

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 void for as advertisements at 1-00 a line, under the head of "Business and Personal."

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

A GENERAL REPLY TO A LARGE NUMBER OF CORRESPONDENTS.—H. says he has a 6 horse power, in connection with a two story building 20 feet square, and wants manufacturing business to occupy his premises.—H. R. G. wants to know the cheapest and best shot gun and rifle combined; also, wants our opinion of the Veeley rifle.—R. D. wants an ice machine.—J. M. S. wants a spoke lathe, wants us to tell him the price, where made, and how much it will do, all at the earliest possible moment.—W. F. F. wants a good work on horseshoeing.—J. H. S. wants a machine that will cut guttapercha into very small pieces with but little trouble.—J. M. desires to purchase a paper bag machine.—W. A. P. wants a shingle machine that cuts with a knife.—F. C. calls for information as to the best manner of setting a boiler 22 feet by 42 inches, with two 16 inch flues; fuel, gas coke.—L. P. asks if any of the concrete or asphalt pavements have proved satisfactory.—J. G. H. asks for reliable parties to sell a patent.—J. M. asks for information about drilling artesian wells, tools required, and the address of parties who make the machinery. Wants the information for a missionary friend who, he says, lives in "Cyria."—W. A. wants to know where he can get a good machine for bending plow handles of oak wood.—T. L. C. asks us to tell him who make wind mills.—G. T. C. asks for a list of trades where an apprentice can get his board and small pay for first year; also, how much powder a No. 11 shot gun, 28 inches long, ought to burn; also, what a small hand printing press with type and outfit costs.—A. J. H. wants the manufacturers address of the toy horse.—W. S. B. asks us to tell him which of the many lightning rods we consider the best.—L. S. wants us to tell him which, knitting machine we think is the best.—C. B. asks where to purchase a good telescope.—J. B. B. asks where he can procure an odometer.—C. T. G. wants to know if there is anything better for roofs than charcoal tin; also, if we know the merits of the patent continuous roofing.—J. H. W. calls for the best book of architectural designs for cottages.—M. A. asks about asbestos roofing.—E. L. asks for our opinion, confidentially, about the merits of a corn sheller, and a combination rule instrument.—D. W. A. wants to know who makes the best and latest improved chair making machinery.—A subscriber asks where Stuart's annealed wire is made.—I. J. M., wants the best works on steam engines and boilers; also, on mechanics, agriculture, stock raising, etc.—S. C. C. asks where "Webster's patent zinc metal paint" can be obtained.—F. wants to know if Howard & Co., Waltham Watch agents, are responsible.—E. P. N. wants detailed drawings of the monitor roof cars.—C. & F. want to find parties who supply a pure article of plumbago.—G. C. H. wants the best spring or weight power for churns.

The above are *bona fide* enquiries taken at random from hundreds that we are constantly receiving from all parts of the country—mostly from subscribers to the *SCIENTIFIC AMERICAN*. It is impossible for us to attempt to answer them, either by letter or in our paper. Answers to some of them can be found, if the writers will take the trouble to consult the back pages of the *SCIENTIFIC AMERICAN*. Manufacturers of the various articles may secure these customers, and obtain others by inserting short advertisements in our paper. For every person who writes us for an article, there are perhaps a hundred others who want the same thing, that do not write to us, but are on the lookout for the proper advertisements. As to the merits of various articles, we cannot undertake to advise our correspondents, but we say to them that, as a general rule, the best goods are those that are advertised in the *SCIENTIFIC AMERICAN*.

CONDENSATION OF STEAM IN LONG PIPES.—In answer to query of Y. S., in the issue of Sept. 2nd, I would say that I had occasion recently to make a test of the difference in pressure of steam through an inch pipe, 300 feet long, running entirely exposed through an open planing mill. The pressure on the boilers was 76 pounds. The test gage at the other end showed a pressure of 70 pounds, making a difference of 6 pounds. The gage on the boiler had been used over a year, and doubtless showed a little more pressure than there really was.—F. G. C., of Vt.

FALLING BODIES.—The formula given by T. E. N. E. on page 218 of the *SCIENTIFIC AMERICAN*, in reply to J. E., would make the impact of 1 lb. falling 2 feet appear to be 11-34 foot pounds. Whereas, it has been found by actual observation to be 50 pounds. If J. E. will multiply the weight by the velocity at end of the fall, and the product by 4'426, he will have the true impact.—D. A. M., of N. Y.

SUBSTITUTE FOR BRASS.—In answer to query No. 8, signed F. W., in the *SCIENTIFIC AMERICAN* of Sept. 2nd, I would say that I have found Williams' Diamond Metal a very good substitute for brass, especially for boxes and other wearing parts of machinery. In appearance it resembles very much the metal called Parson's white brass. It can be melted in a common iron ladle, and will take a very good polish.—D. P. D., of N. Y.

CISTERN.—Let W. H. W. put two ounces of permanganate of potassa in his cistern. It will render the foulest waters sweet and pure.—B. F. D., of Neb.

COIL IN BOILER.—I have used the same coil as M. S. M., query 27, Sept. 30, and always had trouble until I placed the check valve between the pump and the coil, since when the coil has always had water.—G. A. Y., of N. Y.

O. S. M., of Va., says: I believe that in the manufacture of white lead, carbonic acid gas is generated, and that the inhalation of this is one of the causes of injury to the health of the workmen employed in its production. Could not this gas be gotten rid of by taking advantage of its weight, and boring holes in the floor to allow it to escape? Answer. Undoubtedly carbonic acid gas would run through holes in the floor of an apartment in which it was generated freely, but it is not carbonic acid that injures workmen in making white lead. It is the absorption of the lead into the system that does the mischief.

M. H. B., of Mass.—The friction of water in a pipe only one-half inch in diameter, and 800 feet long, would be very great, and as you say the water has to be lifted 23 feet, we do not think an atmospheric pump would answer the purpose. A powerful force pump at the lower end of the pipe would probably succeed measurably, but the pipe is of too small diameter for its length. To get a satisfactory delivery, it ought to be one inch in diameter at the least.

J. H. M., of Mo.—The specimens of iron ores sent have every appearance of being valuable for making steel. We advise you to have them subjected to critical examination and assay which will definitely determine their value. You had better get Professor Draper, 429 Lexington avenue, N. Y., or some other competent chemist to make an analysis for you.

H. A. B., of Ill.—We cannot point out your difficulty without knowing the exact method of procedure you adopt. We judge you melt your lead first and then add the tin. Melt the tin first and sprinkle its surface with a little powdered sal ammoniac, then add the lead, and we think you will succeed.

R. A. P., of Mass.—You will find a complete series of articles on beet sugar making, with illustrations, in Vol. XX. of the *SCIENTIFIC AMERICAN*.

H. H. V. L., of N. Y.—You can use melted lead for drawing the temper of the small steel articles you refer to.

S. & S., of Miss.—The internal pressure in the bottom of the shell of a steam boiler is not less than on the top.

Declined.

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

AMERICAN INSTITUTE FAIR.—G. F. D.

BOILER EXPLOSIONS.—D. E. H.—F. L.—J. C.

CANAL BOATS.—S. H.

MARINE GOVERNORS.—T. S.

RAILWAY BRAKES.—W. L.

TENSILE STRENGTH OF IRON.—M. D. C.

THE EARTH'S MOTION.—J. B.

THE MODALITY OF THOUGHT.—A. S. G.

VICES.—W. J. W.

ANSWERS TO CORRESPONDENTS.—F. F. P.—J. A.—M. M.

QUERIES.—A. L. S.—C. C. C.—F. D.—S. E. J.

NEW BOOKS AND PUBLICATIONS.

THE COACH MAKER'S INTERNATIONAL JOURNAL. Edited and published by Mr. I. D. Ware, 411 Chestnut street, Philadelphia, Pa.

This No. of the Journal commences its seventh volume with a new suit of type throughout, and makes a decidedly elegant appearance. It is one of the best of the special trade publications, and has our best wishes for its future success.

CAPTAIN ALSTEN'S SEAMANSHIP. New Edition. Revised and enlarged by Commander R. H. Harris, R. N. With a Treatise on Nautical Surveying by Staff-Commander May, F.R.G.S. Also, Instructions for Officers of the Merchant Service, by W. H. Rosser. With Two Hundred Illustrations. New York: Wiley & Son.

To any who wish to become learned in nautical lore, this book will prove just the help requisite for the purpose. To those who intend to follow the profession of a seaman, it would seem to be a very valuable work, in fact, a complete catechism of seamanship, including even the small but important particulars which are essential to complete accomplishment in any profession, but the lack of which in a seaman immediately stamps him as a "lubber." The revision of the work has adapted it to modern improvements in the build and rig of vessels; and, though the work is written with special reference to English ships, it cannot fail to be useful to American seamen.

THE CARRIAGE PAINTER'S ILLUSTRATED MANUAL: Containing a Treatise on the Art, Science, and Mystery of Coach, Carriage, and Car Painting. Including the Improvements in Fine Gilding, Bronzing, Staining, Varnishing, Polishing, Copying, Lettering, Scrolling, and Ornamenting. By F. B. Gardner. 16mo. Cloth. Price \$1. New York: S. R. Wells, Publisher.

The character of this work being sufficiently set forth in its title, as above, we have only to add that its practical nature must render it a very useful treatise to painters in general, but more especially to the particular class of painters which the title indicates.

APPLICATIONS FOR EXTENSION OF PATENTS.

MOWING MACHINE.—Silas E. Jackson and Morgan P. Jackson, Boonville N. Y., have petitioned for an extension of the above patent. Day of hearing, December 13, 1871.

LOCOMOTIVE FURNACE.—G. S. Griggs, deceased.—An application has been made for an extension of the above patent. Day of hearing, November 29, 1871.

LOCOMOTIVE ENGINE WHEELS.—G. S. Griggs, deceased.—An application has been made for an extension of the above patent. Day of hearing, December 13, 1871.

INDIA RUBBER DOOR MAT.—Edwin M. Chaffee, Providence, R. I., has petitioned for an extension of the above patent. Day of hearing, January 31, 1872.

SEEDING MACHINE.—William Coggeshall and Bennet B. Warner, Massillon, Ohio, have petitioned for an extension of the above patent. Day of hearing, December 13, 1871.

MACHINE FOR ROLLING CORNICES.—Asa Johnson, New York city, has petitioned for an extension of the above patent. Day of hearing, December 6, 1871.

METHOD OF GOVERNING THE CUT OF CIRCULAR SAWING MACHINERY.—A. C. Martin, Cincinnati, Ohio, and William H. S. Ewell, of same place, administrator of M. M. Wombough, deceased, have petitioned for an extension of the above patent. Day of hearing, December 6, 1871.

REAPER AND MOWER.—Thomas I. Stealey, Middletown, West Virginia has petitioned for an extension of the above patent. Day of hearing, November 29, 1871.

BORING MACHINE.—Lafayette Stevens, Elmira, N. Y., has petitioned for an extension of the above patent. Day of hearing, November 29, 1871.

ELECTRO MAGNETIC SPEED GOVERNORS.—George M. Phelps, Brooklyn N. Y., has petitioned for an extension of the above patent. Day of hearing, December 20, 1871.

Value of Extended Patents.

Did patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures to the benefit of the inventor, the assignees under the first term having no rights under the extension, except by special agreement. The Government fee for an extension is \$100, and it is necessary that good professional service be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing

MUNN & CO., 37 Park Row

Inventions Patented in England by Americans.

September 12 to September 16, 1871, inclusive.

[Compiled from the Commissioners of Patents' Journal.]

BRAKE.—G. Westinghouse, Jr. (of Pittsburgh, Pa.), London, England.
RUBBER COATING.—G. T. Chapman (of New York city), London, England.
COTTON, ETC., PRESS.—A. Baldwin, New York city.
DYEING FABRICS.—T. Sampson (of Providence, R. I.), Birmingham, Eng.
ELECTRO-MAGNETIC ENGINE.—E. Gassett, Boston, Mass.
ELECTRO MOTOR.—S. Jones, E. D. Lawrence, New York city.
LAWN MOWER.—G. L. Chadborn, T. Coldwell, Newburg.
SPINNING MACHINE.—S. M., H. M. Williams, D. A. Douglass, Coldwater, Mich.
STUFFING BOX AND PACKING.—E. W. Brown, Boston, Mass.
TELEGRAPH.—G. L. Anders, Boston, and E. B. Welch, Cambridge, Mass.

Foreign Patents.

The population of Great Britain is 31,000,000; of France, 37,000,000 Belgium, 5,000,000; Austria, 36,000,000; Prussia, 40,000,000; and Russia, 70,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. A large share of all the patents secured in foreign countries by Americans are obtained through our Agency. Address MUNN & Co., 37 Park Row, New York. Circulars with full information on foreign patents, furnished free.

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 40,000 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?

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 of 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 for 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 here 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 or 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,

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