

Business and Personal.

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Agricultural Implements and Industrial Machinery for Export and Domestic Use. R. H. Allen & Co., N. Y.

O. S. Baldwin is the Editor and Publisher of Baldwin's Monthly. Of two facts we are sure, that the paper we speak of is one of the best monthlies we know—and that its editor is the best clothier in the United States.

25 ft. Paddle Wheel Steamboat for Sale, 6 in. draught. New. Address Box 492, Oswego, Tioga Co., N. Y.

Wanted—Situation by Mechanical Supt. Iron Machine Work, general or special. References furnished. Address P. O. Box 388, Chicopee, Mass.

38 in. Drill Press; 15 Steam Pumps; Small Mine Hoisting Machine; 11x18 Engine; 4x6, 6x8, 8x9 Vertical Engines. Cheap for Cash. A. G. Brooks & Co., Philada.

Amateur Photographic Apparatus, including Plates & Chemicals, \$5. E. Sackmann, 39 Hudson St., N. Y.

Celebrated John Scott Scroll and Jig Saws made to order, of Jessup's superior cast steel, by J. Roberts, 108 Hester Street, New York. Send for circular.

Split-Pulleys and Split-Collars of same price, strength, and appearance as Whole-Pulleys and Whole-Collars. Yocom & Son, Drinker St., below 147 North Second St., Philadelphia, Pa.

Now Ready—New and enlarged edition of the Catechism of the Steam Engine. Free by mail for \$2. Send stamp for descriptive Circular. F. Keppy, Bridgeport, Ct.

To Inventors—Owners of Practical Patents can find buyers through us. Penn. Pat. Agency, Philadelphia.

Scientific American—The early Volumes for Sale—very cheap—either bound or in numbers. Address A. F. R., Box 773, New York City.

Hydrant Hose, Pipes, and Couplings. Send for prices to Bailey, Farrell & Co., Pittsburgh, Pa.

Machine-cut brass gear wheels, for models, &c. List free. D. Gilbert & Son, 212 Chester St., Phila., Pa.

"Dead Stroke" Power Hammers—recently greatly improved, increasing cost over 10 per cent. Prices reduced over 20 per cent. Hull & Belden Co., Danbury, Ct.

Power & Foot Presses & all Fruit-can Tools. Ferracute Wks., Bridgeton, N. J. & C. 27, Mch. Hall, Cent. 1. Shingles and Heading Sawing Machine. See advertisement of Trevor & Co., Lockport, N. Y.

Solid Emery Vulcanite Wheels—The Solid Original Emery Wheel—other kinds imitations and inferior. Caution—Our name is stamped in full on all our best Standard Belting, Packing, and Hose. Buy that only. The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, New York.

Hamilton Rubber Works, Trenton, N. J., Manufacturers of 1/4 pavement Hose, and any size, also Belting, Packing, Car Springs, and Rubber for Mechanical use. Send for price list.

Hotchkiss Air Spring Forge Hammer, best in the market. Prices low. D. Frisbie & Co., New Haven, Ct.

Patent Scroll and Band Saws, best and cheapest in use. Cordesman, Egan & Co., Cincinnati, Ohio.

Steel Castings, from one lb. to five thousand lbs. Invaluable for strength and durability. Circulars free. Pittsburgh Steel Casting Co., Pittsburgh, Pa.

For best Presses, Dies, and Fruit Can Tools, Bliss & Williams, cor. of Plymouth and Jay, Brooklyn, N. Y.

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

Hotchkiss & Ball, Meriden, Conn., Foundrymen and workers of sheet metal. Fine Gray Iron Castings to order. Job work solicited.

For Solid Emery Wheels and Machinery, send to the Union Stone Co., Boston, Mass., for circular.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Boring Metals. E. Lyon, 470 Grand Street, New York.

Spinning Rings of a Superior Quality.—Whitinsville Spinning Ring Co., Whitinsville, Mass.

Diamond Tools—J. Dickinson, 64 Nassau St., N. Y. Temples and Oilcans. Draper, Hopedale, Mass.

Notes & Queries

J. C. will find directions for stereotyping by the paper process on p. 383, vol. 30.—W. N. can French polish his pianoforte by following the directions on p. 11, vol. 32.—J. N. will find that paraffin varnish is a good non-conductor of electricity. See p. 91, vol. 21.—J. C. W. will find some information as to the nature of electricity on pp. 195, 228, vol. 36.

(1) C. S. asks: How long is it since the first chilled plow moldboard was cast? A. A patent for chilled plowshares was taken out in England in 1833. In making them, they are cooled as rapidly as possible.

(2) I. D. & Co. say: We have a home telegraph line, and use 1 gallon stone jars for batteries. We fill with water to within 1 inch from the top. The vitriol will soon form a coating over the entire outside of the jar; it has the appearance of coming over the top of the jar. Can you tell us how to prevent it? A. There is no perfect remedy except frequent attention. Telegraph men usually paint a ring around the inside of the jar at the top; this mitigates the trouble in a measure. Some greasy substance is best.

(3) C. F. S. asks: Can small iron castings, such as sewing machine parts, be cascharred with prussiate of potassa? My machinist says it cannot be done. I say it can. Which is right? A. You are.

(4) J. S. D. says: I wish to construct an electro-magnetic motor, for the purpose of running a jig saw. The magnet to be 7 inches long and 3 inches wide, and 1/2 inch thick, revolving in coils, the opening in which will be 7 1/2 inches long, 1 1/4 inches wide, and 7 inches deep. The outer coils and those surrounding the magnet will be composed of 4,000 feet copper wire, No. 21, American gage. The machinery is to be run by 3 cells Bunsen's battery. Will it give me sufficient power to run a jig saw at 600 strokes per minute? A. You had better use larger wire, say about No. 16. But it is doubtful if three ordinary cells will do the work.

(5) K. & D. say: 1. Can electricity be conducted into a cylinder to be discharged at will?

A. Yes; the Leyden jar is used for this purpose. 2. Can a glass be invented that will enable a person to see through a fog? A. No. The electric light, however, can be advantageously employed during fogs.

(6) F. E. B. says: What is the horizontal force of terrestrial magnetism for New York, in magnetic measure? I have worked it out (by a formula given in Kohlrausch's "Physical Measurement") by the galvanometer, and make it 2.33, and desire to know whether this is correct, and if there is much difference between New York and other places in the United States, say Chicago or San Francisco. It is a question of some importance; for if there is a great difference, the values by a given galvanometer would vary in proportion at different places. For instance, the horizontal force at some places in Europe is only 1.88, or nearly half what I make it. A. Kohlrausch's table is hardly applicable to this hemisphere. Measurements made last summer at Newport made the horizontal force for that point, approximately, 1.65 in the meter-second system. We have just learned, also, that recent determinations at Philadelphia (measurements made this month) place it at 1.88 or 3/2 in English units. You can probably get full information from the Coast Survey Bureau.

(7) A. H. asks: What is the difference between a low and a high pressure boiler? A. A boiler with less than 21 lbs. of steam is usually called a low pressure boiler. With a pressure above that figure, it is called a high pressure boiler.

(8) I. M. H. says: Please give me the recipe for applying nitrate of copper to small castings (to represent a bronze) with the battery? A. Brown bronzing of various shades may be obtained by coating the object with copper and then proceeding in one of the following ways: (1) Moisten with water, to a wineglass of which five or six drops of nitric acid are added, allow it to dry, and then heat till the desired shade is obtained. (2) Rub well in and cover with finely powdered peroxide of iron (jeweler's rouge and red hematite ore); heat till nearly red. (3) Darker shades may be obtained by mixing the peroxide of iron with black lead, ground to a fine paste with spirits of wine. The copper is to be brushed well. When the color is obtained, the objects should be warmed and polished with a cloth which contains a little beeswax, and all excess of this removed with a clean cloth. A very good effect is also obtained by first bronzing to a deep color and then lightening the projecting parts by touching with a piece of leather moistened with ammonia.

(9) E. A. McG. asks: 1. How are razors ground and polished? A. Razors are first ground on grindstones, and then polished on emery wheels and buff wheels with crocus. 2. Is a rubber polishing buff the best for the purpose? A. Leather is better than rubber.

(10) P. S. says: I have made a Ruhmkorff coil, with 180 feet No. 20 plain copper wire for the primary, which I insulated by winding with cotton twine, insulating each succeeding layer. For the secondary, I put on 1/2 lb. No. 35 cotton-covered copper wire. I have insulated the secondary from the primary coil with oiled linen. The core consists of a bundle of fine soft iron wire, about 3/4 inch in diameter. I get only a little shock from it, and no spark. Must the fine wire be wound regularly and even, like thread on a spool? A. The length of secondary is hardly sufficient to give a spark of any size, but you should get a fair spark with proper battery power. The wire of the primary might be heavier and the insulation lighter.

(11) J. S. F. says: In your issue of June 3, Mr. Rose calls the tool illustrated on p. 357, vol. 34, a bevel square. Is not a sliding bevel the correct name? Is there such a thing as a bevel square? A. When the blade stands square, the tool is a square; when otherwise, it is a bevel.

What is black coffee? A. Black coffee is a very strong infusion of coffee, taken without milk.

(12) F. C. J. says: I built a model engine of the four cylinder pattern; but thinking it of no use, I took it apart and destroyed all but the cylinders. The cylinders were 2 x 3 inches, with reversible link motion. All the machinery was entirely ought of sight, with no joints except those needed for the reverse gear. My boiler was upright, 18 x 36 inches, with 15 1/4 tubes, 9 inches long. My intention was to put it into a steam carriage. Would it do for this purpose? A. The machinery would probably answer, if the boiler is strong enough for a high steam pressure.

(13) H. N. asks: 1. What does a buff consist of, and how is it made? A. Buff wheels are made of wood covered with leather, or of solid leather, such as walrus hide. Wheels are sometimes made of loose disks of cloth or rag. 2. Is there any secret about polishing tinware? A. The wheel of disks of rag would probably answer the purpose, if used with some dry polishing material and run at a high speed.

(14) E. S. N. says: 1. We wish to carry steam 1,500 feet to run a 13 inch cylinder. Is a 3 inch pipe large enough? The piston will run at about 400 feet per minute. A. A 3 inch pipe will probably do, though a 6 inch one would be better. 2. It is proposed to return the exhaust steam in a 5 or 5 1/2 inch pipe, surrounding the 3 inch steam pipe, the whole enclosed in a wooden box containing some non-conducting material. I say that the exhaust steam will necessarily have a lower temperature than the live steam, notwithstanding its protection, and will therefore condense the live steam. I tell them to put them both in the same box, but keep them separate. Will you please give your opinion? A. Your view is correct.

What part of the area of a slide valve is to be considered in balancing the valve? A. The area of a slide valve requiring to be balanced depends largely upon its shape, size, and fit to its seat.

(15) C. M. N. asks: Is a bent magnet, with the ends of core at right angles with the main part of core, more apt to hold its magnetism after the current of electricity is broken than a straight core magnet? It is for a telegraph sounder. A. No.

(16) F. A. (query No. 42, July 15) is informed that the ordinary lifting injectors, of Nathan and Dreyfus, this city, draw water from 18 to 20 feet perpendicularly.

COMMUNICATIONS RECEIVED.

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

- On the Quadrature of the Circle, etc. By W. H. W.
On Locusts. By —
On Meteors. By E. B.
Also inquiries and answers from the following:
P. L.—D. H. W.—N. W. O.—J. D. K.—C. H. H.—C. S.—D. C.—T. C. B.—E. L. C.—H. E. B.—C. S.

HINTS 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 makes phosphor-bronze castings? Who sells water rams? Who sells machines for molding paper boxes from pulp? Who sells artificial tobacco leaves?" 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

June 27, 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 with patent numbers and names of inventors, including items like Air spring, Alarm, Alarm, burglar, Axle, Bag fastener, Bag for grain, Bag holder, Bag holder, S. C. Pyles, Bag, traveling, T. A. Dennis, Base ball target, Bath tub attachment, Bed bottom, Bed bottom, spring, Belaying pin, Bird cage, Block frame, Boat hook, Boiler, steam, D. Sullivan, Boilers, furnace for steam, Boot horn tip, Prusha & Cook, Boot shank burnisher, Boring machine, metal, Bottle-capping machine, Bottle mold, glass, Pease & Tester, Box-nailing machine, Brick for walling wells, Brick machine, J. Dalzell, Brush, J. E. & C. F. Howard, Brush, H. Rosenthal, Brush, A. Wattles, Bucket car, J. F. Donkin, Bucket car, M. Saulson, Buckwheat cleaner, Burial case, Colby & Drew, Butter package or tub, Button fastening, Button-hole machine attachment, Can for packing meat, Can nozzle, G. H. Chinnoek, Can spouts, die for, J. Gilbert, Canal boats, propelling, Car axle box, T. L. Buckley, Car brake, P. Hughes, Car brake, I. Robbins, Car brake shoe, G. F. Eckert, Car coupling, G. J. Crikelair, Car coupling, Hiltz & Brockist, Car coupling, J. W. Buckingham, Car coupling, M. B. Ogden, Car coupling, W. N. Hutchinson, Car mover, J. W. Raynor, Car replacer, Hosier & Watkins, Car spring, E. Cliff, Cars, compressed air-holder for, J. Griscom, Cars, ventilation of, Hall et al., Carpet lining, J. L. Kendall, Carriage axle, W. H. Ward, Carriage, child's, F. W. Whitney, Chains, stretching, C. Hall, Chair, convertible, W. McGregor, Chair, convertible, C. Vandyeck, Chair, folding, B. Born, Chair, folding, B. E. Wetherbec, Chair, shearing, J. A. Boals, Chimney cap, J. E. Auld, Cigar mold, F. C. Miller, Clasp, S. Wales, Clevis, spring, L. C. Eaton

Table listing inventions with patent numbers and names of inventors, including items like Clew thimble, Clipping machine, A. N. Gavit, Clothes dryer, H. F. Green, Clothes dryer, G. A. Wright, Sr., Clothes pin, G. C. Eastman, Coal hod, W. S. Potwin, Coal-mining machine, A. Cromble, Coffee pot, W. H. Sherwood, Coffee roaster, N. Ljungberg, Cooker, steam, H. E. Fuller, Cooler, beer, W. Woerle, Cooler, milk, Eaton & Randall, Corkscrew, J. Barnes, Corn sheller, J. Q. Adams, Corset spring, C. F. York, Cotton opener, beater, etc., R. Kitson, Cradle, T. B. Way, Crape, laces, etc., restoring, A. J. Schriver, Culinary vessel, F. Schifferle, Cultivator, D. C. Baker, Cultivator, S. Purdy, Cultivator, G. W. Rhodes, Curry comb, C. E. L. Holmes, Curtain cord tightener, A. Burbank, Dental plugger, C. King, Dental tools, making, Bonaventura et al., Desk, G. Range, Desk, wall, T. Cogswell, Dish and bottle washer, W. N. Cosgrove, Door check, W. J. Clarke, Door check, T. Hill, Double tree hook, J. Parker, Drain hopper, J. D. Pierce, Drain or sewer trap, W. D. Stewart, Drying house, S. W. Craven, Electric machine, magnet, J. B. Fuller, Elevator and carrier, H. W. Foutz, Enameling wrought iron, J. C. Whiting, Engines, link for steam, W. H. Gilman, Engine valve, direct-acting, Goose et al., Engine valve, direct-acting, J. Hare, Envelope, J. Rogers, Evaporating pan, T. McQuiston, Eyelet-setting instrument, H. Dinning, Fan, automatic, A. Mattox, Faucet, Booth & Hall, Feather renovator, Biggar & Murwin, Feedrack, A. W. Humphrey, Fence wire, barbed, N. Clark, Fire-armfeeder, L. W. Broadwell, Fire pot lining, J. Ziegler, Flambeau, English & Laass, Flour, manufacture of, J. Mills, Food for stock, steaming, R. Dalley, Fruit dryer, H. G. Hulburd, Fruit jar, D. E. Stevens, Furnace and steam boiler, Ash & Walker, Furnace blast, C. Plagge, Furnace for steam boilers, J. L. Heald, Furnace grate, Dodge & Coles, Furnace grate, J. Reynolds, Furnace, heating, P. Martin, Gas apparatus, W. & R. H. Smith, Gas, manufacturing, M. H. Strong, Gas purifying tray, T. P. McGarvie, Gas retort lid, etc., J. Ricketts, Gas-saving attachment, T. McKee, Gate, automatic, P. Sames, Gate, farm, A. Brinkerhoff, Girder, compound, A. Hay, Grain binder, J. Garrard, Grain cleaner, W. W. Ingraham, Grainregister, M. Shawver, Grindstones, hanging, D. E. Hall, Hammer, hydraulic power, W. B. Leachman, Harness, D. S. Carrick, Harness, G. H. Van Sice, Harness lame, L. P. Brown, Harrow and pulverizer, T. A. Kershner, Harvester, E. Emerson, Harvester, E. H. Gammon, Harvester, B. Shoup, Harvester, Steward & Coddington, Harvester reel support, J. F. Steward, Hinge, table, F. H. Cutler, Hook, snap, G. D. Mosher, Hose pipes, making, G. M. Fuller, Ice-shaving apparatus, W. C. Salmon, Indicator and speed recorder, J. F. Kettell, Ingots and plates, making, H. McDonald, Ironing apparatus, C. Mackh, Ironing apparatus, Sternberger & Pfautz, Jelly glass-top, J. Dalzell, Journal bearing, C. C. Hoyt, Knife-scouring machine, R. G. Spaulding, Knitting machine needle bar, etc., W. H. Abel, Ladder extension, H. Buestrin, Lamp chimney, E. Honerjaeger, Lamp extinguisher, M. Wagner, Lamp wick attachment, H. Rauschousan, Lamp match box, J. Dalzell, Lathe, double reversible, J. H. Wilson, Liniment for rheumatism, Shane et al., Lock, seal, J. Sweeney, Locomotive draft regulator, J. M. Foss, Log track, J. N. Russell, Loom, H. D. Davis, Loom, A. H. Miller, Lubricating compound, H. W. Billington, Lubricator, D. Jenkins, Lubricator, N. Selbert, Mail bag, F. J. Feintheil, Marking implement, J. Perkins, Match safe, H. Kinsley, Measure and pump, fluid, W. H. & W. J. Clark, Measurc, graduated, E. L. Wittc, Mechanical movement, A. Warth, Mechanical movement, W. D. Westman, Millstones, laying out furrows in, G. T. Smith, Mold for pillars, Gibby & Goldsmith, Molding machine, H. Buchter, Music stand, J. A. Rand, Musical instrument valve, W. A. Tischendorf, Nail and spike, E. Bless, Nails, making, Cerf et al., Nursing bottle valve, A. M. & H. Knapp, Nuts, machine for tapping, G. H. Roblason, Oaten grits, machine for making, G. H. Cormack, Overalls, G. R. Eager, Overall, etc., G. R. Eager, Paddle wheel, feathering, T. Walsh, Padlock, combination, H. Clarke, Paint, oil, W. E. Vary, Paper board, drying, B. F. Field, Paper pulp, wood, H. F. Furbish, Paper reel for, W. Conquest, Passengers, recording, P. B. & C. Mathiason, Pencil protector and knife, F. A. Coombs, Photograph burnisher, L. D. B. Shaw, Photographs on glass, B. T. Irish

Table listing various machinery items and their prices, including Pipe-bending mandrel, Planing machine, and various pumps.

Text discussing patent infringement, mentioning a purchased patent and the importance of legal protection for inventions.

Section titled 'Advertisements' with details on rates for inside and back page insertions.

Advertisement for 'Lehigh Emery Wheels' by Rumsey & Co., featuring technical details and contact information.

Advertisement for 'STEAM PUMPS' with details on first prizes and contact information for The Norwalk Iron Works.

Advertisement for 'FRICTION CLUTCHES AND ELEVATORS' by Volney W. Mason & Co., featuring illustrations of machinery.

Advertisement for 'E. M. MAYO'S PATENT BOLT CUTTER' with technical specifications and contact details.

Advertisement for 'SMALL TOOLS OF ALL KINDS' including gear wheels and castings, listing various mechanical parts.

Advertisement for 'FILTERED LUBRICATING OIL' by J. M. Bingham, highlighting its quality and availability.

Advertisement for 'LATHES, PLANERS, SHAPERS, DRILLS' by J. M. Carpenter, listing various manufacturing equipment.

Advertisement for 'WANTED' men to travel and sell goods, offering commissions and expenses.

Advertisement for 'A NEW DEPARTURE' in machinery, featuring a steam band saw and venter cutting mill.

Advertisement for 'HARD-WOOD LUMBER AND CHOICE FIGURED VENEERS' by Geo. W. Read & Co., offering various wood products.

Advertisement for 'N. F. BURNHAM'S 1874 TURBINE WATER WHEEL' with technical details and pricing.

Advertisement for 'CENTENNIAL MILLS' and 'Harrison's Standard Flouring and Grinding Mills'.

Advertisement for 'POND'S TOOLS' including engine lathes, planers, and drills.

Advertisement for 'Boulton's Patent' machinery, featuring reverse motion planing and moulder machines.

Advertisement for 'P. BLAISDELL & CO.' manufacturing various types of machinery.

Advertisement for 'W. F. & JOHN BARNES' manufacturing foot-power machines.

Advertisement for 'EAGLE FOOT LATHES' with detailed descriptions of their features.

Advertisement for 'MANUFACTURERS AND PATENTEES' of various hardware and machinery.

Advertisement for 'NORWICH UNIVERSITY' and 'PATENT COLD ROLLED SHAFTING'.

Advertisement for 'THE HEADLEY PORTABLE STEAM ENGINE' with technical specifications.

Advertisement for 'VELOCIPED CARRIAGES' of light construction.

Advertisement for '\$250 A MONTH' investment opportunity or machinery.

Advertisement for 'HOW TO MAKE SPIRAL SPRINGS' with technical instructions.

Advertisement for 'WOOD-WORKING MACHINERY' including various types of saws and planers.

Advertisement for 'REVERSIBLE HOISTING ENGINE FOR ALL PURPOSES'.

Advertisement for 'OTIS' SAFETY HOISTING MACHINERY' by Otis Bros. & Co.

Advertisement for 'NO MONEY' or financial services.

Advertisement for 'MACHINERY OF IMPROVED STYLES FOR' various industrial purposes.

Advertisement for 'NEW BOOK' by Dr. Chase's Family Physician.

Advertisement for 'BLOSSOM ROCK, HARBOR OF SAN FRANCISCO' with detailed geological or navigational information.

Advertisement for '25 FANCY CARDS' with names and addresses.

Advertisement for 'PATENT DOUBLE ECCENTRIC CORNICE BRAKE' by Thomas & Robinson.

Advertisement for 'SPARE THE CROTON & SAVE THE COST' regarding driven or tube wells.

Advertisement for '\$5 to \$20 per day at home' or similar service.

Advertisement for 'WATER SUPPLY FOR TOWNS AND VILLAGES' by Clarence Delaford.

Advertisement for 'PROPOSALS FOR THE MANUFACTURE OF' patent joiners' clamps.

Advertisement for 'STUBS' FILES, TOOLS & STEEL' by J. M. Montgomery.

Advertisement for '\$77 A WEEK' or financial offer.

Advertisement for 'SHAFTS, PULLEYS, HANGERS, COUPLINGS ETC.' by William Sellers & Co.

Advertisement for 'BLAKE'S PATENT Stone and Ore Breaker'.

Advertisement for 'ADVERTISERS DESIRING TO REACH COUNTRY' readers.

Advertisement for '\$12 a day at home' or similar service.

Advertisement for 'THE HEADLEY PORTABLE STEAM ENGINE'.

Advertisement for 'VELOCIPED CARRIAGES'.

Advertisement for '\$250 A MONTH'.

Advertisement for 'HOW TO MAKE SPIRAL SPRINGS'.

Advertisement for 'WOOD-WORKING MACHINERY'.