

MUNN & CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank-bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York.

The revised Patent Law, enacted by Congress on the 2d of March, 1881, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the Government fee required on filing an application for a patent is reduced from \$30 to \$15. Other changes in the fees are also made as follows:—

- On filing each caveat.....\$10
On filing each application for a Patent, except for a design.....\$15
On issuing each original Patent.....\$20
On appeal to Commissioner of Patents.....\$20
On application for Re-issue.....\$30
On application for Extension of Patent.....\$50
On granting the Extension.....\$50
On filing a Disclaimer.....\$10
On filing application for Design, three and a half years.....\$10
On filing application for Design, seven years.....\$15
On filing application for design, fourteen years.....\$30

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (but in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen years, the business of procuring Patents for new inventions, in the United States and all foreign countries has been conducted, by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the inventors throughout the country, we would state that we have acted as agents for at least TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees at home and abroad. Thousands of inventors for whom we have taken out patents have addressed to us most flattering testimonials for the services we have rendered them, and the wealth which has inured to the inventors whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in our extensive offices, and we are prepared to attend to patent business of kinds in the quickest time and on the most liberal terms.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted, are invited to correspond with us on the subject, giving a brief history of the case, inclosing the official letters, &c.

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, under the new law, is \$10. A pamphlet of advice regarding applications for patents and caveats, printed in English and German, is furnished gratis on application by mail. Address MUNN & CO., No. 37 Park Row, New York.

FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York. Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Anyone can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between patentees and manufacturers are carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park Row, New York.

It would require many columns to detail all the ways in which inventors or patentees may be served at our offices. We cordially invite all who have anything to do with patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of patentees will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park Row, New York.

TO OUR READERS.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on design patents when two good drawings are all that are required to accompany the petition, specification and oath, except the Government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of Instructions to Inventors, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.



S. G., of N. Y.—The culture of fish has not been prosecuted, so far as we know, in any part of our country. There are rivers in New Jersey, New York and the Eastern States which once teemed with salmon, but in which none of this fish have been taken for thirty years. We believe that such rivers could again be stocked with this excellent fish.

W. B. R., of Mass.—You can make brass of different degrees in quality, according to the quantities of zinc and copper employed. About 65 per cent of zinc, to 35 of copper makes very good brass. White lead is a carbonate, and is formed by submitting thin sheet lead rolled in cones, to the vapor of acetic acid.

H. W., of Conn.—No mordant is required for dyeing silk and wool with aniline colors. You have simply to clean the silk or wool well, then handle it in a warm solution of aniline color dissolved in alcohol.

T. Y. B., of Pa.—If castings of good pig iron be heated to a low cherry red temperature, and then plunged in oil, they will become much tougher, and their strength will be increased about forty per cent.

J. R., of Ohio.—In preparing the juice of your sorghum for boiling, to obtain sugar, mix a small quantity of lime-water with it as soon as it is pressed from the cane. Maple sugar used with the juice of currants and berries makes a superior flavored wine to juice treated with cane sugar. If you have plenty of maple sugar we advise you to use it in preference to cane sugar in making your blackberry and elderberry wines.

J. B. L., of Ind.—Glass for windows, is colored by two different modes. The beautiful stained glass used in cathedrals, is made by fusing coloring agents with it. Painted glass for windows is produced by mixing pigments with a clear varnish—such as is made with Canadian balsam. Very little colored glass should be employed for the windows of churches, or other buildings; as it obstructs the passage of pure white light. We should advise you to get a bell of pure bell-metal (copper and tin), in preference to one of any other alloy.

H. A. W., of Vt.—The bill which was introduced last year into the Canadian legislature, containing the provision for permitting American citizens to secure patents in Canada, did not pass. Several illustrated works on stair-building have been published. You should examine them for your own satisfaction; before deciding which to purchase.

T. M., of R. I.—The natives of Madagascar used just such a bellows in 1838, as the one you propose; you will perceive then that it is not new.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Aug. 12, to Wednesday, August 19, 1883:—

- E. C., of N. Y., \$164; J. W. R., of Conn., \$16; N. T., of Ohio, \$16; J. T. C., of Iowa, \$15; L. K., of N. Y., \$16; A. M. B., of Mich., \$15; J. J. K., of Ill., \$25; C. F. B., of Conn., \$12; W. P. C., of Cal., \$20; H. S. W., of Mich., \$25; E. S. S., of Sweden \$20; W. R., of N. Y., \$15; T. B., of Ohio, \$15; T. J. V., of Conn., \$15; A. H., of Ill., \$26; R. & B. of Ill., \$25; S. W., of N. Y., \$30; O. P. H., of Mass., \$41; W. H. J., of — \$75; S. & G., of C. W., \$506; D. J. S., of N. Y., \$16; D. S. E., of Mass., \$20; H. K., of N. Y., \$45; J. D. P., of N. J., \$20; J. D., of N. J., \$45; R. B., of N. Y., \$45; D. C., of N. Y., \$30; N. H., of N. Y., \$20; V. G., of N. Y., \$16; D. C., of N. Y., \$30; J. W. T., of Vt., \$20; J. S. T., of Cal., \$41; M. B. W., of Conn., \$16; S. W. N., of N. Y., \$25; G. W. L., of Ohio, \$15; D. C. M., of N. T., \$20; C. E. M., of Vt., \$15; J. B., of Ohio, \$16; G. F. C., of Mass., \$15; N. C. S., of Conn., \$25; A. A. S., of Mich., \$25; B. & C., of R. I., \$73; J. T., of W's., \$20; C. E. S., of Conn., \$20; L. S., of N. Y., \$16; N. F. C., of Wis., \$20; T. W., of Mass., \$20; O. & F., of N. Y., \$16; A. & W., of N. Y., \$20; W. S. W., of N. Y., \$20; G. H. S., of Mass., \$20; H. D. W., of Mass., \$20; J. B., of N. Y., \$20; J. M. M., of Mass., \$25; A. L. F., of Pa., \$55; G. P., of N. Y., \$64; N. S., of Ind., \$20; J. D. B., of Vt., \$20; A. B., of N. Y., \$20; R. L., of N. Y., \$16; J. D. W. W., of N. Y., \$20; C. D. B., of Mich., \$20; J. P., of N. Y., \$145; L. A. J., of Cal., \$20; M. E., of Ill., \$20.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, August 12, to Wednesday, August 19, 1883:—C. F. B., of Conn.; J. W. McL., of Ohio; A. A. S., of Mich.; J. J. K., of Ill.; N. C. S., of Conn.; B. & C., of Mo.; S. P. La D., of Iowa; W. W. T., of Wis.; H. W., of Pa.; A. H., of Ill.; S. W. N., of N. Y.; J. L. K., of N. J.; B. & C., of R. I. (3 cases); S. W., of N. Y.; H. B., of Pa.

RATES OF ADVERTISING.

Twenty-five Cents per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns, and, as heretofore, the publishers reserve to themselves the right to reject any advertisement they may deem objectionable.

THE PRACTICAL BOLT AND NUT-MAKERS.—WANTED.—A steady, reliable man who has had practical experience in making pressed bolts and nuts. A good situation, with prospect of advancement, will be assured. Address, stating terms and full particulars, B. D. H., Box 447, Pittsburgh, Pa.

THE PRACTICAL DRAUGHTSMAN'S BOOK OF INDUSTRIAL DESIGN. Just published and now ready for delivery. The Practical Draughtsman's Book of Industrial Design, and Machinist's and Engineer's Drawing Companion; forming a complete course of Mechanical Engineering and Architectural Drawing. From the French of M. Armengaud the elder, Professor of Design in the Conservatoire of Arts and Industry, Paris, and M. Armengaud the younger, an X.; Continuation of the Study of Projection.—Use of sections—details of machinery; Plate XI.; Simple applications—splines shafts, couplings, wooden patterns; Plate XII.; Method of constructing a wooden model or pattern of a coupling, Elementary applications—Rails and chairs for railways; Plate XIII.; Rules and Practical Data: Strength of material, Resistance to compression or crushing force; Friction of surfaces in contact. Resistance to flexure, Resistance to torsion.

Among the contents are—Linear Drawings, Definitions and Problems; Plate I.; Applications, Designs for Inlaid Pavements, Ceilings and Balconies; Plate II.; Sweeps, Sections and Mouldings; Plate III.; Elementary Gothic Forms and Rosettes; Plate IV.; Ovals, Ellipses, Parabolas and Volutes; Plate V.; Rules and Practical Data; Study of Projections: Elementary Principles; Plate VI. Or Prisms and other Solids; Plate VII.; Rules and Practical Data; On Coloring Sections with Applications—Conventional colors, Composition and nature of Colors; Plate VIII.; Continuation of the Study of Projection.—Use of sections—details of machinery; Plate XI.; Simple applications—splines shafts, couplings, wooden patterns; Plate XII.; Method of constructing a wooden model or pattern of a coupling, Elementary applications—Rails and chairs for railways; Plate XIII.; Rules and Practical Data: Strength of material, Resistance to compression or crushing force; Friction of surfaces in contact. Resistance to flexure, Resistance to torsion.

THE INTERSECTION AND DEVELOPMENT OF SURFACES, WITH APPLICATIONS.—The Intersection of Cylinders and Cones; Plate XIV.—The Delineation and Development of Helices, Screws and Serpentine; Plate XV.—Application of the helix—the construction of a staircase; Plate XVI.—The intersection of surfaces—applications to stop-cocks; Plate XVII.; Rules and Practical Data, Steam Unity of heat, Heating surfaces, Calculation of the dimensions of boilers, Dimensions of fire grates, Chimneys, Safety-valves.

THE STUDY AND CONSTRUCTION OF TOOTHED GEAR.—Involute, cycloid and epicycloid; Plates XVIII. and XIX.; Involute; Fig. 1, Plate XVIII.; Cycloid; Fig. 2, Plate XVIII.; External epicycloid described by a circle rolling on it; Fig. 3; Plate XVIII.; Internal epicycloid; Fig. 2, Plate XIX.; Delineation of a rack and pinion in gear; Fig. 4, Plate XVIII.; Gearing of a worm with a worm-wheel; Fig. 5 and 6, Plate XVIII.; Cylindrical or Spur Gearing; Plate XIX.; Practical delineation of a couple of spur-wheels; Plate XX.; The Delineation and Construction of Wooden Patterns for Toothed Wheels; Plate XXI.; Rules and Practical Data: Toothed gearing, Angular and circumferential velocity of wheels, Dimensions of gearing, Thickness of the teeth, Pitch of the teeth, Dimensions of the web, Number and dimensions of the beams, Wooden patterns.

CONTINUATION OF THE STUDY OF TOOTHED GEAR.—Design for a pair of bevel-wheels in gear; Plate XXII. Construction of wooden pattern for a pair of bevel-wheels; Plate XXIII.; Involute and Helix' Teeth; Plate XXIV.; Continuation for obtaining Differential Movements, The delineation of eccentrics and cams; Plate XXV.; Rules and Practical Data: Mechanical work of effect, The simple machines, Centre of gravity, On estimating the power of prime movers, Calculation for the brake, The fall of bodies, Momentum, Central forces.

ELEMENTARY PRINCIPLES OF SHADOWS.—Shadows of Prisms, Pyramids and Cylinders; Plate XXVI.; Principles of Shadowing; Plate XXVII.; The Study of Shadows; Plate XXVIII.; Shadows; Plate XXIX. and XXX.; Rules and Practical Data: Pumps, Hydrostatic principles, Forcing pumps; Lifting and forcing pumps, The hydrostatic press, Hydrostatic calculations and data—discharge of water through different orifices, Gaging of a water-course of uniform section and fall, Velocity of the bottom of water-courses, Calculation of the discharge of water through rectangular orifices of narrow edges, Calculation of the discharge of water from an overshoot outlet, To determine the width of an overshoot outlet, To determine the depth of the outlet, Outlet with a spout or duct.

APPLICATION OF SHADOWS TO TOOTHED GEAR: Plate XXX.—Application of Shadows to Screws; Plate XXXI.; Application of Shadows to a Boiler and its Furnace; Plate XXXII.; Shadowing in Black—Shadowing in Colors; Plate XXXIII.

THE CUTTING AND SHAPING OF MASONRY: Plate XXXIV.—Rules and Practical Data, Hydraulic motors, Undershot water wheels, whiplaue floats and circular channel, Width, Diameter, Velocity, Number and capacity of the buckets, Useful effect of the water wheel, Overshot water wheels, Water wheels with radial floats, Water wheel with curved buckets, Turbines, Remarks on Machine Tools.

THE STUDY OF SHADOWS AND SKETCHING.—Various applications and combinations: The Sketching of Machinery; Plate XXXV. and XXXVI.; Drilling Machine; Motive Machines; Water wheels, Construction and setting-up of water wheels, Delineation of water wheels, Design for a water wheel, Sketch of a water wheel; Overshot Water Wheels; Water Pumps; Plate XXXVII.; Steam Motors; High-pressure expansive engines; Engines XXXVIII., XXXIX. and XL.; The Study of Construction; Moments of the Distribution and Expansion Valves; Rules and Practical Data, Steam engines: low-pressure condensing engines without expansion valve, Diameter of piston, Velocities, Steam pipes and passages, Air-pump and condenser, Cold-water and feed-pumps, High-pressure expansive engines, Medium pressure condensing and expansive steam engine, Conical pendulum or centrifugal governor.

OBLIQUE PROJECTIONS.—Application of rules to the delineation of an oscillating cylinder; Plate XLI.

PARALLEL PERSPECTIVE.—Principles and applications; Plate XLII. TRUE PERSPECTIVE.—Elementary principles; Plate XLIII., Applications—Hour mill driven by bells; Plate XLIV. and XLV., Description of the mill; Representation of the mill in perspective, Drawing of improvements in flour mills, Scheele's mill, Mullin's ring millstone, Barnett's millstone, Hastie's arrangement for driving mills, Currie's improvements in millstones; Rules and Practical Data, Work performed by various machines, Flour mills, Saw mills, Veneer-sawing machines, Circular saws.

EXAMPLES OF FINISHED DRAWINGS OF MACHINERY.—Plate A, balance scale; Plate B, the perfect engineer's simple machine; Plate C, D, express locomotive engine; Plate E, wood planing machine; Plate G, washing machine for piece goods; Plate H, power loom; Plate I, duplex steam boiler; Plate J, direct-acting marine engines.

DRAWING INSTRUMENTS.—The above or any other of my Practical and Scientific publications sent by mail free of postage. Every reader of the SCIENTIFIC AMERICAN is invited to send for a catalogue, and to order books to be sent free of postage. HENRY CAREY BAIRD, Publisher of Practical and Scientific Books, 406 Walnut street, Philadelphia. 1

SAVING OF FUEL TO PARTIES USING STEAM.—DAMPER REGULATORS.—Guaranteed to effect a great saving in fuel and give the most perfect regularity of power. For sale by the subscribers, who have established their exclusive right to manufacture damper regulators, using diaphragms or flexible vessels of any kind. CLARK'S PATENT STEAM AND FIRE REGULATOR COMPANY, No. 5 Park Place, New York. 16 28°

RESPLITTING UPRIGHT SAW MILL FOR SALE.—Latest improvement of the Crosby Patent. Price \$250. H. D. CRANE & Co., 363 W. 23rd Street. 9 2

PATENT SAFETY HOOK.—STATE RIGHTS FOR sale of Braggle's Improved Safety Hook. Operates without the use of a spring, simple and cheap; suitable for carrying, saving, carrying, or water chain hook. For terms, address H. BEAGLE, Jr., 410 North Fifth Street, Philadelphia, Pa. 18

THE "WASHINGTON" AERIAL NAVIGATION COMPANY.—Wanted to organize an Aerial Navigation Company, to run around the Globe in an easterly direction, between the latitude of 30° and 60° north; delivering and receiving mails at the chief cut of each State on the line of travel. Capital stock \$1,000,000; shares \$100 each. We will commence operations with a capital of \$100,000, and continue in business during the continuance of my patent, for the use of which I will receive 20 per cent of the entire profit. Gentlemen desiring to engage in this grand enterprise can purchase shares by sending me their addresses, and one-tenth of the price of all the shares they may wish to purchase. I will officiate as President of the Company until 100 shares have been purchased; I will then proceed to New York, and call a meeting of shareholders, and have a competent set of officers elected. All company money received by me will be entered in a book kept for the purpose, and published, from time to time, in the SCIENTIFIC AMERICAN. Persons wishing to build an Aerial machine for pleasure can obtain a license by the year, at 5 cents per cubic yard, by addressing ARTHUR KINSELL, Cascade, Washington Territory. [See engraving and description in another column.] 1

J. IVES, BRISTOL, CONN., MANUFACTURES all kinds of machine and fancy screws. Address as above. 6 10°

OFFICE OF THE SIGNAL OFFICER,

WASHINGTON, D. C. Aug. 8, 1863. Sealed Proposals will be received at this office until SATURDAY, August 29, 1863, at 4 o'clock, P. M., for furnishing for the Signal Department the following articles:—

- 250 Two hundred and fifty sets Signal Equipments. 30 Thirty barrels of Gunpowder. 100 One hundred bales Wicking. 200 Two hundred Telescope Holders. 25 Twenty-five gross Wind Matches. 20 Twenty pounds Linen Thread. 2 Two gross Needles. 10 Ten Tap Boers.

The first delivery to be made about the 15th of September, 1863, or as soon thereafter as Government may direct. The full name and Post-Office address of the bidder must appear in the proposal.

If a bid is made in the name of a firm, the names of all the parties must appear, or the bid will be considered as the individual proposal of the party signing it.

Proposals from disloyal parties, or where the bidder is not present to respond to his bid, will not be considered.

Proposals must be addressed to "The Signal Officer of the Army," Washington, D. C., and should be plainly indorsed, "Proposals for Field Signal Equipments."

The responsibility of the guarantors must be shown by the official certificate of the clerk of the nearest district court or of the United States District Attorney.

The ability of the bidder to fill the contract, should it be awarded to him, must be guaranteed by two responsible persons, whose signatures are to be appended to the guarantee, and said guarantee must accompany the bid.

Bonds in sums of double the amount involved in the contracts, signed by the contractor and both of his guarantors, will be required of the successful bidder or bidders, upon signing the contract.

FORM OF GUARANTEE. We, of the county of _____ and State of _____, do hereby guarantee that _____ is able to fulfill the contract in accordance with the terms of his proposition, and that should his proposition be accepted he will at once enter into a contract in accordance therewith.

Should the contract be awarded to him we are prepared to become his securities. (To this guarantee must be appended the official certificate above mentioned.)

The right is reserved to reject all proposals, if the prices are deemed too high, or if, for any cause, it is not deemed for the public interest to accept them.

Models will be on exhibition at the office of the Signal Officer for twenty (20) days from date.

PROPOSALS FOR CONSTRUCTING A BRICK TUNNEL

under Lake Michigan, two miles long, for the City of Chicago. OFFICE OF THE BOARD OF PUBLIC WORKS, CHICAGO, August 13th, 1863.

Sealed Proposals will be received at this office till Wednesday, September 9th, at 11 o'clock, a. m., at which time the Board will open the same, for doing all the work and furnishing all the materials required for the construction of a brick tunnel, five feet clear diameter, and extending from the present pumping works of the city, two miles out under the bed of Lake Michigan, and through what numerous borings invariably show to be a stiff blue clay soil, together with sand and lake shafts, and protecting cribs, in accordance with the plans and specifications for the doing of said work, to be found on file in the office of this Board on and after the 19th inst.

The Board would prefer to let the entire work to one contractor or company, but will receive separate proposals for the tunnel proper and land shaft, for the protecting cribs, and for the cast-iron cylinders for lake shafts.

The Board reserves the right to reject any or all bids, and to accept any one bid complying with the conditions of this advertisement.

The bids must be sealed, and must be accompanied with a bond of the penal amount of \$200, blanks for which will accompany the specifications guaranteeing the execution of a contract in accordance with the bid, in case the bid is accepted.

Proposals must be directed to the Board of Public Works, and indorsed "Proposals for Lake Tunnel."

Satisfactory security for the faithful performance of the work will be required of the parties whose bids may be accepted.

J. G. GINDELE, FRED LETZ, F. C. SHERMAN, Board of Public Works.

BLUES AND CARMINES OF INDIGO.—JUST PUBLISHED.

Blues and Carmines of Indigo. A Practical Treatise on the Fabrication of every Commercial Product derived from Indigo. By Felicien Capron de Dole. Translated from the French, with extensive and important additions, by Prof. H. Dussauce. In one volume, 12mo. Price \$2.50.

CONTENTS.—History of Indigo; Culture; Fabrication. Commercial varieties of Indigo. Physical Properties of Indigo; Composition. Chemical properties; Indigotine. Action of Alkalies and substances void of Oxygen on Blue Indigo. White Indigotine. Action of Sulphuric Acid on Indigo. Sulpho and hypo-sulpho-Indigotinic Acids; Solubility of Indigo; Carmine of Indigo. Description of the necessary Tools for a large Fabrication of Carmine of Indigo. Sulphuric Dissolution of Indigo; Saturation; Carmine of Indigo. Cupreous or Bronze Blues; Blues in Stones; Pastils and Streaked Pastils. Celestian Blues, also called New Blues and Soluble Blues. Belard or Saxony Blues. Blues in Balls. Liquid Blues; Family Blues. Action of Nitric Acid on Indigo. Dyeing with Indigo Vat. Assay of the Colors; Assay of the Blues. Commercial Assays of Indigo; Process by Immediate Analysis. Commercial Assays of Indigo; Estimation of Water and Ashes. Commercial Assays of Indigo; Estimation by the Vat. Commercial Assays of Indigo; Assay by the Sulphuric Dissolution of Indigo. Commercial Assays of Indigo; Assay by Hypochlorite of Lime. Observations on the preceding Experiments.

A Complete Treatise on the Art of Dyeing Cotton and Wool, as Practiced in Paris, Rouen, Mulhausen and Germainy. From the French of M. Louis Ulrich, a Practical Dyer in the principal Manufactories of Paris, Rouen, Mulhausen, &c.; to which are added the most important receipts for Dyeing Wool, as practiced in the Manufacture Impériale des Gobelines, Paris. By Professor H. Dussauce. 12mo. \$3.

Treatise on the Coloring Matters derived from Coal Tar; their Practical Application in Dyeing Cotton, Wool and Silk; the Principles of the Art of Dyeing and of the Distillation of Coal Tar; with a Description of the most important New Dyes now in use. By Professor H. Dussauce, Chemist. 12mo. \$2.50.

The above, or any other of my Practical and Scientific Books, sent free of postage to any part of the world; every reader of the SCIENTIFIC AMERICAN is particularly invited to send for a catalogue, which will be forwarded free of postage. HENRY CAREY BAIRD, Publisher of Practical and Scientific Books, 106 Walnut street, Philadelphia.

TO STEAMSHIP AND STEAMBOAT OWNERS AND BUILDERS.

For sale—Two Low-pressure Beam Engines—one 11-foot stroke and 72-inch bore cylinder, and the other a double cylinder engine, formerly used in the steamer "Herkules," on Lake Erie. The outside cylinder is 81-inch bore, and the inside cylinder 36-inch bore and 12-foot stroke, and was, when in use, remarkable for its great economy in fuel. Both engines are in good order. For further particulars or information address E. B. WARD, Detroit, Michigan.

PLATINA PASTE STOPPING IS THE BEST FILLING

for permanently restoring to use decayed teeth. Any person can apply it with facility; it becomes a compact body (hard as steel) in one hour, and will not change color or decompose in the mouth—sample boxes containing sufficient to fill 10 to 15 teeth mailed for \$1. Address DR. KEYSOR, Box 935, P. O., Montreal, C. E.

TO BRIDGE BUILDERS.—THE FRANKLIN AND

Allegheny Bridge Company will receive proposals for rebuilding the Superstructure of their Bridge—four spans, 180 feet each—on the 10th September. Bidders will furnish plans and specifications. Wire suspension preferred. C. HEYDRICK, Secretary, Franklin, Pa.

TO INVENTORS WHO HAVE INVENTIONS

of practical value, either patented or not, and who have not sufficient capital to bring the same out, by addressing the subscriber may be assisted in so doing, or the right to manufacture be purchased. Describe the article in full, with simple drawings, if convenient, mentioning advantages, &c. Address, by mail, D. B. WHITPLE, New Haven, Conn.

A VALUABLE WORK FOR INVENTORS, PATENTEES AND MANUFACTURERS.

The publishers of the SCIENTIFIC AMERICAN have just prepared, with much care, a pamphlet of information about Patents and the Patent Laws, which ought to be in the hands of every inventor and patentee, and also of manufacturers who use patented inventions. The character of this useful work will be better understood after reading the following synopsis of its contents:—

The complete Patent Law Amendment Act of 1861—Practical Instructions to Inventors, how to obtain Letters Patent, also about Models—Designs—Caveats—Trade-marks—Assignments—Revenue Tax—Extensions—Interferences—Infringements—Appeals—Re-issues of Defective Patents—Validity of Patents—Abandonment of Inventions—Best Mode of Introducing them—Importance of the Specification—Who are entitled to Patents—What will prevent the Granting of a Patent—Patents in Canada and European Patents—Schedule of Patent Fees; also a variety of miscellaneous items on patent law questions.

It has been the design of the publishers to not only furnish, in convenient form for preservation, a synopsis of the PATENT LAW and PRACTICE, but also to answer a great variety of questions which have been put to them from time to time during their practice of upwards of twenty years, which replies are not accessible in any other form. The publishers will promptly forward the pamphlet by mail, on receipt of six cents in postage stamps.

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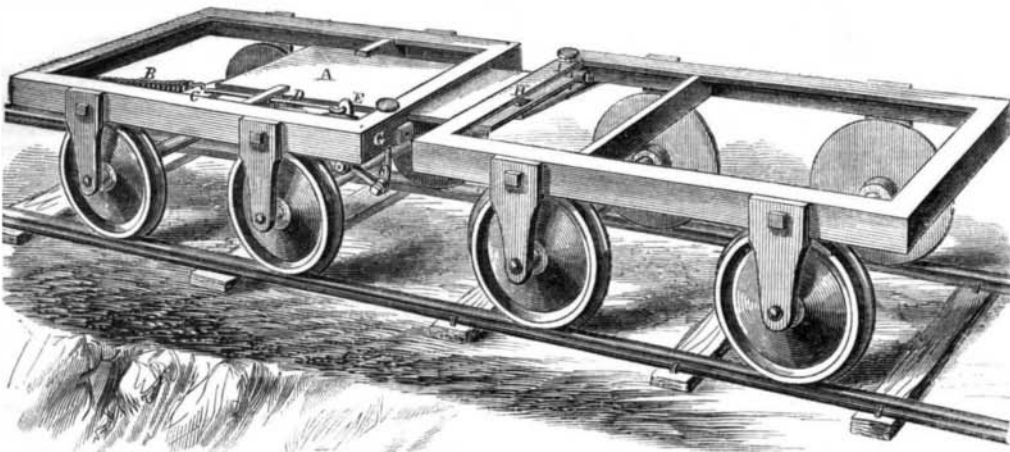
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every one to understand the working of this apparatus:—The floors of the cars, and all other parts, are removed, in order to show the invention more clearly. The plate A slides in a slot in the end of the car frame and between guides set in the same; it has a spiral spring, B, attached to the back of it. This spring is fastened to an arm C, that is jointed to one side of the frame; in the arm the link D is hooked, the other end proceeding to a right-angled lever, E, vibrating on a pin attached to a hanger; to the other end of this lever, the treadle-rod F is jointed, and proceeds thence upward through the timber G. In the plate A is a square hole, which takes a catch, H, in the end of the platform of the adjoining car; the edge of this spring being bevelled off, so that the

card gives a certain amount of gloss; but the texture of the paper, and the long washing and soaking of the prints, makes the surface even, and prevents the picture from being seen in all its perfection of detail. To render them smooth, it is customary after being mounted on card board, to roll them between polished steel rollers, or between polished steel plates and rollers. Many very excellent machines have been made for this purpose; but we now desire to call attention to a press which is being manufactured and sold very extensively by the Messrs. E. & H. T.

the roller having been adjusted to the proper pressure by experiment, the cards are inserted with the face towards the small roller. Thus as the steel roller is pulled forward over the picture by its handle, the card vibrates with it, remaining at all times tangential to the large cylinder, and the actual operation of the machine is similar to the rolling of a garden roller over the grass, the center being continually carried forward. It is needless to comment on the simplicity of this little machine; its rapid sale testifies to its excellence. These machines are manufactured exclusively by Messrs. E. & H. T. Anthony, 501 Broadway, New York, to whom all orders must be addressed.



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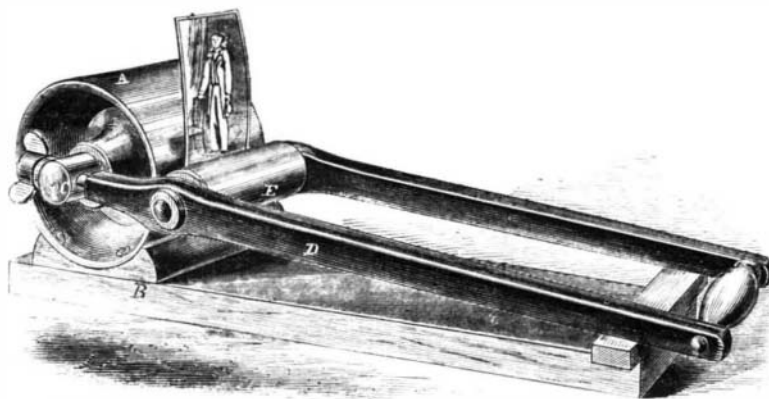
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