

Practical Hints to Inventors.

MUNN & CO., Publishers of the **SCIENTIFIC AMERICAN** have devoted the past twenty-five years to the procuring of Letters Patent in this and foreign countries. More than 50,000 inventors have availed themselves of their services in procuring patents, and many millions of dollars have accrued to the patentees, whose specifications and claims they have prepared. No discrimination against foreigners; subjects of all countries obtain patents on the same terms as citizens.

How Can I Obtain a Patent?

As the closing inquiry in nearly every letter, describing some invention which comes to this office. A positive answer can only be had by presenting a complete application for a patent to the Commissioner of Patents. An application consists of a model, Drawings, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning. If the parties consulted are honorable men, the inventor may safely confide his ideas to them: they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights.

How Can I Best Secure My Invention?

This is an inquiry which one inventor naturally asks another, who has had some experience in obtaining patents. His answer generally is as follows and correct:

Construct a neat model, not over a foot in any dimension—smaller if possible—and send by express, prepaid, addressed to **MUNN & CO.**, 37 Park Row New York, together with a description of its operation and merits. On receipt thereof, they will examine the invention carefully, and advise you as to its patentability, free of charge. Or, if you have not time, or the means at hand, to construct a model, make as good a pen and ink sketch or the improvement as possible, and send by mail. An answer as to the prospect of a patent will be received, usually, by return of mail. It is sometimes best to have a search made at the Patent Office; such a measure often saves the cost of an application or a patent.

Preliminary Examination.

In order to have such search, make out a written description of the invention, in your own words, and a pencil, or pen and ink, sketch. Send these with the fee of \$5, by mail, addressed to **MUNN & CO.**, 37 Park Row, and in due time you will receive an acknowledgment thereof, followed by a written report in regard to the patentability of your improvement. This special search is made with great care, among the models and patents at Washington, to ascertain whether the improvement presented is patentable.

Caveats.

Persons desiring to file a caveat can have the papers prepared in the shortest time, by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address **MUNN & CO.**, 37 Park Row, New York.

To Make an Application for a Patent.

The applicant for a patent should furnish a model of his invention, if susceptible of one, although sometimes it may be dispensed with; or, if the invention be a chemical production, he must furnish samples of the ingredients of which his composition consists. These should be securely packed, the inventor's name marked on them, and sent by express, prepaid. Small models, from a distance, can often be sent cheaper by mail. The safest way to remit money is by a draft, or postal order, on New York, payable to the order of **MUNN & CO.** Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents.

Re-issues.

A re-issue is granted to the original patentee, his heirs, or the assignees of the entire interest, when, by reason of an insufficient or defective specification, the original patent is invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

A patentee may, at his option, have in his reissue a separate patent for each distinct part of the invention comprehended in his original application by paying the required fee in each case, and complying with the other requirements of the law, as in original applications. Address **MUNN & CO.**, 37 Park Row, for full particulars.

Trademarks.

Any person or firm domiciled in the United States, or any firm or corporation residing in any foreign country where similar privileges are extended to citizens of the United States, may register their designs and obtain protection. This is very important to manufacturers in this country, and equally so to foreigners. For full particulars address **MUNN & CO.**, 37 Park Row New York.

Design Patents.

Foreign designers and manufacturers, who send goods to this country, may secure patents there upon their new patterns, and thus prevent others from fabricating or selling the same goods in this market.

A patent for a design may be granted to any person, whether citizen or alien, for any new and original design for a manufacture, bust, statue, alto-relievo, or bas relief; any new and original design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture, to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture.

Design patents are equally as important to citizens as to foreigners. For full particulars send for pamphlet to **MUNN & CO.**, 37 Park Row, New York.

Rejected Cases.

Rejected cases, or defective papers, remodeled for parties who have made applications for themselves, or through other agents. Terms moderate. Address **MUNN & CO.**, stating particulars.

European Patents.

MUNN & CO. have solicited a larger number of European Patents than any other agency. They have agents located at London, Paris, Brussels, Berlin, and other chief cities. A pamphlet pertaining to foreign patents and the cost of procuring patents in all countries, sent free.

MUNN & CO. will be happy to see inventors in person, at their office, or to advise them by letter. In all cases, they may expect an honest opinion. For such consultations, opinion, and advice, no charge is made. Write plain: do not use pencil, nor pale ink; be brief.

All business committed to our care, and all consultations, are kept *secret and strictly confidential*.

In all matters pertaining to patents, such as conducting interferences, procuring extensions, drawing assignments, examinations into the validity of patents, etc., special care and attention is given. For information, and for pamphlets of instruction and advice, Address

MUNN & CO.,

PUBLISHERS SCIENTIFIC AMERICAN,

37 Park Row, New York.

OFFICE IN WASHINGTON—Corner F and 7th streets, opposite Patent Office.

Examples for the Ladies.

Mrs. Elizabeth A. Monaghan, of Brooklyn, N. Y., has used her Wheeler & Wilson Machine since 1861. During the war she stitched forty blouses a day of eight hours, averaging about \$16 a week: since then she has stitched from thirty to thirty-six linen coats a day. Last year, in three months, she stitched 1274 line coats, earning \$186.46, besides doing her own housework and tending her baby. She would use no other Machine.

Jennie A. Van Cott, Glenwood, N. Y., exchanged in 1858 a — for a \$50 Wheeler & Wilson Machine, which was used constantly five years making coats and vests; since then it has annually been changed from city to country for family sewing, and is now in good repair, doing the stitching in a first-class dress-making establishment. It did \$400 worth of stitching in eight months of last year.

Grocers, Spice Dealers and Druggists all sell Burnett's Standard Flavoring Extracts.

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.

Valve Refitting Machinery, sold by C. F. Hall & Son, sole manufacturers of the only original Patent Machines. Office, 21 Murray Street, New York.

Cast Cast Steel Plow Shares or Points are made by the Pittsburgh Steel Casting Co., which can be Worked and Sharpened as other steel. See advertisement.

The Exeter Machine Works, Exeter, N. H., manufacturers of Sectional Boilers and Steam Engines, will soon open, in Boston, Mass., a centrally located sales room, in connection with their works; and are willing to take the agency of a few first class Machines and Tools not already introduced in that city.

Manufacturers of Machinery for Splitting and Shaving Hoops, please send circulars to Soul, Kritstinger & Co, Fort Madison, Iowa.

For Diamond Turning Tools, for Emery Wheels and Grindstones, address Sullivan Machine Co., Claremont, N. Hamp.

Glass Cutters' Grindstones at reduced prices—Mitchell, Phil.

Craigleith Grindstones—40 cts. an inch—J. E. Mitchell, Phil.

Manufacturers of engines, boilers, engineer's supplies, and machinery of all kinds—and parties wishing the same—will find it to their advantage to communicate with Richard H. Buel, Consulting Mechanical Engineer, 7 Warren Street, New York.

Grindstones for manufacturing purposes a specialty—made by Worthington & Sons, North Amherst, Ohio. Send for price list.

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 & Towle, 176 Broadway, New York.

The Coal and Iron Record for all interested in Coal and Iron. Market reports a specialty. Manufacturers, Architects and others will find it very valuable and entirely reliable. All news dealers have it. Western & Company, Publishers, New York.

Hoisting Engines. Simplest, cheapest, and best. Send to John A. Lighthall, Beekman & Co., Office 5 Bowling Green, New York.

Opium Eaters—If you wish to be cured of the habit, address T. E. Clarke, M. D., Mount Vernon, Ohio.

L. & J. W. Feuchtwanger, 55 Cedar St., New York, Manufacturers of Silicates, Soda and Potash, Soluble Glass, Importers of Chemicals and Drugs for Manufacturers' use.

New & Improved Bolt Forging Machines, J. R. Abbe, Prov., R. I.

Portable Mulay Saw Mill, that may be run profitably by the power of a Thrashing Engine. Manufactured by Chandler & Taylor Indianapolis, Ind. Send for circular.

The N. Y. Manuf'g Co., 21 Courtland St., N. Y., buy, sell, and manufacture Patented articles. Illustrated Catalogue, 48 pages, free.

Patent Rotary Engine; for all purposes, two to one hundred horse power; equal to any, for less price. Send for particulars and price list to John A. Lighthall, Beekman & Co., corner Imlay and Verona Streets, Brooklyn, N. Y.

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

Best and Cheapest—The Jones Scale Works, Binghamton, N. Y.

New Pat. Quick and easy way of Graining. First class imitations of Oak, Walnut, Rosewood, &c. Send stamp for circular. J. J. Callow, Cleveland, Ohio.

The "Railroad Gazette" will be sent three months for \$1.00. Address at 72 Broadway, New York.

Sperm Sewing Machine Oil, in Bottles, Cans, and Barrels. W. F. Nye, New Bedford, Mass.

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

Hoisting and Pumping Engines (Locomotive principle); best and simplest, from 6 to 40 H. P. J. S. Munday, 7 R. Av., Newark, N. J.

Patent Interlocking Grate Bars—Used and approved in 5000 furnaces, in the principal manufactures in the United States. Superior to all others in durability, and economy of fuel. No economist can afford to do without them. Address Salamander Grate Bar Co., 32 Broadway, N. Y. Save your Fuel—by using L. B. Tupper's Celebrated Furnace Grate Bar, guaranteed to make from 5 to 10 lbs. more steam, with less fuel, than any other Bar, and are more durable. Send for pamphlet. L. B. Tupper, 120 West Street, New York.

Asbestos and Silicate of Soda in large and small quantities. E. D. & W. A. French, 3rd & Vine Sts., Camden, N. J.

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

Enameled and Tinned Hollow-Ware and job work of all kinds. Warranted to give satisfaction, by A. G. Patton, Troy, N. Y.

For Circular of the largest variety of Wood Planing and Miter Dovetailing Machinery, send to A. Davis, Lowell, Mass.

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. E. Baldwin, Laconia, N. H.

Scale in Steam Boilers.

We will remove and prevent Scale in any Steam Boiler, or make no charge. Geo. W. Lord, 232 Arch street, Philadelphia, Pa.

Rubber Valves—Finest quality, cut at once for delivery; or moulded to order. Address, Gutta Percha & Rubber Mfg Co., 9 & 11 Park Place, New York.

Williamson's Road Steamer and Steam Plow, with Thomson's Tires. Address D. D. Williamson, 32 Broadway, N. Y., or Box 1800.

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.

Boynton'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. Boynton, 80 Beekman Street, New York, Sole Proprietor.

For Hand Fire Engines, address Rumsey & Co., Seneca Falls, N. Y.

Over 800 different style Pumps for Tanners, Paper Makers, Fire Purposes, etc. Send for Catalogue. Rumsey & Co., Seneca, Falls, N. Y.

Grist Mills, New Patents. Edward Harrison, New Haven, Conn. Taft's Portable Hot Air Vapor and Shower Bathing Apparatus

Address Portable Bath Co., Sag Harbor, N. Y. Send for Circular.

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

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct.

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

For 2 & 4 Horse Engines, address Twiss Bros., New Haven, Ct.

The Greenleaf Grate Bars saves fuel, and lasts much longer than the ordinary bar. Address Greenleaf Machine Works, Indianapolis, Ind. All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue.

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

Presses, Dies, and Tinner's 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 Umon 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.

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

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.—CASTOR BEAN POMACE.—What is its value as a fertilizer, what should it be mixed with, and how much should be used per acre?—H. S.

2.—TRUEING GRINDSTONES.—Will some of your correspondents inform me how grindstones can be kept true by the means of a gas pipe?—A. J. P. S.

3.—COPAL VARNISH.—I would like to have a recipe for making a first quality copal or coach varnish.—L. G.

4.—SOLDERING STEAM PIPES.—Will some one please inform me of the best means of stopping cracks or leaks in steam or water pipes? Is there any way of soldering them?—E. W. K.

5.—ELECTROMAGNET.—What is the best way to make an electromagnet? Should the wire on the spools be in contact with the iron, or should it be insulated?—F. L. T.

6.—TEMPERING SPRINGS.—What is the best method of tempering cast steel springs, such as trap springs, gun main springs, etc.?—W. H. R.

7.—WELDING CAST STEEL.—Can any of your correspondents inform me of any method of welding steel castings, such as pitmans?—W. H. L.

8.—CEMENT FOR BRASS AND RUBBER.—Will any of your correspondents inform me of an insoluble cement which will hold together finished brass and rubber, or cork?—J. L.

9.—HEATING WITH STEAM.—Will some one tell me the proper size of a boiler which will heat, with steam, a house two stories high, with twelve rooms, containing say 50,000 cubic feet? The boiler is to be placed in the basement.—E. D. M.

10.—PERMANENT PENCIL MARKS.—Is there a kind of paper or cloth so prepared that, when pressed on a sheet of paper which is written on with a common lead pencil, it will cause the pencil marks to become permanent and ineffaceable.—A. F. S.

11.—DISLODGING SOOT.—There is wanted very much, out here in Iowa where we burn so much soft coal, some preparation which burned in the stove or in the flue or pipe, or vaporized therein, will cause the coal soot to become dislodged from pipe and flue, and fall down?—A. F. S.

12.—CLEANING GUTTA PERCHA.—Can any one tell me how to keep the gutta percha covering, on the telegraph magnet, nice and shining?—O.

13.—PAPER FRICTION PULLEYS.—I would like to learn, through the SCIENTIFIC AMERICAN, how paper friction pulleys are made, and whether they are better than wood or leather to drive iron pulleys?—L. I. O.

14.—GALVANISM IN WINE MANUFACTURE.—Will "Amateur," of Paris, France, tell me definitely the mode of application in this process? Are the silver plates to be in contact in the juice, and if not, how far apart? The right dimensions of the plates and battery will also be valued by me.—J. S.

15.—Mr. W. H. Dabney, of Teneriffe, U. S. Consul for the Canary Islands, writes to ask whether any of our readers can give him information about a machine for separating the fibers of agave, sisal and New Holland hems, as well as those of analogous plants; and also by whom such a machine is manufactured.

16.—BROWNING GUN BARRELS.—Will some correspondent give me a little information on this point? I use the following prescription for browning iron, gun barrels, etc.: Tincture of muriate of iron, 1 ounce nitric ether, 1 ounce sulphate of copper, 4 scruples, rain water, 1 pint. Now what I wish to know is, how long ought the barrel to remain after the application of the liquid. How can I best stop the action of the acid? And what's the best mode of finishing the article thus treated? I have seen work, finished with this preparation, with a fine glossy appearance; how is it produced?—W. H. R.

17.—SHRINKING OF WOOLENS.—Can any one give us through the columns of your interesting paper, the philosophy of the shrinking of woollens by successive washing? I know finely made and substantial woollen shirts become too small to wear, long before they were worn out. Perhaps it was the fault of the washwoman, perhaps not. Is there a way of washing them that will not shrink them?—F. X. M.

18.—STEADYING THE MOTION OF GANG SAWS.—I have a large gang mill in Pennsylvania, with forty saws hung in one gate, driven by a large steam engine. I have had a great deal of trouble in trying to get it to run steadily, and have not yet succeeded. It is a very heavy gate, weighing nearly 5,600 pounds, and is hung upon the wrist. Now, can I find a point