2,682.—W. H. Towers (assignor to W. S. Bard), of New York City, for Improved Broom:

I claim embodying and securing in the central part of the broom below the handle, a curved, rigid strip or plate, C, and divergent body or bodies of Tampico grass, South American bass, or other like material substantially in the manner and for the purpose set forth.

2,683.—Ferdinand Wüterich (assignor to himself and J. M. Hathaway), of New York City, for Improvement in Machines for Making Cigars:

I claim, first, The pointing rollers, P P P, for pointing a cigar, by pressing and rolling upon the head or point of it while the wrapper is being rolled on, as described.

Second, Making pointing roller, P, to open, for the greater convenience of putting in the bunch or filling and taking out the cigar after it is completed, as described.

Third, A movable pointer to press upon the head or point of a cigar, and form it while the wrapper is being rolled on, and the cigar is being made, as described.

Fourth, Cutting the wrapper after it is rolled upon the cigar up to, or upon, the point by means of shear knives, T and W, placed at or near the point of the cigar, as set forth.

Fifth, Cutting the wrapper the required shape and length after it is rolled upon and near to the point of the cigar, by means of die cutters Y and X, when placed in proper position, as described.

Sixth, The hinged pattern or shape, Z, to be used as a pattern to shape the wrappers to form the point of the cigar, as described.

Seventh, Connecting the cylinders or rollers, G and G, by pins or dowels as described.

Eighth, Placing roller or rollers, N N, in the pocket of a cigar machine and holding them there by adjustable strip or strips, M, for holding the cigars while the pointer presses upon and finishes the point, as described.

DESIGN.

122.—Gardner Chilson, of Boston, Mass., for a Design for Parlor Stove.

Notes and Queries

C. C. B., of N. Y.—We know no reason why a smooth bore should not send a globular projectile as far as a rifle. As a cylindrical or conical projectile would be kept end foremost throughout its flight by the rotary motion imparted to it by the rifle, it would have a greater range than if fired from a smooth bore.

A. D., of Ind.—You will find all the information we possess respecting a position as engineer in the Navy, upon page 198, Vol. IV. (new series) SCIENTIFIC AMERICAN. The information then published was obtained from a former Engineer-in-chief of the Navy, and is therefore reliable.

E. M. B., and G. W. L., both of New York.—On another column you will find a notice of a work on drawing.

A. F. M., of New York.—B. H. Horn, No. 212 Broadway, has compound microscopes at $2.50 each. The object glass of these has a focal length of about one inch. The mounting is simple, but good enough. He has others with two additional object glasses at $3.50 and $4. They are sufficiently powerful for showing infusoria.

C. W., of Mass.—Fulminating mercury is probably the material which is put into the caps that are used in the Prussian rifles; at all events this substance would be suitable.

O. D. B., of Pa., asks the following questions:—"A gets a machine patented. B buys one of the machines with a shop license. Now if B sells the machine to C, is there any law to prevent C's using it?" Ans.—C has no right to use the machine unless B also sold the shop license with it.

J. N. E., of Mass.—There is no illustrated paper published in this city called the "Building Guide."

J. G., N. J.—Aich's alloy is composed of copper, 60 parts, zinc 38.20 parts, and iron 1.80 parts. It is darker in color than common bran; it bends at a red heat, is ductile, takes a high polish, and can be worked with a hammer almost like wrought iron,

J. B. Z., of N. T.—Pewter is composed of tin 100 parts, antimony 8 parts, copper 4 parts; bismuth one part. Fuse the whole together in a crucible—the copper first, then the other metals. The cheapest kind of pewter is composed of tin 4 parts, lead one part. In an elaborate report of a French commission appointed several years since to examine into the character of alloys, it is stated that pewter containing more than one part of lead to five of tin is dangerous to use. A paste composed of borax, soda, and ground glass, will form a good glaze for your bricks. They should be first dipped into this paste, then dried slowly and afterward burned in the kilin

J. C., of Va.—Your suggestions in regard to rifles have been elaborately discussed, and many of them tried.

M. H. B., of Mo.—Benzole is manufactured by distilling naphtha at a temperature of from 176° to 194° Fah. It is frequently sold under the name of benzine, and is very useful for cleaning soiled gloves, silks, &c. It vaporizes at a low temperature and may be burned like common coal gas.

E. D. H., of C. W.—The gloss on shirt collars and bosoms is put on by friction with a hot iron. Use starch containing a small quantity of white wax or spermaceti, and the table upon which you perform the ironing should have a hard smooth surface. Clean pasteboard, of which calender rollers are made, is the best material you can use for covering the table.

M. C. D., of N. Y.—All the information which we possess concerning the Henry rifles was given with the illustration on page 44 of current volume of SCIENTIFIC AMERICAN. Many of our marksmen use bullets containing a small portion of tin. It is believed that they are not so liable to strip as those made of pure lead. You will find an article on American and English rifles on page 265, current volume.

H. C. S., of Mo.—The process of concentrating sweet milk is not a secret, but is secured by patent to Gail Borden, jr. The milk is concentrated in a vacuum pan, similar to saccharine fluid.

W. M. W., of Mass.—In order to secure attention to your theory of two forces to produce the motions of the planets, you must compare it with Sir Isaac Newton's calculations based on the theory of one force, and see which explains all the phenomena in the most satisfactory manner. We have recently received a long communication contending that all the inhabitants of the earth and other planets are living in the insides of the globes instead of upon the outsides.

B. M. of N. Y.—To enable us to give you proper advice respecting your ventilator, we require a sketch and description of the plan you desire to patent. If your model is ready you had better bring it to our office whenever you are in the city.

W. S. K., of N. Y.—Mr. Meigs, the contractor of the Valparaiso and Santiago R. R., has no office in this city, so far as we know. We presume his headquarters are at Valparaiso.

J. T. E., of C. W.—We are informed that Morrison's grammar and dictionary of the Chinese language are suitable for your purpose. Write to C. S. Francis & Co. of this city.

H. P., of Mo.—Kaolin is the most suitable substance from which to obtain aluminum, though labradorite is frequently used. The usual method is to decompose the chloride of aluminum with the chloride of soda. You will find a minute description of the process in Gregory's Chemistry, and other modern works. Two new processes are described on page 345, Vol. II. (new series) SCIENTIFIC AMERICAN

J. M., of Mich.—Byrne's Cyclopedia of Engineering has a pretty good description of the glyphographic process. We have used a good deal of india ink but never heard of any process for rendering it when very black, more fluid than the aqueous solution.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, Nov. 20, 1861:—

H. C. H., of Ill., $20; M. and M., of Ohio, $20; J. S., of N.Y., $20; T. L., of Conn., $28; M. C., of Me., $25; P. and C., of Conn., $25; J. J. M., of Conn., $25; W. B., of N. Y., $20; F. J. F., of Pa., $15; S. E. and P., of Wis., $20; C. and P., of Me., $15; G. H. S., of Iowa., $15; J. W. C., of Mass., $15; S. D. K., of N. Y., $15; L. and W. of N. Y., $25; A. B. H., of Conn., 40; A. M., of Ohio, 15; I. H. S., of R. I., $25; S. G. B., of Conn., $15; M. E. L., of N. Y. $25; J. S., of N. Y., $40; G. K. W., of N. Y., $25; R. S., of N. Y., $25; A. H., of Minn., $20; W. F., of Iowa, $45; J. A. DeB., of N, Y., $49; H. K., of Pa., $30; N. McC., of N. Y., $25; R. W., of Conn., $15; J. N., of Ind., $15; R. S., of N. Y., $35; M. W. W., of Ill., $25; C. M. S., of Conn., $15; G. K., of Pa., $25; N. B. J., of Mass., $10; C. and G. M. W., of N. Y., $100; E. and R., of N. Y., $15; R. H. S. of N. Y., $15; C. B. L., of Mass., $15; T. and E., of Pa., $15; d. J. S., of N. Y., $25; G. W. R., of Ind., $15; F. J., of N. B., $15; S. I. B., of N. J., $25; F. C. P., of N. Y., $25; T. J. B., of N. Y., $28; R. R., of N. Y., $40; H. & Son, of Ohio, $15; E. T., of Pa., $20; E. R. O., of Ohio, $15; J. K. A., of Ohio, $15; S. P. O., of Conn., $20; A. McG., of N. Y., $15; E. C., of Mass., $15; J. V. N., of N. J., $12; L. S. H., of Cal., $25; S. H., of Ind., $15; J. B., of Cal., $25; C. R. T., of Oregon, $20; W. B., of N. Y., $40; A. B., of N. Y., $40; J. H. F., of N. Y., $40; W. W., of Wis., $25; F. G. W., of Mass., $30; P. and S., of N. Y., $25.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Nov. 13, to Wednesday, Nov. 20, 1861:—

T. L., of Conn.; R. R., of N. Y.; J. A. D. B., of N. Y.; A. J. A., of Wis.; J. V. N., of N. J.; J. J. M., of Conn.; M. C., of Me.; P. and C. of Conn.; N. McC., of N. Y.; J. K. A., of Ohio; G. K. W., of N. Y.; L. S. H., of Cal.; G. K., of Pa.; J. B. R., of Conn.; P. N., of France; F. C. P., of N. Y.; W. B., of N. Y.; T. J. B., of N. J.; H. W. B., of N. J.; L. W. P., of Mass.; L. and W., of N. Y.; P. and S., of N. Y.; R. S., of ~~N. Y.~~; ~~W. W.~~, of ~~Wis.~~; ~~F. G. W.~~, of Mass.; M. E. L., of N. Y., S. J. B., of N. J.

New Books Received.

A MANUAL OF ELEMENTARY DRAWING.—By S. Edward Warren, C. E. Published by John Wiley 56 Walker street, New York.

This little work is designed for use in high schools, academies, engineering schools, &c., and for the self instruction of inventors, artizans, &c. It seems to be an excellent work.

THE HARBINGER OF HEALTH, Containing Medical Prescriptions for the Human Body and Mind. By Andrew Jackson Davis. Published by A. J. Davis & Co., 274 Canal street, New York. Price $1,00.

We observe some good extracts in the book from Mirabeau, Emerson, SCIENTIFIC AMERICAN, and other well-known authorities. The work is designed for popular circulation, but we confess that we have not much faith in such books. They usually contain a mixture of sense and nonsense as is the case with the work before us. We have no doubt of the fact that Mr. Davis is a man of talent, but it strikes us that he is out of his element as a medical adviser.

&c., made up and mailed to the Inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh-streets, Washington, by experienced and competent persons. Over 1,500 of these examinations were made last year through this Office, and as a measure of prudence and economy, we usually advise Inventors to have a preliminary examination made. Address MUNN & CO., No. 37 Park-row, New York.

How to Make an Application for a Patent.

Every applicant for a Patent must furnish a model of his invention. If susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the government fee by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft 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; 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 Examination of Inventions.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submitit to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the acts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

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 furnished gratis on application by mail. Address MUNN & CO., No. 37 Park-row, New York.

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.

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 our Agency.

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 Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park-row, New York, or either of our Branch Offices.

Assignments of Patents.

The assignment of Patents, and agreements between Patentees and manufacturers, 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 the Inventor or Patentee 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.

CRYSTAL ILLUMINATING COAL OIL.—THE TERM coal oil, kerosene oil, carbon oil, rock oil, petroleum, oil, &c., are names adopted by the different refiners throughout the country. In the variety of manufacturers, there are many who are working only to a limited extent, and selling the oil almost as it runs from the still, which prevents the product being always uniform. By running our oil into large tanks, and retaining it sufficiently long to have it suitable for use, we are enabled to warrant our Crystal Illuminating Coal Oil, as follows:—1st, perfectly white; 2d, perfectly sweet; 3d, non-explosive; 4th, equal in every respect to any sold; 5th, and most important, it is always uniform. For sale at lowest market rates, by
RAYNOLDS, DEVOE & PRATT.

RAYNOLDS, DEVOE & PRATT,
IMPORTERS AND MANUFACTURERS OF
PAINTS, OILS, VARNISHES AND COLORS,
Artists' and Painters' Materials.
NEW YORK. 22 10

THE GENESEE FARMER—ESTABLISHED IN 1831.—The farmer's own paper. The cheapest agricultural paper in the world. Only 50 cents a year. Now is the time to subscribe. Published for 30 years in one of the best wheat and fruit regions in America, with correspondents in nearly every State and in Canada, it contains information of great interest and importance to every farmer, gardener and fruit grower. No farmer can afford to be without it. It costs only 50 cents a year, and contains more agricultural and horticultural matter than most of the $2 weeklies.

Accurate market reports of the London, New York, Philadelphia, Rochester, Buffalo, Chicago, Cincinnati and Toronto markets are given in each number. All the leading foreign and American journals are received, and special pains are taken to give the latest and most reliable information in regard to the state of the crops at home and abroad.

A copy of the paper sent free to all who wish to examine it. Address, JOSEPH HARRIS, Publisher and Proprietor, Rochester, N. Y.

Agents wanted everywhere, to whom the most liberal offers are made. 22 3

TODD & RAFFERTY, ENGINEERS AND MACHINISTS, manufacturers of stationary and portable steam engines and boilers. Also, flax, hemp, tow, oakum and rope machinery, machinists' tools, mill gearing, shafting, &c. Iron and brass castings and general machinery merchants. Depot and store—No. 13 Dey street, New York, where a general supply of railroad and manufacturers' findings may be had. Works at Paterson, N. J. 22 3m

---

CENTRIFUGAL SUGAR MACHINES—MESSRS. ASpinwall & Woolsey's patent.—George B. Hartson, No. 111 East Forty-second street, continues to execute orders, and gives his personal attention to the erection of the above machines, and will also furnish plans and estimates for complete sugar refineries, with all the atest improvements. 22 6m*

WHAT EVERY FARMER, MECHANIC, AMATEUR and well-regulated household wants—one of Parr's Tool Chests, fitted up with a complete assortment of tools, such as saws, planes, hatchets, hammers, chisels, draw shaves, rules, files, augurs, &c. Will pay for itself in one year in saving of carpenter's bills.

Planters' size contains 92 tools, price.....$30 each.
Gentlemen's size contains 80 tools, price..... 20 each.
Youth's size contains 62 tools, price..... 13 each.
Boys' size contains 44 tools, price..... 8 each.

Made of the best cherry and ash exterior, French polished with brass trimmings and lifting handles, and drawers to contain every article. Superior tools sharpened and set ready for use. Packed in cases and shipped to any address on receipt of the price, by the manufacturer and inventor. Also, juvenile tool chests, suitable presents for the holidays, containing 15 tools, price $4 each; 10 tools, price $3 each; 8 tools, price $2 each. GEORGE PARR, Buffalo, New York.
22 tf

WANTED.—A MAN WHO PERFECTLY UNDERstands it, to work on a Variety Molding Machine. One familiar with cabinet work preferred. Apply to S. W. SMITH, 49 Ann street.
22 1*

---

75 CENTS A YEAR.—SAMPLE COPIES SENT FREE.—Mrs. Hankins's paper is the cheapest Fashion Pictorial and most perfect Family Journal in the world, uniting all the elegancies of refinement and beauty with the plain utilities of life. Address, M. GAUNTT, 49 Walker street, New York. Lady agents wanted. 1

TO BROOM MAKERS.—PERSONS WISHING TO PURchase Turned Basswood Broom Handles will please address POSTMASTER, Brush's Mills, Franklin Co., New York. 1*

STEAM TRAP VALVE, FOR DISCHARGING CONdensed water. For descriptive circular or a trial machine, address HOARD & WIGGINS, Providence, R. I. 22 12

A GREAT STORY, BY A POPULAR AUTHOR.—Will be commenced
ON THURSDAY NEXT,
IN THE NEW YORK WEEKLY,
the greatest story and sketch paper of the age, a new and thrilling historical romance, entitled
THE SEXTON OF SAXONY; or THE BRIDE'S BURIAL,
From the pen of Francis S. Smith, author of "Eveleen Wilson," "Florence O'Neil, or the Rebel's Daughter," "Lilian, the Wanderer;" "Maggie, the child of Charity;" "Galenus, the Gladiator," &c. For sale everywhere.

GUN BARREL ROLLS—GUN BARREL ROLLS.—Gun Barrel Manufacturers can be supplied with rolls for bending, welding and tapering gun barrels, by addressing HALL & ADAMS, Portsmouth, Scioto Co., Ohio. Post office Box 158. 1*

GOSSYPIUM ARBORIUM—PERENNIAL Cotton Tree. We have received a small consignment of this seed grown in the northern part of Peru. Mr. R. C. Kendal, who has successfully grown the cotton tree in Maryland from seed brought from southern Chili, advises that the plant produced from this seed be protected from frost during the first winter of its growth. A specimen of the cotton grown in Maryland by Mr. Kendal, and a colored drawing of the tree in full bearing, can be seen at our office. As an ornamental tree the Perennial Cotton has few equals. Its growth is compact and symmetrical, foliage dense and variegated as the silver maple, flowers profuse, delicately and distinctly odorous. The seed can be obtained in small papers bearing full printed directions at our warehouse. A pamphlet by Mr. Kendal is in print and will shortly be for sale by us, demonstrating the importance of the introduction of this tree as a field of culture to which the energies of the American farmer may be profitably directed. MAPES & LOCKWOOD,
Agricultural Warehouse, 23 Courtland street, New York.

A series of articles on this subject by Mr. Kendal will appear in the *Working Farmer and U. S. Journal*, published monthly at 23 Courtland street. 20 3

GUN FORGING.—PECK'S PATENT DROP PRESS, for gun and other forging. Manufactured by MILO PECK & CO., New Haven, Conn. 19 10*

MANUFACTURERS WANTED FOR BALL'S OHIO Mower and Reaper, the most popular, where introduced, and best in the world. Also for his light mower, having all the peculiar features of the large one. J. A. SAXTON, Canton, Ohio. 21 4*

WARREN'S TURBINE WATERWHEEL (WARREN & Damon's patent), manufactured by the American Waterwheel Works, Boston, Mass.—We would say to our patrons and parties in need of Turbine Waterwheels for factories, flouring mills, grist and sawmills, &c., that we are now able to furnish the most powerful, economical, cheap and durable wheel in use. They are constructed upon the most scientific principles, with steel buckets, and are highly finished. Seven hundred are now operating successfully in places where the greatest economy in water is required. Send for pamphlet, with illustrations complete. Address ALONZO WARREN, Agent, 31 Exchange street, Boston, Mass. 18 6*

BALLARD'S PATENT CLAW JACK SCREWS FOR Various Purposes. For railroads, boiler builders, bridgebuilders, &c., press for beef, pork and other substances. For sale by
20 3m W. BALLARD, No. 7 Eldridge street, New York.

PORTABLE STEAM ENGINES—COMBINING THE maximum of efficiency, durability and economy with the minimum of weight and price. They are widely and favorably known, more than 200 being in use. All warranted satisfactory or no sale. A large stock on hand ready for immediate application. Descriptive circulars sent on application. Address J. C. HOADLEY, Lawrence, Mass. 19 13

IRON PLANERS, LATHES, FOUR SPINDLE DRILLS, Milling Machines, and other Machinist's Tools, of superior quality, on hand and finishing, and for sale low. For description and prices address NEW HAVEN MANUFACTURING COMPANY, New Haven, Conn. 1 26

CRUDE PARAFFINE WANTED—FOR WHICH THE highest price will be paid for a good article well pressed. Address H. RYDER & CO., Patent Paraffine Candle Manufacturers, New Bedford, Mass. 12 tf

---

WOODWORTH PLANERS—IRON FRAMES TO PLANE 18 to 24 inches wide, at $90 to $110. For sale by S. C. HILLS, No. 12 Platt-street, New York. 3 e3wtf

---

NONPAREIL WASHING MACHINE.—THIS MACHINE must take precedence of all other machines now in use, being the only one justly entitled to be considered as constructed on correct mechanical principles. Machines and State and county rights for sale by OAKLEY & KEATING, 73 South street, New York. 153m

---

MESSIEURS LES INVENTEURS—AVIS IMPORtant. Les Inventeurs non familiers avec la langue Anglaise et qui préféreraient nous communiquer leurs inventions en Français, peuvent nous addresser dans leur langue natalle. Envoyez nous un dessein et une description concise pour notre examen. Toutes communications seront reçues en confidence. MUNN & CO.,
SCIENTIFIC AMERICAN Office, No. 37 Park-row, New York.

NEW YORK OBSERVER FOR 1862.—IN ASKING the aid of all who may desire to extend the circulation of the *New York Observer*, it is proper for us to state distinctly the position it occupies with reference to the present condition of public affairs in our beloved country.

Having always maintained the duty of good citizens in all parts of the land to stand by the Constitution, in its spirit and letter, when that Constitution was assailed and its overthrow attempted, we accordingly at once gave a cordial support to the Government in its patriotic endeavor to assert its lawful authority over the whole land. Believing secession to be rebellion, and when attempted, as in this case, without adequate reasons, to be the highest crime, we hold

1. That the war was forced upon us by the unjustifiable rebellion of the seceding States.

2. That the Government, as the ordinance of God, must put down rebellion and uphold the Constitution in its integrity.

3. That every citizen is bound to support the Government under which he lives, in the struggle to reëstablish its authority over the whole country.

4. That the Constitution of the United States is the supreme law of the Government as well as of the people; that the war should be prosecuted solely to uphold the Constitution and instrict subordination to its provisions: and the war should be arrested, and peace concluded, just so soon as the people now in revolt will lay down their arms and submit to the Constitution and laws of the land.

The distinctive features of the *Observer* are,

1. It is printed on a double sheet, so as to make two complete newspapers, one devoted to secular and the other religious matters; and these may be separated so as to make two complete journals, while the price for both is no greater than is charged for many papers smaller than either one of the two.

2. It gives every week a complete synopsis of the most interesting events in all the denominations, including those that are called Evangelical and those that are not; as every intelligent Christian wishes to be well informed respecting all of them.

3. It gives a well-digested epitome of the News of the Day, Foreign and Domestic, prepared with great labor and care, so that the reader is sure to be put in possession of every event of interest and importance to the public.

The foreign correspondence of the *Observer* is unrivaled, and has long commanded the admiration of intelligent men.

TERMS FOR NEW SUBSCRIBERS.

1. To each new subscriber paying in advance $2 50 for one year, we will send the paper and a copy of our Bible Atlas, with five beautiful colored maps.

2. To the person obtaining subscribers we will give $1 for each new subscriber paying $2 50 in advance.

3. To any person now a subscriber sending us one new subscriber and $4 we will send both papers for one year.

Specimen numbers of the *New York Observer* will be sent gratis to any address that may be forwarded to us for that purpose.

The state of the country renders it important for us and esirable for the churches, that a new and earnest effort be made to extend the principles of good government and sound religious truth into all the families of the land. In every neighborhood there must be some who do not now take a religious newspaper, and who might with a little exertion be induced to subscribe.

SIDNEY E. MORSE, JR., & Co.,
Editors and Proprietors,
tf. 37 Park Row, New York.

SOLID EMERY VULCANITE.—WE ARE NOW MANUfacturing wheels of this remarkable substance for cutting, grinding and polishing metals, that will outwear hundreds of the kind commonly used, and will do a much greater amount of work in the same time, and more efficiently. All interested can see them in operation at our warehouse, or circulars describing them will be furnished by mail.
NEW YORK BELTING AND PACKING CO.,
14 13 Nos. 37 and 38 Park-row, New York.

BRASS LIFT AND FORCE PUMPS, SHIP PUMPS, Steam Whistles, Gage Cocks, Oil Cups, and every variety Brass-Work used by engine builders, manufactured by HAYDEN, SANDERS & CO., 84 Beekman street, New York. 14 13*

GUILD & GARRISON'S CELEBRATED STEAM Pumps—Adapted to every variety of pumping. The principal styles are the Direct Action Excelsior Steam Pump, the improved Balance Wheel Pump, Duplex Vacuum and Steam Pumps, and the Water Propeller, an entirely new invention for pumping large quantities at a light lift. For sale at Nos. 55 and 57 First street, Williamsburgh, and No. 74 Beekman street, New York.
9 tf GUILD, GARRISON & CO.

PUMPS! PUMPS!! PUMPS!!!—CARY'S IMPROVED Rotary Force Pump, unrivaled for pumping hot or cold liquids. Manufactured and sold by CARY & BRAINERD, Brockport, N. Y. Also, sold by J. C. CARY, No. 2 Astor House, New York. 14tf

---

MACHINE BELTING, STEAM PACKING, ENGINE HOSE.—The superiority of these articles, manufactured of vulcanized rubber, is established. Every belt will be warranted superior to leather, at one-third less price. The Steam Packing is made in every variety, and warranted to stand 300 degs. of heat. The Hose never needs oiling, and is warranted to stand any required pressure; together with all varieties of rubber adapted to mechanical purposes. Directions, prices, &c., can be obtained by mail or otherwise at our warehouse. NEW YORK BELTING AND PACKING COMPANY.
JOHN H. CHEEVER, Treasurer,
14 13 Nos. 37 and 38 Park-row New York.

ALBANY IRON WORKS, TROY, N. Y.—SEMI-STEEL Plates and Forgings.—We are prepared to furnish forged shapes of this approved metal, and without unnecessary delay, having large facilities for production. Among the uses to which this material is now applied, and with great success, we name, rifled cannon for government use; also rifle and musket barrel shapes, locomotive engine tires, locomotive engine axles, straight and crank, car axles, crank pins, plates for locomotive fire box, flue sheets, &c. It is peculiarly adapted for shafting, indeed, for all purposes where strength and rigid qualities are required, its tensile strength ranging from 90,000 to 118,000 lbs. to the square inch, nearly double that of the best iron.—Cast-steel forgings up to 1,500 lbs. each, likewise furnished. Communications addressed to CORNING, WINSLOW & CO., A. I. Works, Troy, N. Y., will be promptly responded to. Parties at the West can be supplied on addressing their orders to A. S. WINSLOW, Cincinnati, Ohio. 15 6m*

ALCOTT'S CONCENTRIC LATHES—FOR BROOM Hoe and Rake Handles, Chair Rounds, &c.—Price, $25; and a other kinds of Wood-working Machinery, for sale by
8*1em S. C. HILLS, No 12 Platt-street, New York.

PORTABLE STEAM ENGINES—6, 8 AND 10-HORSE at $500, $625 and $730. For sale by S. C. HILLS, No. 12 Platt street, New York. 2e3w

---

Zur Beachtung für deutsche Erfinder.

Die Unterzeichneten haben eine Anleitung, die Erfindern das Verhalten angibt, um sich ihre Patente zu sichern, herausgegeben, und verabfolgen solche gratis an dieselben.

Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache machen. Skizzen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu addressiren an
Munn & Co.,
37 Park Row, New-York.

Auf der Office wird deutsch gesprochen.

Daselbst ist zu haben:

Die Patent-Gesetze der Vereinigten Staaten,

nebst den Regeln und der Geschäftsordnung der Patent-Office und Anleitungen für den Erfinder, um sich Patente zu sichern, in den Ver. St. sowohl als in Europa. Ferner Auszüge aus den Patent-Gesetzen fremder Länder und darauf bezügliche Rathschläge; ebenfalls nützliche Winke für Erfinder und solche, welche patentiren wollen.

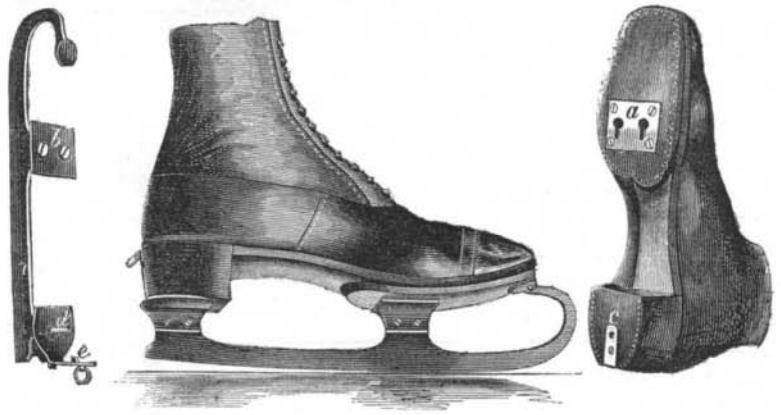
Preis 20 Cts., per Post 25 Cts.

Improved Skate.

The peculiarities and advantages of this skate will be readily perceived from the illustration. Dispensing with the objectionable and troublesome use of screws and straps in adjusting the skate, the fastening combines ease and comfort with strength and simplicity.

Fig. 1 is a view of the skate fastened upon the foot, Fig. 2 of the skate alone, and Fig. 3 of the bottom of the boot as prepared to receive the skate. Two plates are secured to the sole of the boot, one upon the ball and another on the heel. The plate, *a*, upon the ball has two slots formed in it of a pear shape, as shown, the slots being broadest toward the toe. Screw heads, projecting from the upper surface of the plate, *b*, Fig. 2, of the skate, enter these slots at their broad forward ends, but cannot pass through the narrower portions in the rear. To the bottom of the heel of the boot is secured a narrow plate, *c*, Fig. 3, which is bent at right angles and extends up as high as the heel. This plate is perforated to receive the spike, *d*, which projects upward from the heel plate of the skate, the heel also being bored for this purpose. Rising upward from the back edge of the heel plate of the skate is a spring catch, *e*, fitted with a bevel projection which catches into a slot cut in the heel plate of the boot to receive it.

Fig. 2. Fig. 1. Fig. 3.



DE BRAME'S PATENT SKATE.

The skate is fastened to the boot by passing the screw heads through the broad forward part of the slots in the sole plate, and then drawing the skate back to bring the screws to the narrow part of the slots, which effectually secures the forward part of the skate to the boot. The heel is then pressed up, introducing the spike, *d*, into the hole in the heel of the boot, and as the catch, *e*, enters its slot it secures the heel. The skate is taken off by pressing the catch, *e*, from its hold, dropping the heel so as to withdraw the spike, *d*, and slipping the skate a little forward to allow the screw heads to fall from out the slots. A round plate, *f*, upon the toe piece of the skate supports the toe of the boot, forming one of the most novel features of this invention.

It will be seen that this skate may be either put on or taken off in an instant. Its skeleton form gives it a highly elegant appearance when on the foot, and its lightness is, for ladies especially, an important recommendation. As the screw heads do not enter deeply into the sole, this skate may be worn with the thinnest soled boots.

The patent for this invention was granted through the Scientific American Patent Agency, April 9, 1861, and further information in relation to it may be obtained by addressing the patentees, J. A. de Brame and B. Gurney, at 707 Broadway, New York.

ELECTRO-MAGNETIC MACHINE ON A LARGE SCALE.—In our next number we shall publish a beautiful engraving, explanatory of Beardsley's electro-magnetic machine, which is now in extensive use at College Point, Long Island, for electro-plating on an extensive scale, by means of steam power instead of by the galvanic battery. It is also used at College Point for making the magnetic tack hammers which we recently noticed, which pick up tacks as well as hammer them down. It will be accompanied with an interesting article, clearly explaining the principles of magneto-electricity.

THE WAY BANK NOTE PLATES ARE HARDENED.—To harden an engraved steel plate, and to prevent it from warping or in the process a peculiar method must be adopted. The mode practiced by our bank note companies is to bury the plates in animal charcoal in a clay crucible and expose them to red heat for about two and a half hours, and then cool them by pressing them into cold lead. By this process all of the most delicate lines of the engraving are preserved in the most perfect manner, without the slightest distortion or damage.

The New Blue from Cotton Seed Oil.

On page 293 of the current volume we published an extract from the *Photographic News*, giving an account of a new blue dye obtained in France from cotton seed oil. The writer expressed the opinion that indigo and prussian blue had found a formidable rival in this new blue.

We find in *L'Invention* an article by M. Kuhlmann, giving a report of an elaborate series of investigations on the new substance, the result of which is very discouraging to the prospect of its industrial application. M. Kuhlmann says:—"The matter being soluble in alcohol, this solution served me as a bath for the dying. Several immersions in a warm alcoholic solution, allowing the stuffs to dry between each immersion, communicated an intense blue color, which soon, however, became green, and then changed to a yellowish brown. This result is evidently due to an oxydation in contact with the air, the oxydation being facilitated by light, especially by direct rays of the sun. The colors proved much more permanent in the dark, and more still in an atmosphere of carbonic acid. As the new substance plays the part of an acid rather than of an alkali, I sought to fix it on stuffs in a state of combination with various oxides. Some cotton, woolen and silk stuffs, prepared with a mordant of alumina, were dyed in the warm alcoholic solution, but the color preserved its great alterability. The application of alum, after the direct coloring of the stuffs, or mordant of the sesquioxide of iron, gave the same results. No better success attended the use of stannate of soda, followed by a bath of dilute sulphuric acid; nor a bath of perchloride of tin, followed by a dilute solution of hypochlorite of lime. The oxides of lead and of mercury gave no more permanent color."

We give these facts as a guide to our chemists who choose to experiment in the inviting field of making this cheap substitute for indigo practically useful, by fixing the color. The mode of preparing the blue is described on page 293.

Sulphur in California.

The refining of sulphur has been commenced as a business in Santa Barbara county, Cal. Twenty miles south-eastward of the town of Santa Barbara, and seven miles back from the Mission of San Buenaventura, which is upon the sea shore, is a great bed of native sulphur, deposited in remote ages by the vapors and waters of sulphur springs. The country in the vicinity bears strong marks of volcanic action. The sulphur deposits back of San Buenaventura have long been known, but only lately has it been rendered valuable. Messrs. Davidson, Spence & Co. commenced about the first of this year, to open the mine.

The *Daily Alta*, says that there were then some half dozen men at work in the mine, and this sulphur is so abundant and accessible, that the time is perhaps not far distant when it will be shipped to Europe. The crude deposit is stated to comprise 80 per cent of sulphur.

Two or three instances of the perforation of lead by insects have recently been brought under the notice of French naturalists. In one case which happened in the Crimea during the Russian war, the balls in several pockets of cartridges had been rendered entirely useless.

Comparative Extent of United States Canals.

The following table shows the comparative extent of the canals and locks of the United States:—

	Canals		Locks	
	*Width. Feet.	Depth. Feet.	Length. Feet.	Width. Feet.
Erie Canal	70	7	90	15
Pennsylvania	40	4	90	15
Delaware & Hudson	44	6	100	15
Schuylkill	36	3½	80	17
Lehigh	60	5	100	20
Morris	32	4	—	—
Chesapeake & Delaware	66	10	100	22
Chesapeake & Ohio	40	4	90	15
James River & Kanawha	50	4	100	15
Wabash & Erie	60	4	—	—
Illinois & Michigan	60	6	—	—
Delaware & Raritan	80	8	210	24

The Delaware and Raritan canal has been navigated by steamboats since 1844. The steamers which run on this and the Chesapeake and Delaware canal are propellers ranging from two to three hundred tuns burden, and they are from one hundred and fifty to two hundred feet in length.

*Width at surface.

FROM THE STEAM PRESS OF JOHN A. GRAY.