

plate work, by means of eyelets or their equivalents, substantially as set forth.
 Third, The employment of a skeleton flexible insulator for uniting the several sections of articulated galvanic-electric plate work.
 1,287.—Jesse A. Crandall, of New York City, for Improved Rocking Toy. Patented May 17, 1859:
 I claim the combination of the body, A, whether made in the form of a hobby horse or of a toy of other description of the class described with the base, B, B, and a spring or springs, C, for producing a rocking movement, as and for the purpose described.

New Publications.

NEW MILITARY MAP OF THE SOUTHERN AND BORDER STATES. Just issued by H. H. Lloyd & Co., No. 25 Howard street, New York City.

We find this a very useful map indeed, and can recommend it to our readers. It contains all the chief points of interest at the present time.

LONDON, EDINBURGH, NORTH BRITISH and WESTMINSTER REVIEWS. These periodicals, with "Blackwood's Magazine," are re-published by Leonard Scott & Co., No. 54 Gold street, New York City.

These five publications present to us the thoughts and opinions of the leading minds of England, and they exercise a potent influence on public affairs. All the last issues of these reviews contain articles on the "American Crisis." The "London" is intensely Tory, as might have been expected; the others are more liberal, but not fully enlightened on this great and intricate question. The most distinguished European writers who seem to understand it, are Count Gasparin, in France, and J. Stuart Mills, in Scotland. Their instincts, learning and reasoning are against oppression and wrong.

PATENTS FOR SEVENTEEN YEARS.



The new Patent Laws enacted by Congress on the 2d of March, 1861, 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 down 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.....	\$10
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 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 reference to such countries as discriminate against citizens of the United States—thus allowing English, French, Belgian, Austrian, Russian, Spanish, and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms.

During the last sixteen 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 more than FIFTEEN 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 afterward 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 are employed at present in our extensive Offices, and we are prepared to attend to Patent business of all kinds in the quickest time and on the most liberal terms.

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 submit to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

Preliminary Examinations at the Patent Office.

The advice we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a Patent &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. More than 5,000 such examinations have been made through this office during the past three years. Address MUNN & CO., No. 37 Park-row, N. Y.

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 fees 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.

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, in English and German, 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 our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one 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.

Rejected Applications.

We are prepared to undertake their 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.

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.



S. B. R., of Mass.—The power of a hydraulic press is in proportion to the area of the cross section of the cylinder as compared with the area of the cross section of the pump piston. So, if the size of the pump remains the same, with double area of cylinder section there will be double power. The areas of circles are to each other as the squares of their diameters, consequently, with double diameter you have four times the area.

G. W. S., of Pa.—The question of pointed projectiles for piercing armor plates has been much discussed in the SCIENTIFIC AMERICAN and other papers.

B. W. T., of Ill.—Hydraulic cement is spoiled by being wet unless it is used immediately. You can easily try yours by wetting a little and cementing two stones together with it. Any bar of iron or steel standing for a long time in a vertical position becomes magnetic. We have tried many old pairs of tongs with a compass and always found that one end would attract the North pole and the other the South. We should like a more minute account of the action of the tacks of which you speak.

F. E. M., of Mass.—We recommend Wells's Chemistry as an excellent hand book.

A. C. D., of Mich.—The number of pounds required to hold your scow against the current would depend very much on the form of the scow.

T. A. H., of Ill.—If a cylinder 12 inches in diameter with its upper end open, has a piston fitted into it airtight, and a weight is placed on the piston, the cylinder below the piston being filled with water; the water will be forced out of an opening an inch square in the lower end of the cylinder with a force just equal to the pressure of the weight on each square inch of the piston—minus the friction.

T. J., of Ind.—We have had considerable experience with cement pipes, and like them very well for small aqueducts, but do not believe they would answer for 10,000 gallons per day under a pressure of 60 feet head. We presume cast iron would be the only suitable material in such a case.

W. B., of Pa.—If the invention to which you refer as having been patented and described in the SCIENTIFIC AMERICAN is an old and well known device then surely the patent is of no value and any one can use it with impunity. We do not admit the right of parties ordinarily to attack the validity of a patent in our columns. It would be unjust to the patentee and lead to abuses dangerous to the interests of inventors.

G. E. M., of N. B.—Quite a number of amalgamators have been illustrated and described in former volumes of the SCIENTIFIC AMERICAN. Consult these and write to the patentees of such machines, respecting their price, &c.; also, to J. & E. W. Barker, of Baltimore, Md., on the particulars of the amalgamator illustrated on page 97, Vol. II. (new series) SCIENTIFIC AMERICAN.

G. W. L., of N. Y.—We are not acquainted with any other treatise on watch making but the "Clock and Watch Maker's Manual," excepting Reid's treatise on Horology which would be of no use to you for the repairing of watches.

J. R., of Wis.—We think that the pendulum question is about exhausted.

H. C. R., of N. Y.—If a cannon pointing due south is discharged while it is moving due west with velocity equal to that of the ball, the direction of the ball will not vary appreciably from a southwest course in the extent of its range. If it should go a thousand miles its course would curve a little to the west in consequence of the surface of the earth at the equator, moving more rapidly than at the poles.

A. B. S., of Conn.—We cannot advise you to substitute a wind-wheel for a steam engine of 10-horse power to be employed in grinding tan bark. A wind-wheel of such power would be very large and its action very irregular.

C. A. D., of N. Y.—India rubber boats were used on the first Arctic expedition of Dr. Kane, but we do not know how much they weighed.

S. P., of N. Y.—The soles of boots and shoes have been provided with metallic guards arranged in various ways. We have some doubts of the patentability of your particular plan of applying them, as we cannot see that it differs essentially from many others.

SPECIAL NOTICE—FOREIGN PATENT.—The population of Great Britain, is 30,000,000; of France, 35,000,000; Belgium, 5,000,000; Austria, 40,000,000; Prussia, 20,000,000; and Russia, 60,000,000. 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. Nearly all of the patents secured in foreign countries by Americans are obtained through our agency. Address Munn & Co., 37 Park row, New York. Circulars about foreign patents furnished free.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, March 19, 1862:—

J. P. E., of Pa., \$45; A. J. G., of N. Y., \$20; R. K., of Ill., \$20; J. J. K., of Ill., \$20; J. A. McG., of Mass., \$45; C. G. S., of N. Y., \$15; E. R. McC., of Iowa, \$25; D. D. S., of N. J., \$15; I. Van B., of N. Y., \$100; W. E. F., of N. Y., \$15; W. V. McK., of N. Y., \$15; H. O. P., of Mass., \$30; W. F. R., of R. I., \$35; A. A. P., of Mass., \$15; A. Van A., of N. Y., \$100; S. B. C., of N. Y., \$15; J. C. M., of Ill., \$15; A. L., of Iowa, \$25; C. W., of N. Y., \$40; A. H., of Minn., \$10; H. T. H., of N. Y., \$10; J. A. W., of N. J., \$25; H. N. H., of Vt., \$15; G. and C., of Conn., \$15; A. B., of N. Y., \$15; J. H. B., of N. J., \$15; C. H. and W. G., D., of Pa., \$25; J. E. H., of Mass., \$15; H. and M., of N. Y., \$10; C. M. A., of Pa., \$15; R. L. B., of Mich., \$20; C. E. L. H., of Conn., \$20; J. S. W., of Va., \$20; C. C., of Pa., \$20; E. M. S., of N. Y., \$45; C. D. I., of Miss., \$25; A. C., of N. Y., \$25; W. B., of N. Y., \$12; A. S., of N. Y., \$250; F. B. P., of N. Y., \$30; P. and L., of Pa., \$15; H. H. E., of Conn., \$25; W. T., of N. Y., \$20; J. C. N., of Pa., \$12; A. G. B., of Conn., \$25; W. G. P., of Del., \$15; C. H. W., of Mass., \$15; J. D. and J. T. S., of N. Y., \$15; L. C. C., of Mass., \$10; H. M., of Mass., \$10; T. McG., of N. Y., \$25; A. B. T., of Neb., Ter., \$20; A. B. B., of Conn., \$15; H. and S., of N. Y., \$15; T. and H., of Mass., \$15; W. C. S., of N. Y., \$15; J. C., of N. J., \$15; G. F., of N. Y., \$250; W. O., of N. Y., \$25; M. T. G., of Wis., \$20; J. O. F., of Mass., \$45; D. R., of N. Y., \$45; P. J., of N. J., \$20; C. B. H., of Mass., \$20; H. and B., of Mich., \$12; I. C., of N. J., \$15; F. and C., of Mich., \$15; I. D., of Mo., \$15; D. F., of O., \$15; S. S. W., of Pa., \$300; D. and C., of N. Y., \$250; J. K., of N. Y., \$25; H. C. D., of C. W., \$15; J. H. G., of Mass., \$25; J. J. A., of Mich., \$25; J. R. G., of Ill., \$10; T. and D., of O., \$15; A. J. A., of Wis., \$20; H. B., of Conn., \$40; R. P. G., of Wis., \$10; D. and S., of N. Y., \$15; H. W., of Vt., \$15; J. S., of N. Y., \$40; A. L. W., of Mass., \$25; O. C. S., of Mass., \$15.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from March 5 to Wednesday, March 19, 1862:—

J. C. N., of Pa.; H. and M., of N. Y.; W. B., of N. Y.; H. and B., of Mich.; R. S., of N. Y.; F. B. P., of N. Y.; H. O. P., of Mass.; C. D. I., of Mass.; W. O., of N. Y.; E. R. McC., of Iowa; A. C., of N. Y.; H. H. E., of Conn.; E. B. R., of N. J.; W. T., of N. Y.; E. C. F., of Mass.; J. H. G., of Mass.; J. R., of N. Y.; A. G. B., of Conn.; J. J. A., of Mich.; A. L., of Iowa; C. H. and W. G. D., of Pa.; A. K. R., of Vt.; R. P. G., of Wis.; G. and C., of Conn.; E. Y., of N. Y.; J. McG., of N. Y.; J. A. W., of N. J.; A. L. W., of Mass.; J. Van B., of N. Y. (2 cases); W. S., of N. J.; J. R. G., of Ill.

THE CHEAPEST MODE OF INTRODUCING INVENTIONS.

INVENTORS AND CONSTRUCTORS OF NEW AND useful Contrivances or Machines, of whatever kind, can have their Inventions illustrated and described in the columns of the SCIENTIFIC AMERICAN on payment of reasonable charge for the engraving.

No charge is made for the publication, and the cuts are furnished to the party for whom they are executed as soon as they have been viewed. We wish it understood, however, that no secondhand or poor engravings, such as patentees often get executed by inexperienced artists for printing circulars and handbills from, can be admitted into these pages. We also reserve the right to accept or reject such subjects as are presented for publication. And it is not our desire to receive orders for engraving and publishing any but good Inventions or Machines, and such as do not meet our approbation in this respect, we shall decline to publish.

For further particulars, address—
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 Publishers SCIENTIFIC AMERICAN,
 New York City

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VOLUMES I., II., III., IV., V. (NEW SERIES) COMPLETE (bound or unbound) may be had at this office and from all periodical dealers. Price, bound, \$1.50 per volume, by mail, \$2.—which include postage. Price, in sheets, \$1. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding.

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WANTED.—A GOOD PRACTICAL FOUNDRYMAN and machinist as a partner, with a capital of from \$1,000 to \$4,000, to superintend and take charge of a foundry and machine shop. The building is nearly completed. The machinery and a large amount of stock on hand, and no competition. The whole nearly ready to commence operations. The location is one of the best on the line of the New York and Erie Railroad. Address H. M. MOORE, Owego, Tioga County, N. Y.

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ANOTHER NEW STORY IN THE NEW YORK WEEKLY, entitled "Raphel Devereaux, or the Wolf of Vignoble." By Mrs. Helen Fisher, author of "Carrie Emerson Wilde," "The Curse of Everleigh," &c.—Mrs. Fisher is well known to the readers of the Weekly as the writer of the pleasant and entertaining sketches under the nom de plume of "Noneseuch;" and those who read her serials, "Carrie Emerson Wilde" and "The Curse of Everleigh," cannot but be pleased with an opportunity to judge of her abilities in a more extended effort. She is a young writer, who has won no small popularity by her delightful sketches, and has, with care and study, to ultimately take rank among the first lady writers in the land. We only ask for her, what we are sure she will get, a careful perusal of her forth-coming serial by the numerous readers of the Weekly. It cannot fail to be fresh and entertaining, as everything that comes from her pen. Rachel Devereaux; or the Wolf of Vignoble, will be ready in the New York Weekly about the middle of April, and for sale by every news agent throughout the country.

LABORATORY OF CHEMISTRY.—ADVICES AND consultations on chemistry, as applied to arts and manufactures, agriculture, &c., commercial essays, analyses of every kind. Address Prof. H. DUSSAUCE, Chemist, New Lebanon, N. Y.

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ESSAYS, BY SIR E. BULWER LYTTON.—IN THE first number of the new volume of the HOUSEHOLD JOURNAL, ready 20th March, will be published the first of a series of essays by the distinguished writer, on "Life, Literature and Manners," to be continued weekly.

LECTURES, BY PROFESSOR AGASSIZ, ON NATURAL HISTORY.—The lectures now being delivered in New York by Prof. Agassiz are being reported specially for the HOUSEHOLD JOURNAL, in which they will be published in full. The first will appear in the first number of the new volume, ready 20th of March. Price 4 cents.

THE HOUSEHOLD JOURNAL, NEW VOLUME, (VOL. 4).—The first number will be ready 20th of March, and, beside the above, will contain a piece of new instrumental music, Tales, Poetry, Sketches, Chess, Draughts, Wit and Humor, Natural History, Miscellany, History and Travel, Art, Science and Invention, Juvenile Department, Gardening, Fashions, and Answers to Correspondents.

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Consultation may be had with the firm between NINE and FOUR o'clock, daily, at their PRINCIPAL OFFICE, No. 37 PARK ROW, NEW YORK. We have also established a BRANCH OFFICE in the CITY OF WASHINGTON, on the CORNER OF F AND SEVENTH STREETS, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Offices are cordially invited to call at their office.

They are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business they have Offices at Nos. 66 Chancery Lane, London; 29 Boulevard, St. Martin, Paris, and 26 Rue des Eperonniers, Brussels. We think we may safely say that three-fourths of all the European Patents secured to American citizens are procured through our Agency. A pamphlet of information concerning the proper course to be pursued in obtaining Patents through their Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the Principal Office, or either of the Branches. They also furnish a Circular of information about Foreign Patents. The annexed letters from former Commissioners of Patents we commend to the perusal of all persons interested in obtaining Patents.

Messrs. MUNN & Co.—I take pleasure in stating that while I held the office of Commissioner of Patents MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill and fidelity to the interests of your employers. Yours, very truly, CHAS. MASON.

Immediately after the appointment of Mr. Holt to the office of Postmaster General of the United States, he addressed to us the subjoined very grateful testimonial:—

Messrs. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large and well sustained (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, Your obedient servant, J. HOLT.

Messrs. MUNN & Co.—Gentlemen: It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your Agency, and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, WM. D. BISHOP.

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TO OIL REFINERS.—PERSONS ENGAGED IN OIL refining can obtain a recipe, on moderate terms, giving full information how to refine and deodorize rock oil, by applying to THOMAS PARRY, Pittsburgh, Pa.

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 latest improvements.

Zur Beachtung für deutsche Erfinder. Die Unterzeichneten haben eine Anleitung, die Erfindern das Verfahren angibt, um sich ihre Patente zu sichern, herausgegeben, und verabfolgen solche gratis an dieselben. Erfinder, welche nicht mit der englischen Sprache befaßt sind, können ihre Mittheilungen in der deutschen Sprache machen. Zeigen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu adressiren an Munn & Co., 37 Park Row, New York.

Auf der Office wird deutsch gesprochen. Daselbst ist zu haben: Die Patent-Geheke der Vereinigten Staaten, nebst den Regeln und der Geschäftsführung der Patent Office und Anleitungen für den Erfinder, um sich Patente zu sichern, in den Ver. St. sowohl als in Europa. Ferner Anträge aus den Patent-Gefassen fremder Länder und darauf bezügliche Nachrichten; ebenfalls nützliche Winke für Erfinder und solche, welche patentiren wollen. Preis 20 Cts., per Post 25 Cts.

Improved Tent.

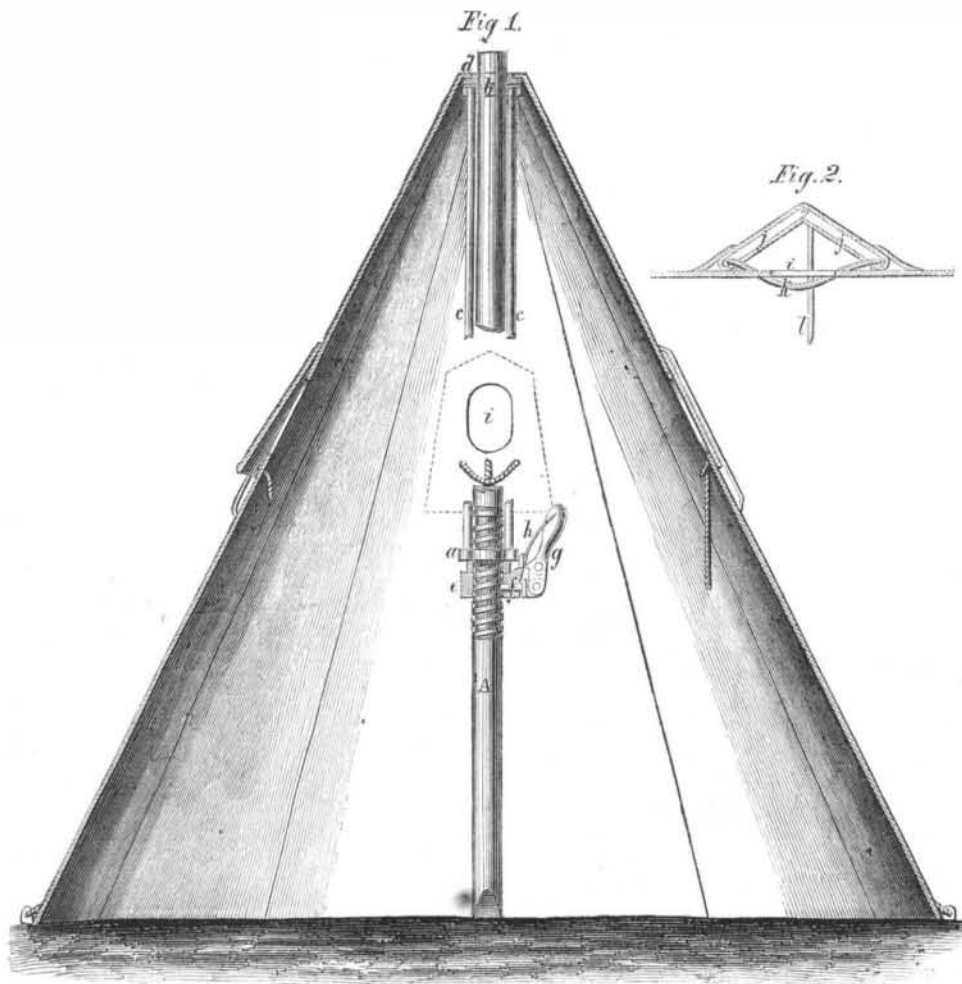
Serious inconvenience is found to result in tents made of canvas from the contraction of the cloth when it is wet, and its corresponding expansion when dry. At one time the canvas hangs in a loose state, flapping in the wind, and at another it is either torn by its contraction, or the pins which secure its lower edge are drawn from the ground. To remedy this evil tent poles have been made so that they could be lengthened or shortened, at the will of the occupants. The accompanying engraving illustrates an improved plan for extension tent poles, together with an improvement in the mode of ventilating tents.

out from the side of the tent to admit air, or allowed to fall against it at will. To this end two sticks, *j, j*, are connected by a pin joint, and sewed into the hem in the lower edge of the flap. A cord, *k*, is attached at its ends to the outer ends of the sticks, with its loop hanging within the tent, so that by pulling this loop the outer ends of the sticks are drawn toward each other, and the joint at the middle is bent outward, bowing out the lower edge of the flap. The ventilator is closed by pulling the cord, *l*, which is fastened to the sticks at the joint. Suitable pockets protect the flap at its edges.

This ventilator is a simple one, involving little, if

that good order shall always be maintained inside, at the expense of the grantees; and that the work shall be completed by the 1st of January 1864. The specifications of the contract are minute and are believed to cover the objections which might be made to the granting of a monopoly of such a character. The grantees, on their part, agree to pay a rent which will add considerably to the revenues of the Park. The conservatory will cost about \$50,000.

GREAT PRODUCT OF IRON.—Blast furnace No. 3, of the Lackawanna Iron and Coal Company, at Scranton, Pa., made, during four weeks, the largest amount of iron ever produced in that length of time by a single furnace in the United States, and probably in the world, the yield of the last week amounting to 375½ tons. For the week ending January 25, 356 tons; for the week ending February 1, 342 tons; for the week ending February 8, 357 tons; for the week ending February 15, 375 tons—average, 357½ tons. This furnace is 50 feet high, 19 feet in diameter at top of boshes, and is blown through 18 tuyeres, with seven pounds pressure of blast.



TOWNSEND'S ARMY TENT.

The tent pole, A, Fig. 1, is made of suitable length, with a screw upon it at the proper height to be within convenient reach of a man's hand. Fitting loosely around the outside of this screw is the band, *a*, which is rigidly connected with the band, *b*, at the top of the tent, by the rods, *c, c*. The canvas is secured at the summit to the loose ring, *d*, which rests upon the band, *b*, from which arrangement it will be seen that the canvas may be tightened by raising the bands, *a* and *b*, and thus lifting the ring, *d*, or it may be loosened by lowering these parts.

The band, *a*, with its connections, is raised or lowered by means of the ring, *e*, which fits loosely around the screw upon the tent pole, but is connected with this screw by the pin, *f*, the end of which enters between the threads of the screw. Thus, by turning the ring, *e*, around the pole, the band, *a*, is raised or lowered.

The pin, *f*, is attached by a pin joint to the lower end of the lever, *g*, the upper end of which is pressed outward by the spring, *h*, to hold the pin, *f*, in place. But in taking the tent down, the upper end of the lever, *g*, is pressed inward to the pole, thus withdrawing the pin, *f*, from between the threads of the screw, and allowing the band, *a*, and its connections to fall.

In pitching the tent, the pins at the outer edge are first driven into the ground, the pole is then inserted into the ring, *d*, and the ring, *e*, is lifted till the pin, *f*, catches into the screw; when, by a few turns of this ring around the pole, the canvas is tightened to any desired degree of tension.

For ventilating the tent, apertures are made at the desired height in its sides, which are covered by flaps, so arranged that their lower ends may be pressed

any, additional expense, and enabling the occupants of a tent to regulate its ventilation without exposing themselves to the weather outside.

The patent for this invention was granted, through the Scientific American Patent Agency, March 4, 1862, and further information may be obtained by addressing the inventor, George O. Townsend, at No. 30 Avery street, Boston, Mass.

Conservatory in the Central Park.

One of our cotemporaries states that the Central Park Commissioners have contracted for the construction of a grand conservatory, the largest in the United States, upon the Park grounds. The building is to be a "Crystal Palace," of iron and glass, 200 feet long, 70 feet wide, and about 50 feet high. Its base will be a parallelogram, and there will be three stories, curving inward like the successive folds of a turban. The conservatory will front Fifth avenue; its center being opposite Seventy-fourth street; and directly in its rear will be a beautiful little pond, with walled sides of a symmetrical shape, which will be built during the coming two years. When the Fifth avenue is graded to its proper height, it will be on a level with the second story of the proposed conservatory; and the main entrance to the edifice will therefore be on that story. Stairs and balconies will give access to every portion of the building. The contract provides that the grantees must erect the building entirely at their own expense, after the plans already agreed upon; that they must place in it nothing but flowers, or rare trees or plants; that they shall be allowed to sell bouquets, &c., to visitors; that the public shall always be admitted free;

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