

36,618.—Clarence Linden, of Eden Township, Ill., for Improved Atmospheric Air Bed and Knapsack:

I claim, as a new article of manufacture, the elastic air bed, constructed so as to be carried and used as a knapsack when constructed and its parts, relatively to each other, all arranged as and for the purpose specified.

36,619.—Joseph Marks and Richard Eaton, of Hamilton, Canada, for Improved Spark Arrester:

We claim, first, The perforated or gauze cones, B Band C C, in combination with the outer shell of the smoke stack, when the former is arranged within the latter, as described.

Second, The double cone piece, D, arranged in the lower open end of the perforated or gauze cone, B B, so as to deflect a portion of the sparks which escape through the perforations or meshes of the cone, B B, through an annular space at the bottom thereof, into and against the inner sides of the chimney or smoke stack, substantially as described.

[This invention consists, first, in the use of two or more conical diaphragms of gauze, wire netting or perforated plates, held at a convenient distance from each other in the smoke stack. Second, in the employment of a central double cone piece, whereby the sparks which escape through the diaphragm or perforated cone are allowed to return into the chimney, and by the action of the exhaust steam are further reduced in size, and extinguished before being finally ejected into the atmosphere.]

36,620.—J. G. Perry, of South Kingston, R. I., for Improvement in Pocket Knives:

I claim the combination of the bolt with the escutcheon or name piece, substantially as described and for the purpose set forth.

36,621.—T. R. Pickering, of New York City, for Improved Centrifugal Governors:

I claim the employment of the collar, E, with the spring ends, and the flanch, B, as and for the purpose herein shown and described.

Second, The combination of the leaves, g h, with the spring, D, as and for the purpose herein shown and described.

Third, The employment of the central plugs, e e, in combination with the balls, F, and springs, D, in the manner and for the purpose herein shown and described.

36,622.—Elias Rhoades, Sen., of Clyde, Ohio, for Improvement in Pumps:

I claim the disk valves, D, perforated heads, B, and ledges, a, in combination with the hollow piston rod, G, and valves, m, and openings, o, when these several parts are constructed, arranged and operated in connection with the cylinder, A, as and for the purpose specified.

36,623.—H. C. Sergeant, of New York City, for Improvement in Steam Pumps:

I claim the arrangement of the steam and pump cylinders, balance wheel shaft, cranks and connecting rods, as specified in the foregoing specification.

36,624.—T. F. Rowland, of Green Point, N. Y., for Improvement in Machines for Planing Metals:

I claim fitting the cutters, C, within the uprights, b, in the manner herein shown and described.

36,625.—F. S. Robinson, of Boston, Mass., for Improvement in Machines for Separating Cotton Waste:

I claim the combination of the supporting bar, D, one or more series, F F G, of teeth (applied to a rotary carrier as specified), and mechanism by which each range of teeth shall be caused, during the revolution of the carrier, to seize the waste as it may project from the bar, D, and draw it out therefrom, and separate it more or less, and subsequently let go of it in manner substantially as hereinbefore explained.

36,626.—S. H. Suggett, of Eden, Maine, for Instrument for Reaming Out the Barrels of Ships' Pumps:

I claim the reaming instrument, with its cutter, i, chamber, b, and movable plate, a, the whole being arranged substantially as set forth, for the purpose specified.

36,627.—J. E. Thomson, of Buffalo, N. Y., for Improvement in Apparatus for the Manufacture of Illuminating Gas:

I claim a compound retort, D D', containing three chambers, f g h, constructed, arranged and used (either vertically or horizontally), for the purposes and substantially as herein set forth.

36,628.—G. I. Washburn, of Worcester, Mass., for Improvement in Annealing Iron and Steel Wire, &c.:

I claim, in the process of annealing wire or other articles, the use of such an artificial atmosphere or gas, or mixture of gases, in the annealing pot or vessel, as will enable me to control the degree of oxidation of the iron or steel being annealed, or to prevent oxidation entirely, substantially in the manner herein described.

36,629.—G. B. Wiggin and J. W. Hoard, of Providence, R. I., for Improvement in Nail Machines:

I claim, first, The combination of the heading die levers, O O', stirrups, j j', and toggles, k k', with the oscillating cutter head, F, in the manner herein shown and described.

Second, So applying the heading dies, N N', in the form of plungers, that they may be free to turn on their axes, substantially as and for the purpose herein specified.

Third, The employment for drawing back the heading dies, N N', of hooks, l l', attached to the heading levers, O O', and arranged to operate substantially as described upon flanges n n', provided on the said dies, for the purpose of turning them.

Fourth, The arrangement of the single pair of nippers, D D', to operate in combination with the two sets of holding dies, substantially as herein specified.

Fifth, Supporting the whole of the feeder in a carriage, R S, composed of a transversely-moving slide, R, and a standard, S, pivoted to the said slide, substantially as herein specified.

Sixth, The opening of the tongue by means of two pins, v v, arranged to operate substantially as herein set forth.

Seventh, So applying the guides, T, T, in combination with the carriage of the feeder as to permit them to be raised up high enough to allow the feeder to be turned away from the cutters, substantially as and for the purpose herein specified.

36,630.—Luman Andrews (assignor to himself and Phineas Stevens), of De Kalb, Ill., for Improvement in Telegraph Cables:

I claim, in combination with the cylinder, A, and the valves, B B', the sliding joint, m n, in the cable, a, constructed and operating substantially as set forth.

Second, I claim the arrangement of the cylinder, A, the movable rings, C C', and wires, b b, in combination with the sliding joint, m n, operating as described.

36,631.—Edwin Blackman (assignor to himself and J. S. Taylor), of Danbury, Conn., for Improvement in Self-Weighing Carts:

I claim the steel yard, E, and platform, Q, in combination with steel yard, F, and prop, D, (or spring scales suspended from the cattle), when constructed and applied to a cart, substantially in the manner and for the purposes hereinbefore set forth.

36,632.—A. H. Perkins (assignor to himself and J. M. May), of Janesville, Wis., for Improved Process of Treating Coal Tar to Manufacture Roofing Cement:

I claim the new process herein described of treating coal tar, to form a cement material, for the purposes set forth.

36,633.—G. L. Witsil (assignor to himself and Thomas Cochran), of Philadelphia, Pa., for Improved Apparatus for Stirring and Mixing:

I claim two or more spiral rods or bars, contained in a vessel of suitable form, one spiral rod being left handed and the other right handed, or the rods being otherwise so arranged, and caused to so revolve, as to produce separate currents in, and a thorough agitation and admixture of, the contents of the vessel, in the manner specified.

RE-ISSUE.

1,335.—Charles Perley, of New York City, for Improvement in Compound Capstans for Ships:

I claim, first, A removable heaver on a vertical shaft, sustained and rotated from below said heaver, in combination with a second shaft and capstan or capstan head, and with gearing between the said shafts, substantially as and for the purposes specified.

Second, I claim a capstan on a vertical shaft, that can be connected to or disconnected from the shaft, in combination with a chain wheel or heaver on a separate vertical shaft, the two shafts being connected by gearing, substantially as set forth; whereby the capstan can be used separately from the heaver, or both heaver and capstan can be rotated in either direction, to take in or give out chain cable, as set forth.

Third, I claim the adjustable bearing block, o, in combination with the chain heaver, m, to relieve the vertical shaft of said heaver from strain and friction that would otherwise result from the weight of the chain, or the strain on the same while the vessel is lying at anchor, as set forth.

Fourth, I claim the combination of the power capstan, n, coupling, 9, and heaver, m, for the purposes and as specified.

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:—

Table listing patent fees: 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-issuance, \$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 Austrian, French, Belgian, English, 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 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 London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that ~~trans-foreigners~~ 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.



H. T., of Pa.—Borax is a salt composed of boracic acid and soda and is also called borate of soda. It is manufactured upon an extensive scale from the boracic acid of certain warm lagoons in Tuscany, by adding to the acid carbonate of soda. The acid arises in vapor from the hot lagoon and it is condensed by being conducted through cold water. Borax is used extensively as a flux in metallurgical operations, also in the processes of welding steel and iron. It is called an alkaline salt because it is more alkaline than acidulous in its action. So far as we know all the borax used in our country is imported from Europe. Formerly considerable quantities of borax came from Tibet.

D. B., of Ind.—The assignee of a part of an original patent would have no right to any part of an improvement subsequently made and patented, unless there was an agreement made that he should enjoy equally a right as under the original patent.

J. J., of Utah.—Your endless chain of cups for well windlasses is not new. We cannot state what the cost of the same would be per running foot.

N. F. D., of C. W.—Brass cannot be prevented from tarnishing in the open air unless it is coated with some varnish. A transparent varnish made with Canadian balsam dissolved in turpentine will answer. White gum shell-lac dissolved in alcohol and colored with turmeric is used as a lacquer for light brass work. Professor Bartlett's "Philosophy of Mechanics," published by A. S. Barnes & Co., this city, is the most comprehensive work published here on the subject.

W. L. C., of Iowa.—Water moving at the rate of 5 miles and 2,400 feet—which is nearly 5 1/2 miles—per hour, has a velocity of 8 feet per second, and this is the velocity that it acquires in falling one foot. Thirty-three thousand pounds per minute falling one foot produces 1-horse power. A stream running with a given velocity has the same force that the water would have in falling from a height sufficient to acquire the same velocity. Hence with a velocity of 5 1/2 miles per hour you will have 1-horse power for every 33,000 pounds, so you will have a horse power for every 523 cubic feet of water which flows in your stream per minute. If your stream is 6 feet deep and flows with a velocity of 450 feet per minute you will have about 5-horse power for every foot in width.

R. W., of Ohio.—To make nitrous oxide or laughing gas take nitrate of ammonia and heat it gently in a flask to a temperature of about 250°, when it exhibits signs of boiling and is decomposed into water and laughing gas. The latter should be collected over warm water or salt brine. Do not permit the temperature of the flask to become too high, or other gases will pass over. The nitrate of ammonia used should be very pure. A small explosion sometimes attends the manufacture of laughing gas, but with the exercise of ordinary discretion you will be able to manufacture it for experimental purposes.

D. L., of Ohio.—The mineral which you have sent us is of no value in a metallurgical sense. It is mostly composed of silica and a small quantity of ferruginous matter.

Money Received

At the Scientific American Office on account of Patent Office business, from Wednesday, October 8, to Wednesday, October 15, 1862.

- R. K., of N. Y., \$40; G. & M., of N. Y., \$22; S. H., of N. Y., \$15; P. C., of Ill., \$25; J. H. T., of C. T., \$15; F. B., of Conn., \$25; R. H. W., of N. Y., \$15; P. S., of N. Y., \$315; C. L. R., of Wis., \$25; I. C. Jr., of Ill., \$15; A. N. P., of Ill., \$15; J. E. S., of Me., \$15; J. T. B., of Ill., \$25; S. & H., of N. J., \$25; T. N., of C. W., \$15; N. P., of N. Y., \$15; A. J. E., of N. Y., \$15; A. J. S., of Cal., \$25; M. L. G., of Wis., \$15; M. & J., of N. Y., \$15; T. & B., of N. Y., \$100; G. B. McD., of Ky., \$40; W. T. M., of Cal., \$10; M. & G., of Ill., \$15; W. H. S., of Conn., \$15; G. J., of N. Y., \$20; C. G., of Pa., \$20; N. A. B., of N. Y., \$15; T. H., of N. Y., \$20; O. S., Jr., of C. E., \$20; J. M. & W. C. W., of Iowa, \$20; C. M. A., of Pa., \$20; N. B. P., of N. Y., \$40; P. & L., of Pa., \$37; J. W. B., of N. Y., \$25; T. R., of N. Y., \$20; J. B. R., of N. J., \$43; W. H. J., of Ind., \$20; N. A. B., of N. Y., \$15; I. E., of N. J., \$40; H. U., of N. Y., \$20; E. B., of Cuba, \$40; J. H. S., of N. Y., \$40; L. D. B., of N. J., \$20; P. & R., of N. Y., \$45; J. G. Y., Jr., of N. Y., \$70; H. K., of N. Y., \$25; R. K., of N. Y., \$25; E. V. S., of N. Y., \$25; G. H. R., of N. J., \$30.

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 October 8 to Wednesday, October 15, 1862:— J. H. S., of N. Y.; J. W. B., of N. Y.; W. T. M., of Cal.; G. & M., of N. Y.; E. B., of France; F. B., of Conn.; P. C., of Ill.; A. I. A., of Ill.; C. L. R., of Wis.; G. J., of Me.; T. V., of Cal.; A. J. S., of Cal.; J. T. B., of Ill.; G. H. R., of N. J.; E. V. S., of N. Y.; R. K., of N. Y.; S. & H., of N. J.; H. K., of N. Y.