture spring, Branson & Juergens, Game apparatus, S. Noah, Gas regulator, I. Cook, Gate, automatic, E. C. Stephens, Governor, engine, R. W. Gardner, Grain door, car, Card & Safford (r), Hand corn planter, F. Dyer, Hand power for vehicles, L. R. Converse, Harness saddle, S. E. Tompkins, Harness saddle tree, S. E. Tompkins, Harrow and land roller, W. Gillelan, Harvester, Clinton & Knowlton, Hat frames, wiring, R. F. S. Heath, Hat-pouncing machine, R. Eickemeyer, Hay and cotton press, Ward & White, Hay and grain elevator, T. Powell (r), Hay loader, W. H. Thurston, Heatingstove, G. W. Herrick, Hinge, C. B. Clark, Hoe, E. Warren, Holdback, Robinson & Merrill, Hot air furnace, H. Randall, Hydrant, Kupferle & White, Hydraulic jack, etc., M. J. Walsh, Ingot mold, C. M. Ryder, Ironing and polishing board, Mooney & Young, Ironing apparatus, W. Halsted, Ironing board, A. H. Wilson, Lamp, C. F. A. Hinrichs, Lamps to instruments, attaching, E. Ruhlmann, Lathe attachment, I. Kinney, Leather-skiving machine, W. S. Fitzgerald, Loom stop motion, H. Carlon, Lubricating car axle, B. G. Martin, Mail bag catch, P. K. Curll, Match box, J. P. Benjamin, Match machine, J. Du Bois, Microscope, E. Gundlach, Middlings, separator, A. Hunter, Molding tobacco pipes, J. G. Oliver, Mortising chisel, E. Cole, Mower, H. Palmcrantz, Mowing machine, R. Dutton, Needle bar and cylinder, etc., J. Heginbotham, Netting, Chase & Canfield, Nut lock, B. W. Davis (r), Ore washer and separator, G. Laudor, Ornamenting metal, etc., G. T. Clare, Paper-cutting machine, W. T. Shafer, Parlorskate, W. Lockwood, Patterns, drafting, Steiner & Lass, Pigeon hole for papers, J. C. Wigent, Pin rack, C. Miller, Pipe cutter, J. Curran, Pipe for hot air furnaces, W. H. Drummond, Pipe vise, J. H. Wilkinson, Pitman for harvesters, J. D. Wright, Plow, A. Schuetz, Pocket book lock, E. Schnopp, Polishing machine, J. Johnson, Pontoon for raising vessels, W. Foster, Potato digger, A. Favreau, Pump, W. Adair, Pump, I. G. Wheeler, Railroad railjoint, G. Palmer, Railroad switch, C. S. Bastright, Railway tie, L. E. Yates, Razorback, H. A. Dow, Regulator, furnace, G. C. Paine, Relief for air compressors, G. H. Reynolds (r), Rivet-heading machine, H. Ruddick, Rocking chair, F. Mohr, Roll for welding tubing, M. Blakey, Rolling band iron, B. Lauth, Rolling horseshoe nails, G. L. Hall, Rolling blank nut bars, H. Johnson, Sack filler and packer, E. M. Whitney, Sadrion, Z. B. Custer, Sadrion grinding machine, J. G. Baker, Safety pocket, G. Palmer, Sash balance, W. Woodward, Sash fastener, E. J. Hale, Saw bench, Rice & Murkland, Sawing machine, M. T. Boulton, Sawing machine, circular, Hueber et al., Scale beam, E. A. Rock, Scoop, A. Button, Scroll saw, H. L. Beach, Sealing bottles, jars, etc., C. M. Jacob, Sectional steam generator, L. F. Renshaw, Seed cotton gin feeder, C. F. Scattergood, Sewing machine stop, E. Cornerly, Sewing machine feed, Williams et al., Sewing thimble, S. Chard, Shadeholder for lamps, C. Votli, Shafting, turning, A. Dwell, Ships' rigging, setting up, T. F. Hall, Shirt, S. Gutmann, Shirt, C. C. & D. W. Noyes, Shirt and drawers, S. S. Gutmann, Show case for spool silk, W. G. Kelly, Sign, A. W. Millings, Singletree, L. Flatau, Spinning ring fastening, J. H. Sawyer (r), Spirit level, Burlington & Priest, Spokes, trimming tenons on, L. H. Merriman, Spring air pistol, W. C. Cross, Stalk cutter, R. Wright (r), Star braid, A. Moll, Steam boiler scale remover, J. Riley, Steam generator, G. T. Lauthlin (r), Steam heater, J. E. Weaver, Steam lubricator, F. G. Wiselugel, Step and hub band, R. McDonald, Stone compound, J. Kormann, Stone, dressing, W. J. Macomber, Stop valve, J. Ward, Stop watch, H. A. Lugin, Street lamp, S. W. Squires, Studs, winding spiral, D. F. Briggs, Stump extractor, Balliet et al., Tan bark, preparing, J. Sherman, Jr., Thill coupling, J. C. Hendry, Thill coupling, Osborne & Alexander, Threehorse evener, H. Spunaugle, Time and combination lock, E. Stockwell, Toy carrier, J. H. Adamson, Toy money box, J. W. Hoard, Trace fastener, E. N. Banks, Track clearer, J. E. Green, Trundle hoop handle, J. J. Riley, Trunk, T. R. Dunham, Truss, W. A. Turner, Turbine water wheel, Rose & Jennings, Umbrella, J. H. Gumble, Umbrellas, attaching rings to, R. J. Gemmill, Upright pianoforte action, G. Trayer, Ventilating mines, W. Greis, Ventilation, system of, A. B. Brown, Vignetting printing frame, W. Boyce, Wagon brake lever, Engle & Snively, Wagon brake, W. E. Nash, Wagon jack, A. N. Price, Washing machine, Dickason & Barrett, Watchchain, J. J. Rohrbach, Water closet tank, H. A. Haugan, Water cooler, M. De Yonge, Water elevator, T. H. Hutchison, Weather strip, M. B. Smyth, Wheel plow, E. T. Hunter, Whiffletree hook, E. C. Knuth, Whip, D. Avery, Windmill, A. W. Hall, Wind wheel, J. J. Kimball, Window bead fastener, H. W. Stetson, Window screen, T. Nowell, Wire fence barb, M. S. Harsha, Wood-planing machine, A. M. Mortimer, Wood-planing machine, H. M. Wilcox, Wood pulp engine, J. Chase

DESIGNS PATENTED.

- 9,506.—BAS RELIEF.—A. Carlewitz, Newark, N. J.
9,507 to 9,510.—CARPETS.—J. L. Folsom, Brooklyn, N. Y.
9,511 to 9,534.—CARPETS.—O. Heintzke, New Utrecht, N. Y.
9,535.—CANDY BOX.—J. Hirner, Philadelphia, Pa.
9,536 to 9,551.—CARPETS.—H. Horan, East Orange, N. J.
9,552 to 9,557.—CARPETS.—E. J. Ney, Dracut, Mass.
9,558 to 9,560.—CARPET.—H. Nordmann, New York city.
9,561 and 9,562.—CARPETS.—G. W. Piggott, N. Y. city.
9,563 to 9,566.—CARPETS.—J. H. Smith, Enfield, Conn.
9,567 to 9,571.—CARPETS.—W. H. Smith, Enfield, Conn.
9,572.—CIGAR BOX.—S. S. West, Schoenock, Pa.
9,573.—HINGES.—C. B. Clark, Buffalo, N. Y.
9,574.—CARAMELS.—G. S. Collum, Hartford, Conn.
9,575.—STOVES.—F. A. Magee, Chelsea, Mass.
9,576.—BRACELETS.—G. G. Miller, Philadelphia, Pa.
9,577 and 9,578.—DECORATING TIN.—S. Van Campen, Rahway, N. J.
9,579.—BRACELETS.—J. Wilkinson, Mount Vernon, N. Y.

[A copy of any one of the above patents may be had by remitting one dollar to MUNN & Co., 37 Park Row, New York city.]

SCHEDULE OF PATENT FEES.

Table listing patent fees: On each caveat \$10, On each Trade mark \$25, On filing each application for a Patent (17 years) \$15, On issuing each original Patent \$20, On appeal to Examiners-in-Chief \$10, On appeal to Commissioner of Patents \$20, On application for Reissue \$30, On filing a Disclaimer \$10, On an application for Design (3 1/2 years) \$10, On application for Design (7 years) \$15, On application for Design (14 years) \$30

THE VALIDITY OF PATENTS.

We recommend to every person who is about to purchase a patent, or about to commence the manufacture of any article under a license, to have the patent carefully examined by a competent party, and to have a research made in the Patent Office to see what the condition of the art was when the patent was issued.

He should also see that the claims are so worded as to cover all the inventor was entitled to when his patent was issued; and it is still more essential that he be informed whether it is an infringement some other existing patent. Parties desiring to have such searches made can have them done through the Scientific American Patent Agency, by giving the date of the patent and stating the nature of the information desired. For further information, address MUNN & CO., 37 PARK ROW, New York.

Advertisements.

Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line. Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Friday morning to appear in next issue

EMPLOYMENT.

ANY PERSON of ordinary intelligence can earn a living by canvassing for The Illustrated Weekly. Experience is not necessary—the only requisite being, as in all successful business industry and energy. Send for particulars. Address CHAS. CLUGAS & CO., 14 Warren St., N. Y.

A GENTLEMAN out of business, having about \$50,000 to invest, wishes to associate himself with an established concern where from \$10,000 to \$50,000 increased capital could be advantageously employed. Address CAPITAL, Box 235, Boston, Mass.



Send for Circular and Descriptive Price List.

"LEHIGH EMERY WHEELS are in every way satisfactory, and for our purposes answer better than any others we have had." BARNER & Co., Syracuse, N. Y. Mowing Knives, etc. L. V. EMERY WHEEL CO., Westport, Pa.

Danbury Drill Chucks, New—1876—Pattern.

GREATLY IMPROVED—ALL CAST STEEL. PRICE REDUCED TO \$8.00. Sold by all dealers in Mechanic's Tools. THE HULL & BELDEN CO., MANUFACTURERS, Danbury, Conn.

SECRETARY WANTED—TO MANAGE THE WATERBURY STEAM ENGINE COMPANY, at Waterbury, N. Y. Address Co., giving business, experience, history, references, and salary expected. Oct. 20, 1876.

SETS OF DRAWING INSTRUMENTS 75 to \$100. Drawing Materials of all kinds. Levels, Compasses, Tape Measures, Aneroid Barometer from 1 1/2 inches to 6 inches in diameter. Telescopes from \$50 to \$250 each. Spy Glasses from \$3 to \$25 each. Microscopes from \$3 to \$100. Priced and Illustrated Catalogues, Part 1st, 84 pages, Mathematical, Catalogues, Part 2d, 120 pages, Optical Instruments. Sent on application.

JAMES W. QUEEN & CO., Opticians, 924 Chestnut St., Philadelphia, Pa.

J.M. CARPENTER MANUFACTURER OF FIRST CLASS TAPES AND DIES, Pawtucket, R. I.

IRON PLANING MACHINES A SPECIALTY. C. WHITCOMB & CO., M'rs, Worcester, Mass.

BIG PAY to sell our RUBBER PRINTING STAMPS Terms free. TAYLOR & CO., Cleveland, O. \$200 a month. Outfit worth \$1 free to agents. EXCELSIOR M'FG Co., 151 Mich. Av., Chicago.

IMPROVED PAPER BOX MAKER'S PASTING MACHINES. W.M. DRAPER, Philadelphia, Pa.

DO YOUR OWN PRINTING FAVORITE Self-ink Press #16 Prices from \$3 to \$125. Other complete sets sent for 75 page book of type, cuts, etc. Illustrated with instructions, worth \$1. GORHAM & CO. BOSTON, MASS.

Todd & Rafferty Machine Co. MANUFACTURERS OF The celebrated Greens Variable Cut-Off Engine, Lowe's Patent Tubular and Flue Boilers, Plain Slide Valve Stationary, Hoisting, and Portable Engines. Boilers of all kinds. Steam Pumps, Mill Gearing, Shafting, &c., Bilk, Tow Oaken, Bagging, Rope, Flax, and Hemp Machinery. Agents for the New Haven Manufacturing Co.'s Machine Tools, for Judson's Governors and Stop Valves, Starveant Blowers, and Differential Pulley-Blocks. WAREHOUSES, 88 LIBERTY STREET, NEW YORK. WORKS, PATERSON, NEW JERSEY.

ELECTRIC BELLS, \$3.50 TO \$6.—AMATEUR Telegraph Outfits, \$4. Sent C. O. D., with privilege of examining. Send stamp for circular. ROBINSON & DAY, Pittsfield, Mass.

TO RAILROAD MANAGERS & CAR BUILDERS—Complete Ventilation for railroad cars, street cars, and omnibuses, scientifically correct in principle, and mechanically very simple. Send for circular. Half interest in the patent for sale. C. G. VAN PAPPENENDAM, Charleston, Lee Co., Iowa.

WANTED—Salesmen on Salary only. \$85.00 per month, and all traveling expenses, to sell goods of our own manufacture and to induce No. 100. Address NOVELTY M'FG CO., Cincinnati, O.

ALLIS, BULLARD & CO., Limited, Dealers in first class 2nd hand Machinery & Machinists' Supplies. Large Stock Tools in Store for immediate delivery. 14 Dey Street, New York.

IMPORTANT FOR ALL CORPORATIONS AND MAN'G CONCERNS.—Huerk's Watchman's Time Detector, capable of accurately controlling the motion of a watchman or patrolman at the different stations of his beat. Send for circular. J. E. HURK, P. O. Box 979, Boston, Mass. N. B.—The suit against Huerk & Co. of New York was decided in my favor, June 10, 1874. Proceedings have been commenced against Imbueser & Co. for selling, contrary to the order of the Court, Persons using clocks infringing on my Patent, will be dealt with according to law.

MANUFACTURERS AND PATENTEES having useful articles, suitable for the Hardware Trade, and desiring to manufacture and introduce the same, address P. F. RAFFERTY, care PRATT & CO., Buffalo, N. Y. Small samples may be sent, same to be returned if desired.