

COMMUNICATIONS RECEIVED.

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

- On a Square Acre. By J. H. M.
On Patent Cases in the Courts. By J.
On Cheap Telescopes. By S. M. B.
On Pisciculture. By J. A. M.
On Friction Pulleys. By B. N. C.
On Trisecting an Angle. By J. S. A.
On the Parabolic Mirror. By J. L.
On Reduction of Copper Ores. By F. C.
On Transfusion of Blood. By W. A. G.
On Rheumatism. By J. P.

Also enquiries from the following: L. F.—M. F.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal" which is specially devoted to such enquiries.

[OFFICIAL.]

Index of Inventions

FOR WHICH

Letters Patents of the United States

WERE GRANTED IN THE WEEK ENDING

November 25, 1873,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions and their patent numbers, including items like Acid, making sulphuric, J. Saunders; Alarm, automatic fire, C. H. Lehms; Anchor, Z. Hall; Animals, stock for shoeing, J. Ditch; Axles, turning carriage, W. Jones; Baking mold, G. Wingate; Balances, weighing and price, A. M. Maynard; Barrel hoop, H. Ogborn; Barrel washer, A. Muntzenberger; Bed bottom, Crosby & Cameron; Bed bottom, E. Hoyt; Bed bottom, C. B. Spencer; Bed spring, W. W. Jones; Bee hive, W. S. Hough; Beer, preserving and forcing, E. C. Krausnick; Billiard cue clamp, O. D. Benjamin; Bird cage, E. Hutchinson; Blackboard, adjustable, P. W. Moeller; Boller, farmer's, P. Colvin; Boilers, heater and feeder for, G. C. Williams; Boot, West & Lee (r); Boots, making wood shanks for, W. N. Sprague; Boots, etc., crimping, M. R. Marcell; Bottle, glass, Berden & Trimble; Brush, paper hanger's, J. M. McComb; Butter tubs, etc., hamp for, H. C. Carter; Caisson, A. G. Wolfgram; Car axle box, D. Muzzey; Car axle journal, J. Whitaker; Car coupling, A. F. Chandler; Car coupling, J. T. L. Cochran; Car, dumping, Elliott et al.; Car ticket box, G. C. Thomas; Carbureter, J. Musgrave; Carding, etc., drawing wool after, J. & J. Dobson; Caster, sewing machine, J. K. Proctor; Chair rocker, Wilcox & Depledge; Cloth, finishing nap of, J. Dobson; Clothes dryer, Burch & Webb; Clothes tongs, E. A. Foulke; Coffee pot, Weber & Knutson; Cog-tenoning machine, S. W. Long; Collar and cuff dryer, D. W. De Forest; Corn coverer, J. A. Moore; Corset, woven, J. Ottenheimer; Cultivator, L. Haverstick; Cultivator, B. W. Wingo; Cultivator, hand, A. W. Ross; Curry comb, J. W. Trussell; Curtain fixture, J. F. Wollensak; Digger, potato, A. Willmann; Drain tile, J. Leffler; Dyeing, mordant for, Burgess & La Rhett; Dynamometer, G. W. Bigelow; Earth-boring machine, S. R. Owen; Engine, rotary, Baker & McIntire; Engine, rotary, L. H. Woods; Engine, steam, A. Beekman; Engine parallel motion, etc., A. J. L. Loretz; Engine valves, actuating, F. Chase; Fertilizer, manufacture of, H. Stevens; Fire arm, breech-loading, Scott & Matthews; Fire arm, breech-loading, H. N. Sherman; Fire indicator and alarm, J. Fawcett; Fishing stake, J. O. Campbell; Flour, manufacture of, T. Carr; Forge, blacksmith's, W. T. Kellogg; Fumigator, A. R. Denlinger; Furnace, blast, F. Buttgenbach; Furnace, desulphurizing, Hegeler et al.; Garden-cultivating implement, D. Mack; Gas carbureting apparatus, A. W. Porter; Gas manufacture, H. Skoines; Gas meter, paper dry, Schüssler & Dieterich; Gas pipes, clearing, Goldsmith et al.; Gas retort mouth piece, P. Munzinger; Gate, farm, W. Lucas; Governors, safety appliance for, J. Gaskell; Grain scourer, C. B. Horton; Grain separator, S. Day; Grape and flower picker, C. W. H. Delano; Grass, cutting flower maker's, T. & J. Millot; Grindstone wetting device, D. Cumming, Jr.; Hammer, tack, G. J. Capewell; Hammers, machine for forging, W. Evans; Harness pad, S. A. Marker; Harness safety strap, C. W. Nichols; Harrow, L. C. Rumberger; Harrow, circular, G. W. Hills; Hat conformator, J. J. McKnight; Heel stiffeners, making, J. Samuels; Hinge, blind, L. Gathmann; Hinge, shutter, W. Fosket; Hog ringing pliers, J. C. Schoettle; Horseshoe, R. F. Cooke.

Table listing inventions and their patent numbers, including items like Horseshoe nails, finishing, S. S. Putnam; Hose coupling, T. J. Mayall; Hose coupling, spanner, L. Pond; Hose pipes, stop nozzle for, J. N. Allen; Indicator, pneumatic, Kealy & Rigney; Ingots for alloy, copper, J. Felix; Inkstand, B. Brower; Inkstand, T. S. Shenston; Iron finery fire, Ash & Walker; Ironing machine, J. F. Walker; Jack, lifting, Hamilton & Conner; Knit fabric, B. J. McGee; Ladder, fireman's, M. Cronin; Last block fastener, N. R. Streeter; Laster, shank, W. H. Hanna; Latch, door, F. Stowe; Latch, gate, J. Bull (r); Leather splitting machine, Goebel & Preis; Letter box, B. B. Gurley; Locomotive smoke stack, J. V. Bishop; Lubricating compound, N. D. Smith; Malt polishing apparatus, W. W. Stoll; Measurer, spooling machine, Keith & Seaver; Medical compound, G. F. Munro; Milk cooler, Crane & Hadley; Mill, fulling, R. Eickemeyer; Millstone dressing machine, diamond, D. Laver; Mop wringer, A. W. Bannell; Nail machine, cut, W. Haddock; Needle threader, F. R. Gaspar; Nut lock, W. H. Bowman; Nut lock, C. Dittman; Nut lock, C. A. Howard; Oil cabinet, T. Miller; Oven for plate glass, flattening, J. B. Boulicault; Fall, folding, Du Chateau & Williams; Paint, manufacture of, F. W. Gerdes (r); Paper machines, stuff regulator for, D. Hamel; Photographic plate holder, A. Semmendinger; Piano string bridge, W. C. Ellis; Pipe coupling, D. Ashworth; Plane, metallic, J. F. Baldwin; Planing machine, J. Rankin; Planter, corn, J. G. La Fonte; Planter, hand, M. P. Nemmers; Plow, A. K. Dahl; Plow, steam, Allen, Brown & Moulthrop; Plug, testing, J. Allin; Power, spring, T. Ebeling; Press, hand power baling, P. C. Ingersoll; Printing press, feeding, J. T. Ashley; Printing enameled surfaces, S. J. Hoggson; Propellers, operating screw, A. McDonald; Pump, J. W. Douglass; Pump valve, Gould & Campfield; Purifier, middlings, E. N. Lacroix; Quicksilver, purifying, Randol & Wright; Radiator, steam, A. L. Ide; Railway frog, J. Wood; Railway rail fastening, A. M. Rouse; Railway switch, T. J. Reynolds; Railway switch, W. A. Slingerland; Railway switches, operating, J. Wood; Railway switch, self-closing, Hubbell & Gregory; Rake, horse hay, G. Sweet; Refining and desilvering lead, G. Luce; Register for machinery, S. F. Payne; Rubber, etc., compounds of, T. J. Mayall; Saddle, T. H. McGrath; Safe doors, operating, H. B. Tripp; Sample case, revolving, J. F. Randolph; Sap spout, H. B. Sevey; Saw mill dog, E. H. Stearns; Saw mill dog, J. Torrent; Saw mill head block, Prescott et al.; Saw set, W. J. Boynton; Scraper, road, R. F. Read; Scraper, road, Warner & Kingsley; Seeder, broadcast, J. R. Scarborough; Seeding machine, M. Schnapp; Seeding machine, E. Witzigman; Sewer bottom, cement, M. Day; Sewing machine, D. Porter; Sewing machine, O. St. Amant; Sewing machine, caster, J. K. Proctor; Sewing machine extension table, J. Benner, (r); Shovel, sifting, C. Kaestner; Signal, fog, G. C. Pattison; Signal, railway, E. R. Marshall; Skirt, skeleton, P. Lippmann; Sleigh brake, T. H. Bromley; Smoke consuming apparatus, W. B. W. Smith; Soda water tumbler holder, J. Matthews; Spark arrester, G. Swenson; Spinning machine spindle, W. G. Perry; Spoke setting machine, W. R. Greene; Spring, door, F. H. Richards; Steel, manufacture of, C. M. Nes; Stoner, cherry, Buck & Kirk; Stove pipe stretcher, etc., G. Elsey; Strap coupling, T. Cogswell; Stubblehaver and scraper, Von Phul, Jr. et al.; Sulky, L. H. Jennison; Suspenders, T. J. Flag; Table, ironing, L. Scofield; Tablet, writing, C. N. Brown; Tan drying apparatus, N. Porter; Thrashing machine, J. Smith; Toy, automatic, A. H. Dean; Trap, fly, Packard & Standish; Truss, brace, H. H. Roedel; Umbrella, H. L. Power; Umbrella, C. B. Spencer; Valises, etc., connecting frames of, C. Vottl.; Valve, A. Marrott; Varnish, refining, F. Kersting; Varnish for wood, metal, etc., J. F. Chevallier; Veneer cutting machine, W. H. Williams; Vessels' booms, antifricition, H. Gregory, Jr.; Vessels, center board for, J. Espalla; Vise, adjustable bench, J. B. Wardwell; Wagon brake, E. N. Jack; Watch, stem winding and setting, E. J. Pacaud; Watches, reversible center pinion for, O. Gates; Water tank for hotels, J. H. Corey; Water wheel, B. J. Barber; Whiffletree, D. S. Sloan; Wire-drawing machine, J. & E. Woods; Wood, compound for filling, C. E. Bradley; Wrench, T. L. Buckley; Wrench bars, die for forging, L. Coes; Wrench, hose, E. Bucklin, Jr.

APPLICATIONS FOR EXTENSIONS.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter mentioned: 27,297.—RAILROAD CAR COUPLER.—E. C. Knight. Feb. 11. 27,303.—FASTENING SAW HANDLES.—J. Neimeyer. Feb. 11.

EXTENSIONS GRANTED.

- 26,243.—WATER CLOSET BASIN.—W. Boch, Sr.
26,262.—JOURNAL BOX.—W. M. Ferry, Jr.
26,276.—INDIA RUBBER HOSE.—T. J. Mayall.
26,321.—METAL CASTING MOLD.—J. P. Broadmeadow.
26,327.—NURSING BOTTLE.—F. J. La Ferme.
26,329.—BOOT TIP.—N. Silverthorn.

DESIGNS PATENTED.

- 7,002.—KNIFE HANDLE.—J. D. Frary, New Britain, Conn.
7,003.—INKSTAND.—G. W. McGill, New York city.
7,004.—ORNAMENTAL MAT.—L. Moeslein, New York city.

TRADE MARKS REGISTERED.

- 1,537.—EMERY.—Abbott & Howard, Boston, Mass.
1,538.—GUANO.—Guanahani Guano Co., Petersburg, Va.
1,539.—PLOWS.—Hunter & Co., Fredericksburg, Va.
1,540.—PEPPERMINT, ETC.—Felix Prot & Co., Paris, France.
1,541.—CIGARS.—T. B. Slingerland, Rome, N. Y.
1,542.—CIGARS, ETC.—Consolidated Tobacco Co., Gilroy, Cal.
1,543.—TEAS, ETC.—Great Eastern Tea Co., Terre Haute, Ind.
1,544.—ORGANS.—G. Woods & Co., Cambridgeport, Mass.

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 application for Extension of Patent \$50; On granting the Extension \$50; 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.

[Specially reported for the Scientific American.]

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA FROM NOVEMBER 25 TO DECEMBER 5, 1873.

Table listing Canadian patents, including items like 2,884.—T. W. Perry, Ringwood village, York county, Ontario. Composition of matter for a table sauce, called "Perry's Indian Chutney Sauce." Nov. 25, 1873. 2,885.—I. K. Proctor, Salem, Essex county, Mass., U. S., assignee of J. K. Proctor, Malden, Middlesex county, Mass., U. S. Improvement for sewing machine tables or stands, etc., called "Proctor's Caster Attachment for Sewing Machine Table, etc." Nov. 25, 1873. 2,886.—D. Saul, New Edinburgh, Carleton county, Ontario. Improvement in hoisting machine, called "Saul's Improved Hoisting Machine." Nov. 25, 1873. 2,887.—W. M. Rice and A. D. Cable, Montreal, P. Q. Improvement in laying the permanent way of railways, called "Rice's Cushioned Rail." Nov. 25, 1873. 2,888.—T. Paxton, Wm. Tate and C. Paxton, Fort Perry, Ontario county, Ontario, assignees of Wm. Dunn, same place. Machine for attaching to or connecting with gang plows, called "Dunn's Improvement on Gang Plows." Nov. 25, 1873. 2,889.—J. C. Schoonmaker, Kansas City, Jackson county, Mo., U. S. Improvement on lightning rods, called "Schoonmaker's Insurance Lightning Rod." Nov. 28, 1873. 2,890.—W. W. Weaver, New Haven, Oswego county, N. Y., U. S. Improvement on turbine wheels, called "Weaver's Volute Chute Turbine." Nov. 28, 1873. 2,891.—J. G. Loggins and T. P. Wilkins, Williston, Chittenden county, Vt., U. S. Improvement on machine for cutting the notch in wooden hoops for barrels, etc., called "The Hoop Locker." Nov. 28, 1873. 2,892.—C. Campbell, Montreal, P. Q., and J. A. Laemie, Staten Island, U. S. Improvement on printer's furniture, called "Campbell's Improved Printer's Furniture." Nov. 28, 1873. 2,893.—Honorable H. Aylmer, Melbourne, District of St. Francis, P. Q. Improvement on machine for cutting clapboards, called "Aylmer's Clapboard Machine." Nov. 28, 1873. 2,894.—G. Boucher de Boucherville, P. Q. Nouvelles maniere de se servir des lames pour propulser le navires, "Lame Moteur." Nov. 28, 1873. Improvement in "new paddles for propelling vessels." 2,895.—J. C. Livermore, Boston, U. S. Improvement on skirt protectors, called "The Oracoline or Dayton Skirt Protector." Nov. 28, 1873. 2,896.—H. Parker, Gananogue, Leeds county, Ontario. Improvement in the art or process of molding cores and mold employed for casting the cores by such improved process, called "Parker's Improved Process and Mold for Casting Cores." Nov. 28, 1873. 2,897.—J. P. Bass, Bangor, Penobscot, Me., U. S., assignee of H. C. Bucknam, Bricksport, Hancock county, Me., U. S. Improvement on the process or method of cleaning surface condensers, called "Bucknam's Process for Cleaning Surface Condensers." Nov. 28, 1873. 2,898.—F. H. Perry, Drummondville, Welland county, Ontario. Machine for washing textile fabrics, called "Perry's Hydraulic Washer." Nov. 28, 1873. 2,899.—Wm. C. Sillar, No. 1 St. Swithin's Lane, London, Eng., R. G. Sillar, Lee, Kent county, Eng., and C. Rawson, No. 1 St. Swithin's Lane, London, Eng. Improvement on Geodorizing, purifying and utilizing sewage, night soil, excreta and excrementitious and refuse matters, called "The Native Guano Company's Improvement on Deodorizing, Purifying and Utilizing Sewage, Urine, Night Soil, Excreta and Excrementitious and Refuse Matters." Dec. 5, 1873. 2,900.—S. Standish, Eureka, Lander county, Nevada, U. S. Improvement on Brooms, called "Standish's Broom." Dec. 5, 1873. 2,901.—C. Stoner, Montreal, P. Q., assignee of I. Fisher, Boston, Mass., U. S. Improvement on mechanism for lighting gas burners, called "Fisher's Automatic Gas Lighter." Dec. 5, 1873. 2,902.—E. Moneau, San Francisco, Cal., U. S. Improvement on sewing machine, chiefly designed for embroidering and stitching button holes, called "The Eureka Button Hole Sewing Machine." Dec. 5, 1873. 2,903.—T. Baty, Westminster township, Middlesex county, Ontario. Useful fence, called "Baty's Farm Fence." Dec. 5, 1873. 2,904.—I. Fréchette, St. Hyacinthe, P. Q. Améliorations aux rateaux de moissonneuses, called "Rateaux de Moissonneuses Améliorées." Dec. 5, 1873. Improvement on rakes for mowing machines. 2,905.—D. Heaton, Providence, R. I., U. S. Improvement in combination tools, called "The Imp." Dec. 5, 1873. 2,906.—F. Rogers, Lynn, Essex county, Mass., U. S. Improvement on the manufacture of shoes, called "Rogers' Improved Shoe." Dec. 5, 1873. 2,907.—J. L. and D. H. Coles, New York city, U. S. Im-

Table listing improvements on sewing machines, called "Cole's Universal Feed Sewing Machine." Dec. 5, 1873. 2,908.—J. Miller, Perth, Lanark county, Ontario. Improvement on sewing machines, called "The Miller Sewing Machine." Dec. 5, 1873. 2,909.—J. H. Copping, Toronto, Ontario. Improvement on a machine for the rolling, printing and cutting of lozenges, called "Copping's Improvements on Lozenge machine." Dec. 5, 1873. 2,910.—H. J. Davies, Brooklyn, Kings county, N. Y., U. S. Improvements on machines for printing and embossing skirts and other articles, called "Davies' Machine for Printing and Embossing Skirts." Dec. 5, 1873. 2,911.—H. F. Knapp, New York, U. S. Improvements o means for raising and floating wrecks and sunken vessels, called "Knapp's Improved Means for Raising and Floating Wrecks." Dec. 5, 1873. 2,912.—J. Varney, Montreal. Improvement on washing machine, called "Varney's Washing Machine." Dec. 5, 1873. 2,913.—D. S. McKinnon, Carleton Place, Lanark county Ont. Improvement in sewing machine stands and covers, called "Mack's Sewing Machine Stand." Dec. 5, 1873. 2,914.—P. D. Cummings, M. Smith and J. C. Jordan, all of Portland, Maine, U. S. Improvement in match slitting machine, called "Cummings, Smith and Jordan's Match Slitting Machine." Dec. 5, 1873. 2,915.—T. A. Heintzmann, Toronto, Ont. Improvement on pianofortes, called "Heintzmann's Improved Bridge." Dec. 5, 1873. 2,916.—W. M. Fuller, New York, U. S. Improvement on heating apparatus, called "Fuller's Improved Heating Apparatus." Dec. 5, 1873. 2,917.—M. Thibault, Hull, Ottawa county, P. Q., and S. Benoit, of Ottawa, Carleton county, Ont. Improvement on machine for cutting nails, called "Thibault's Improved Nail Cutter." Dec. 5, 1873. 2,918.—D. M. Lamb, Strathroy, Middlesex county, Ont. Improvement on filters for oil and other liquids, called "Lamb's Combined Oil Filter." Dec. 5, 1873. 2,919.—D. M. Lamb, Strathroy, Middlesex county, Ont. Manufacturing and treating vulcanizable gum and hydrocarbon oils, called "Lamb's Gum and Oil Process." Dec. 5, 1873. 2,920.—D. M. Lamb, Strathroy, Middlesex county, Ont. Compound vulcanizable gum, called "Lamb's Vulcanizable Waterproof Gum." Dec. 5, 1873.

HOW TO OBTAIN Patents and Caveats IN CANADA.

PATENTS are now granted to inventors in Canada, without distinction as to the nationality of the applicant. The proceedings to obtain patents in Canada are nearly the same as in the United States. The applicant is required to furnish a model, with specification and drawings in duplicate. It is also necessary for him to sign and make affidavit to the originality of the invention. The total expense, in ordinary cases, to apply for a Canadian patent, is \$75. U. S. currency. This includes the government fees for the first five years, and also our (Munn & Co.'s) charges for preparing drawings, specifications and papers, and attending to the entire business. The holder of the patent is entitled to two extensions of the patent, each for five years, making fifteen years in all. If the inventor assigns the patent, the assignee enjoys all the rights of the inventor. A small working model must be furnished, made to any convenient scale. The dimensions of the model should not exceed twelve inches. If the invention consists of a composition of matter, samples of the composition, and also of the several ingredients, must be furnished. Persons who desire to apply for patents in Canada are requested to send to us (MUNN & CO.) by express, a model with a description in their own language, showing the merits and operation of the invention, remitting also the fees as above for such term for the patent as they may elect. We will then immediately prepare the drawings and specification, and send the latter to the applicant for his examination, signature, and affidavit. It requires from four to twelve weeks' time, after completion of the papers, to obtain the decision of the Canadian Patent Office. Remit the fees by check, draft, or postal order. Do not send the money in the box with model. Give us your name in full, middle name included. Inventions that have already been patented in the United States for not more than one year may also be patented in Canada. On filing an application for a Canadian patent, the Commissioner causes an examination as to the novelty and utility of the invention. If found lacking in either of these particulars, the application will be rejected, in which case no portion of the fees paid will be returned to the applicant. Inventors may temporarily secure their improvements in Canada by filing caveats; expense thereof, \$35 in full. For further information about Canadian patents, assignments, etc., address MUNN & CO., 37 Park Row, New York. VALUE OF PATENTS, And How to Obtain Them. Practical Hints to Inventors. ROBABLY no investment of a small sum of money brings a greater return than the expense incurred in obtaining a patent, even when the invention is but a small one. Large inventions are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericsson, Howe, McCormick, Hoe and others, who have amassed immense fortunes from their inventions, are well known. And there are thousands of others who have realized large sums from their patents. More than FIFTY THOUSAND inventors have availed themselves of the services of MUNN & CO. during the TWENTY-SIX years they have acted as solicitors and Publishers of the SCIENTIFIC AMERICAN. They stand at the head in this class of business; and their large corps of assistants, mostly selected from the ranks of the Patent Office; men capable of rendering the best service to the inventor, from the experience practically obtained