

514.—Herrman Müller and Charles Majer (assignors to themselves, Fritz Kasefang and Louis Beauche), of New York City, for an Improvement in Cigar Machines :

We claim, first, The fixed concave surface, G, in combination with the rollers, E and F, closing roller, D, and knives, r—the whole being constructed and operated in the manner and for the purpose substantially as described.

Second, The fixed concave surface, P, in combination with the two side rollers, N and O, the fork, L, and the sliding plate, M—the whole being constructed and operated in the manner and for the purpose substantially as set forth.

Third, The sliding board, M, with its rack, R, and its soft cover, m, for the rolling of the outer leaf, substantially as described.

Fourth, The fork, L, spring, l, fitting over the cigar during the rolling up of the outer leaf, substantially as described.

515.—William Turner (assignor to J. Y. Norton and J. Philips), of Phoenixville, Pa., for an Improved Lubricating Compound :

I claim the use of this compound for lubricating purposes.

516.—T. H. Dodge, of Washington, D. C., for an Improvement in Mowing Machines :

I claim, first, The combination with the drag bar or shoe and heel of the finger beam, of E. Ball's "Ohio Mower," patented December 1, 1867, of a lifting lever and cord or chain, whereby the driver can cause the heel of the finger beam to rest very lightly on the stubble or ground or be raised entirely above both.

Second, I also claim extending the drag bar back, so as to permit the finger beam to fall over in rear of the driver's seat, in combination with a rear extension piece for its support, substantially as described.

RE-ISSUES.

33.—M. A. Howell, Jr. (assignee of J. H. Elward), of Ottawa, Ill., for an Improvement in Mole Plows. Patented Nov. 13, 1860 :

I claim, first, In combination with a plow or machine for purposes of underground draining, a stationary coultter, and a coultter the front edge of which may be moved laterally, for the purpose and substantially as described.

Second, The sections, e d and c, in combination with the coultters, a and b, when arranged as and for the purposes set forth, substantially as described.

Third, The movable coultter, a, in combination with the side draft, as applied at the link or kop at f, on the side of the beam, A, through either of the slots in the transverse piece upon the forward end of the beam, A, for the purposes substantially as set forth and described.

34.—S. H. Ransom & Co, of Albany, N. Y., assignees of Washburn Race, of Seneca Falls, N. Y., for an Improvement in Registers for Stoves. Patented April 4, 1846 :

We claim connecting the expansion rod with the register in the manner substantially as described and for the purpose specified.

35.—C. B. Hoard, of Watertown, N. Y., for an Improved Method of Winding "Timekeepers by Currents of Air. Patented April 3, 1860 :

I claim winding a clock or other timekeeper by means of a current of air produced by a pipe, tube, or other artificial channel, employed for ventilation, or otherwise actuating an air motor.

36.—P. H. Jackson, of New York City, for an Improvement in Ships' Winches. Patented August 7, 1855 :

I claim the pawl, 4, and counterweight, 6, constructed as specified, so that the pawl can be reversed by turning it under the center, 5, and the counterweight will cause the said pawl to act upward on either side of the center, as set forth.

I claim the ratchet wheel, 3, of a windlass or winch, and the reversible pawl, 4, below said wheel, in combination with a double-acting heaver, as specified, by which arrangement a windlass or winch can be rotated in either direction by the use of one ratchet wheel, as described and shown.

I also claim the pawl, a, formed with two arms or points, as set forth, in combination with the socket or plate receiving the handspike or heaver, said pawl being reversible in the manner specified, so that the arm not in action becomes a counterweight to the arm or point taking the ratchet teeth, as set forth.

37.—Suspended.

38.—William Wharton, Jr., of Philadelphia, Pa., for an Improvement in Transferring Cars from one Track to Another. Patented Sept. 18, 1860 :

I claim the employment, in connection with sidings or turnouts on railways, of a supplementary inclined or curved guide rail, in combination with car wheels so constructed as regards the said supplementary rail which is so arranged in respect to the rails of the main track and those of the siding that the wheels may be transferred from the control of the rails on one track to that of the rails of the other, by a lateral thrust caused by the wheels bearing against the side only of the said guide rail, as set forth.

DESIGN.

John Long, of Massillon, Ohio, for a Design for a Cooking Stove.



W. A. H., of R. I.—We have no other knowledge of the heel attachment than that contained in Mr. Aiken's claim.

W. McC., of Miss.—We know of no mode of making the color of polkberries permanent.

J. T., of C. W.—If you want to learn to take photographs, you had better apply to some one familiar with the art to teach you.

T. D. J., of Mich.—Smoke will fall whenever it becomes as cool as the air.

W. F. D., of Mass.—We have known cement cisterns to be used for warm water, and know no reason why they should not be suitable to hold boiling hot water, as cement consists of lime, silica and alumina, calcined.

J. T., of Ill.—We suspect that all others who may try it will find your plan for transferring fur from the natural skin to sheets of india-rubber impracticable as well as yourself.

B. R. E., of Iowa.—Artificial noses have been made by cutting a strip from the forehead and grafting it upon the nose. If you would like to go through this operation, you can apply to some surgeon in your neighborhood. We suppose an artificial bridge could be made of india-rubber, but we do not know of any person engaged in the manufacture.

J. K., of Mass.—Send us your address, and we will forward you our pamphlet of advice to inventors. The tables which you ask for, giving the expansion of different metals with heat, &c., we shall probably publish soon.

W. P. K., of Mass.—Your request to publish an article on church organs will be duly considered. It is a subject in which very few of our readers feel an interest.

W. R., of Me.—We know of no beam engines now in operation with the connecting rod arranged as you propose; but such engines have been described in the earlier works on the steam engine, and we saw one in operation about 20 years ago.

J. M., of Wis.—We do not know of any one who is engaged in manufacturing the patent alarm bedstead of J. C. House. In Vol. XI. No. 4 (old series), you will find an engraving of it, representing a sluggard in the act of being thrown upon the floor by the mechanical attachment of the bedstead.

A. E. T., of Ohio.—The bit of stone you send us is probably quartz, but the piece is not large enough to permit a thorough examination.

R. T., of Pa.—By boiling a piece of cloth composed of cotton and wool for several minutes in moderately diluted sulphuric acid, the cotton will be destroyed, while the wool will scarcely be affected. This is one method that is employed to detect cotton in suspicious woolen fabrics.

B. & S., of C. W.—We advise you to address the Collinsville Company, Collinsville, Conn. They are making cast-steel plows.

H. W. T., of Mass.—We do not believe that the tables you speak of would be of general interest to our readers.

J. F. DeN., of S. C.—By an advertisement in another column you will see that you can get sulphate of ammonia in a crude form for manure from Dodge, Colvill & Oleott, No. 188 Pearl-street, this city.

J. F. H., of Ky.—On page 345, Vol. II. (new series) of the SCIENTIFIC AMERICAN, two processes of extracting aluminum from its ores are described.

A. E. W., of N. Y.—By referring to No. 18, Vol. I. (new series), you will find an engraving and notice of such a plate as you want.

T. C. H., of N. Y.—If you will procure a copy of our recent edition of the Patent Laws you will find all the information you need on the question of the abandonment of an invention. The price of the pamphlet is 25 cents.

J. D. A., of Ohio.—You should put your deed on record before commencing a suit for infringement. By procuring a copy of the Patent Laws and Information published by us (price 25 cents) you will find an answer to your inquiry about the use of patented inventions.

H. G., of Penn.—As you suggest, a tank of water as a target in experiments with artillery might furnish a very accurate measure of the penetrating power of the shot, from the perfectly uniform and homogeneous character of the substance penetrated. But would not the inconvenience resulting from the escape of water through the shot holes be an insuperable objection to the use of such a target?

J. M., of Texas.—It would occupy too much of our space to describe the mode of making stearine candles from tallow, but you will find the process fully described in Moritt's work on soaps and candles, published by Parry & McMillan, of Philadelphia.

W. J. B., of Ala.—The sheet metal which you call "crystallized tin" is sheet iron coated with zinc, and is called "galvanized iron." It is not produced by an acid, as you suppose, but by preparing the sheet iron in a peculiar manner and dipping it into molten zinc. You will find the process fully described on page 269, Vol. XII. (old series), of the SCIENTIFIC AMERICAN.

S. M. L., of Ky.—The fly-wheel of your sawmill to which the pitman is attached does not appear to be properly balanced, and this may account for the jumping of the other wheel and the wear of the journal on the side to which the pitman is attached. Secure a balance weight on the rim of the wheel opposite to the pitman connection, and see what effects will result.

J. McC., of Ala.—Carbon or hard coal is insoluble in acids and all other common solvents. Soapstone is decomposed with muriatic acid, but it is not useful for any purpose known to us except in its solid pure state.

Money Received

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, Feb. 23, 1861:—

- W. F., of Conn., \$30; W. & G., of Fla., \$300; L. G., of La., \$20; L. P., of Conn., \$10; J. A. W., of Miss., \$30; C. D., of N. Y., \$25; E. B., of N. Y., \$57; L. L. K., of Mass., \$58; A. S., of N. Y., \$25; T. C., of Cal., \$35; A. N., of Pa., \$25; C. P. W., of N. Y., \$55; J. O. W., of N. Y., \$58; C. M. L., of Ohio, \$25; J. P. T., of Md., \$55; H. J. H., of Ill., \$25; J. W. & J. S. H., of Ill., \$25; J. B. S., of N. Y., \$25; McC. & B., of Mo., \$25; E. G., of Mass., \$25; W. H. G., of N. Y., \$25; L. S., of Vt., \$55; J. & R., of N. Y., \$30; G. S. C., of Ill., \$30; C. A. W., of Mass., \$30; N. F. M. of R. I., \$20; D. B., of Ill. \$30; J. L., of Mass., \$30; G. W. B., of N. Y., \$30; W. T. A., of Iowa, \$15; S. M. D., of Mass. \$30; C. N. B., of Pa., \$25; I. S., of N. Y., \$20; P. H., of Pa., \$25; W. H. D., of Cal., \$40; C. C., of Ill., \$12; E. B. S., of Conn., \$55; S. M. G., of Vt., \$25; G. G. L., of Del., \$25; W. B. Q., of Ill., \$25; D. F., of N. Y., \$25; J. A. De B., of N. Y., \$25; J. N., of N. Y., \$25; H. P., of N. Y., \$25; J. B. S., of Conn., \$15; L. & W., of N. Y., \$30; J. R. R., of Mass., \$165; J. V., of Mich., \$25; B. R., of Mass., \$25; G. N. C., of Conn., \$25; G. B. B., of Conn., \$30; W. H., of Pa., \$30; H. McC., of Ala., \$30; W. J. P., of N. Y., \$30; W. R., of Wis., \$30; C. T. B., of Mass., \$30; E. H. L., of N. Y., \$10; C. H., of La., \$62; M. A. S., of Ill., \$35; G. & S., of Mass., \$25; J. H. C., of Pa., \$25; J. B. P., of Miss., \$25; D. L., of N. Y., \$25; A. Q., of N. Y., \$30; C. W., of S. C., \$25; G. W. B., of N. Y., \$25; R. & W., of N. Y., \$25.

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Feb. 23, 1861:—

- C. H., of La.; M. A. S., of Ill.; E. G., of Mass.; W. & J., of Mich.; B. R., of Mass.; G. N. C., of Conn.; W. T. A., of Iowa; P. H., of N. Y.; G. W. B., of N. Y.; T. S. W., of Pa.; J. P. T., of Md.; D. F., of N. Y.; A. M. G., of N. H.; A. Q., of N. Y.; A. A., of Ill.; A. L. B., of Mass.; C. N. B., of Pa.; A. N., of Pa.; C. C., of Ill.; E. B. S., of Conn.; D. L., of N. Y.; J. A. De B., of N. Y.; W. H. G., of N. Y.; C. S., of N. Y.; J. N., of N. Y.; R. & W., of N. Y.; H. P., of N. Y.; C. M. L., of Ohio.

New Books and Periodicals Received.

THE MEDICAL AND SURGICAL REPORTER.—S. T. Butler, M. D. and R. J. Lewis, M. D. editors and proprietors, Philadelphia. This valuable publication contains a good deal of information, which is interesting to the non-professional reader as well as that which interests physicians alone.

A COMPREHENSIVE GRAMMAR OF THE ENGLISH LANGUAGE. For the Use of Schools. By Simon Kerl, A. M. New York: Phinney, Blakeman and Mason; Buffalo: Breed, Butler & Co. 1861. This grammar is even worse than Lindley Murray's.

BRYANT AND STRATTON'S COMMERCIAL ARITHMETIC.—New York: Phinney, Blakeman & Mason, No. 61 Walker-street; Buffalo, Breed, Butler & Co., No. 183 Main-street.

There is a great mass of practical information in this book, but the definitions are about as puzzling and difficult of comprehension as it is possible for words to make them.

Important Hints to Our Readers.

BACK NUMBERS AND VOLUMES OF THE SCIENTIFIC AMERICAN.—Volumes I, II, and III (bound or unbound) may be had at this office and from all periodical dealers. Price, bound, \$1.50 per volume; by mail, \$2—which includes 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.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

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IMPORTANT TO INVENTORS.

THE GREAT AMERICAN AND FOREIGN PATENT AGENCY.—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN inform their patrons that they are still engaged in preparing specifications and drawings and attending to the wants of inventors in every department before the Patent Office, such as Extensions, Appeals, Interferences, correcting imperfect papers submitted to the Patent Office by incompetent persons, examining into the novelty of inventions, arguing rejected cases, &c. The long experience Messrs. MUNN & CO. have had in preparing specifications and drawings, extending over a period of sixteen years, has rendered them perfectly conversant with the mode of doing business at the United States Patent Office, and with the general part of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

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 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 Office, are cordially invited to call at their office.

Messrs. MUNN & CO. 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 seven-eighths 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 in Great Britain.

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 the last three Commissioner 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 WAS 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 gratifying testimonial:—

Messrs. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you have discharged your duties of Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you 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.—Gentleman: 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.

Messrs. MUNN & Co. cordially invite persons residing in the city of Patents, to call at their spacious offices, No. 37 Park-row, and examine the models which are on exhibition, or refer to the works of reference contained in their library, access to which can be had at all hours. Inventors can communicate in German, French, Spanish, or nearly any other language, in soliciting information from this office. Circulars of information regarding the procuring of patents, printed in German, may be had on application.

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PECK'S PATENT DROP PRESS.—THE MOST PERFECT machine in use for the manufacture of silver, copper or tinware, spoons, jewelry, forgings, &c. Manufactured by the patentee, M. LO PECK & CO., New Haven, Conn. 10 16*

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2*etw

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EASTERN AND SOUTHERN MARKETS. These lands are contiguous to a railroad 700 miles in length, which connects with other roads, and navigable lakes and rivers, thus affording an unbroken communication with the Eastern and Southern markets.

APPLICATION OF CAPITAL. Thus far, capital and labor have been applied to developing the soil; the great resources of the State in coal and iron are almost untouched. The invariable rule that the mechanical arts flourish best where food and fuel are cheapest, will follow at an early day in Illinois, and in the course of the next ten years the natural laws and necessities of the case warrant the belief that at least five hundred thousand people will be engaged in the State of Illinois in various manufacturing pursuits.

RAILROAD SYSTEM OF ILLINOIS. Over \$100,000,000 of private capital have been expended on the rail roads of Illinois. Inasmuch as part of the income from several of these works, with a valuable public fund in lands, go to diminish the State expenses, the taxes are light, and must, consequently, every day decrease.

THE STATE DEBT. The State debt is only \$10,105,398.14, and, within the last three years has been reduced \$2,959,746.80; and we may reasonably expect that in ten years it will become extinct.

PRESENT POPULATION. The State is rapidly filling up with population; 868,026 persons having been added since 1850, making the present population 1,722,563—a ratio of 102 per cent in ten years.

AGRICULTURAL PRODUCTS. The agricultural products of Illinois are greater than those of any other State. The products sent out during the past year exceeded 1,500,000 tons. The wheat crop of 1860 approaches 35,000,000 of bushels, while the corn crop yields not less than 140,000,000 bushels.

FERTILITY OF THE SOIL. Nowhere can the industrious farmer secure such immediate results for his labor as upon these prairie soils, they being composed of a deep, rich loam, the fertility of which is unsurpassed by any on the globe.

TO ACTUAL CULTIVATORS. Since 1854, the company have sold 1,300,000 acres. They sell only to actual cultivators, and every contract contains an agreement to cultivate. The road has been constructed through these lands at an expense of \$30,000,000. In 1850, the population of the forty-nine counties through which it passes was only 335,593, since which 479,923 have been added, making the whole population 814,891—a gain of 143 per cent.

EVIDENCES OF PROSPERITY. As an evidence of the thrift of the people, it may be stated that 600,000 tons of freight, including 8,600,000 bushels of grain and 250,000 barrels of flour, were forwarded over the line last year.

EDUCATION. Mechanics and working men will find the free school system encouraged by the State, and endowed with a large revenue for the support of schools. Their children can live in sight of the church and schoolhouse and grow with the prosperity of the leading State in the Great Western Empire.

PRICES AND TERMS OF PAYMENT. The prices of these lands vary from \$6 to \$25 per acre, according to location, quality, &c. First-class farming lands sell for about \$10 or \$12 per acre; and the relative expense of subdividing prairie land as compared with woodland is in the ratio of 1 to 10 in favor of the former. The terms of sale for the bulk of these lands will be

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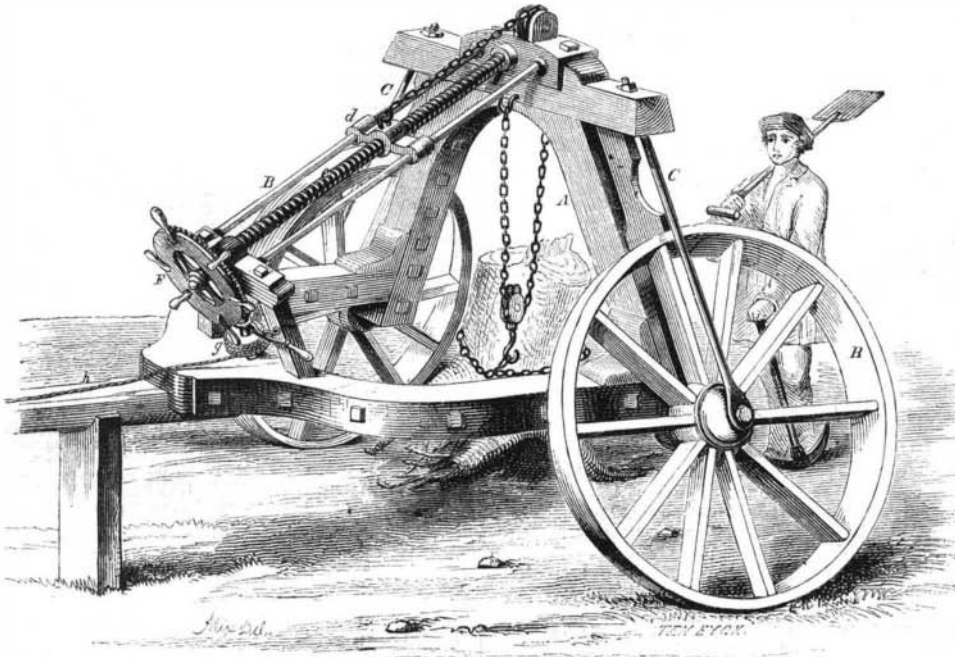
Improved Stump Extractor.

The accompanying engraving represents a stump extractor permanently mounted on wheels, so that as soon as it has performed its work in one place, it is ready to be removed to another; and in which the pulley, screw and lever are combined to multiply the power to any desirable extent. The engraving illustrates the machine in the operation of extracting a stump, but it is equally applicable to raising rocks or other heavy substances. A stout frame, A, is supported on two wheels, B B, which are inclined outward at the bottom, so as to give a broad base to the machine to prevent it from being upset, and to prevent the wheels from interfering with the extracting of the stump. The axles of the wheels are braced at their outer ends by stiff rods, C C, to prevent them from being bent or broken by the great downward pressure upon them. A pulley block is attached to the stump

sufficient for farmers' families generally, and will insure soft water, which is rare in wells. The following are the directions for excavating cisterns: Stake and line out a plat near the building 8 by 10 feet; excavate this one foot in depth; then set the lines in 18 inches on all sides; then excavate all within the lines, or 5 by 15 feet, to the depth of 14 feet in the middle, making the middle level some 9 inches in width, sloping the banks on all the sides and ends to the lines last placed, which will make a section of the pit either way V-shaped, except that nine inches of the bottom will be level. In digging the banks use care not to disturb the soil not thrown out. When the digging is completed, plaster the bottom, the level part, with a good coat of cement mortar, and place a board on it to stand on to do the balance of the work, cutting the board in two equal parts before laying it on the mortar. This done, plaster the entire surface on the

pressure of wind in a tornado, the body of the canvas being rent, while the seams remained entire. We are informed that sewing machines may be readily employed in making sails on this plan; but their use in sewing canvas on the flat seam method is too inconvenient to be advantageous. Capt. Sands' improvement appears to be one of considerable value, and there is a prospect of its extended introduction.

DURING a discussion which recently took place in the New York Legislature respecting the annual appropriation of the curator and taxidermist of the State Cabinet of Natural History, Mr. Chapman, in opposition, said: "When a recent Emperor of Russia came to the throne, he went to reviewing the expenditures of the royal household. Finding a charge for goose oil he investigated it, and learned that some centuries ago some goose oil had been purchased to anoint the nose of a royal baby, since which time an item of goose oil had been included whenever a baby had been born, though none had been used. This curator watching the stars, the stuffed birds, and beasts and aquaria, and the taxidermist belonged to the same category. He had found that \$5,000 were paid yearly for these fossils, &c.; that the State of New York had little stuffing done for several years, and it was but a goose-oil expense after all. For the past year it appears that one stone had been added to the collection, and one duck had been stuffed.



LYONS' IMPROVED STUMP EXTRACTOR.

to be extracted, and through this block passes a chain which is secured to the top of the frame at one end, while the other is led over a roller at the top of the frame and connected to the nut, *d*. Through the nut, *d*, passes the long screw, *e*, which is connected by smooth journals to the frame, and has the hand-wheel, *F*, rigidly secured to its lower end, so that by turning the screw the nut, *d*, and the end of the chain which is attached to it are drawn down, thus raising the stump from the ground. If no very great power is required to raise the stump, the screw, *e*, may be turned by hand; but if the resistance is too great to be thus overcome, then a further multiplication of power is employed to turn the wheel, *F*. To this end, a beveled pinion is arranged to mesh into a beveled gear upon the wheel, *F*, and around the drum, *g*, on the shaft of this pinion is wound the cord, *h*, to which oxen or a horse may be attached, thus turning the wheel, *F*, with very great power. The pinion may be thrown into or out of gear at will. The nut, *d*, is prevented from turning by the smooth rods which pass through its two wings.

The prominent advantages of this machine are its perfect portability (being always mounted on its wheels) and its almost irresistible lifting power.

Application for a patent for this invention has been made through the Scientific American Patent Agency, and further information in relation to it may be obtained by addressing the inventor, J. B. Lyons, 48 Washington street, Baltimore, Md.

Cheap Cisterns and Filters.

The following information on this important topic, taken from the *American Farmer*, is contributed by John Milkinson, landscape gardener and rural architect, and will be found very useful for farmers:—

A cistern of the dimensions that I shall describe will hold one thousand gallons, will cost but eight dollars, and its capacity may be doubled for less than fifty per cent additional cost. One of this size will be found

ground to the lines last named, then remove one-half of the board and stand on the balance and build a four-inch brick wall across the pit, about in the middle, laying the bricks, which should be soft, (common salmon brick), in cement, but plastering neither side. Lay the wall to the line, then remove the balance of the board and put a coat of mortar where it lay. The cistern is now complete save the covering; this may be done by laying plank over the whole bedding, then on the surface of the first excavation in mortar, or splitting logs from the woods and laying them flat side down, and closing the joints with mortar. The pump pipe should be laid into one end and the leader pipe from the house gutter laid into the other before it is covered. This done, return earth enough to cover the surface at least one foot deeper in the middle than the surrounding ground; level it off neatly and sward it, and you have a complete filtering cistern for eight to twelve years.

Improvement in Sails.

We have lately patented for Capt. Wm. A. Sands, a shipmaster of this city, a very simple but highly useful method of sewing canvas together for the sails of ships. Instead of the double flat seam now in common use, Capt. Sands unites the two edges of the canvas by sewing them upon a small rope. Each seam is therefore covered and strengthened by a rope, and the hood lap of canvas no longer necessary. Among the improved results arising from the use of the invention are the following:—The sails of a thirteen hundred-ton ship commonly require 5,300 yards of canvas. By Capt. Sands' improvement a saving of 1,000 yards is effected, only 4,300 yards being necessary. An economy of nearly \$300 is thus effected for material, while the weight of the suit is reduced nearly 5,000 lbs. The ropes render the sail more durable, as they prevent chafing. The sails are also said to be stronger at the seams than the canvas is in its body. This has been exemplified in sails which were burst by the heavy

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