

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 they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they 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 the Branch Office of Messrs. MUNN & CO., corner of F. and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. 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 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 pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. 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.

Patents are now granted for SEVENTEEN years, and the Government fee required on filing an application for a patent is \$15. Other changes in the fees are also made as follows:—

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

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

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

REJECTED APPLICATIONS.

Messrs. MUNN & CO. are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of their Washington Agency to the Patent Office affords them rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Their success in the prosecution of rejected cases has been very great. The principal portion of their 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 MUNN & CO., on the subject giving a brief history of the case, inclosing the official letters, &c.

FOREIGN PATENTS.

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. They think they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their 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 MUNN & CO'S Agency, the requirements of different Government Patent Offices, &c., may be had, gratis, upon application at the principal office, No. 37 Park Row, New York, or any of the branch offices.

SEARCHES OF THE RECORDS.

Having access to all the official records at Washington, pertaining to the sale and transfer of patents, MESSRS. MUNN & CO., are at all times ready to make examinations as to titles, ownership, or assignments of patents. Fees moderate.

INVITATION TO INVENTORS.

Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & CO. They will find a large collection of models (several hundred) of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best arranged in the world. MUNN & CO. wish it to be distinctly understood that they do not speculate or traffic in patents, under any circumstances; but that they devote their whole time and energies to the interests of their clients.

COPIES OF PATENT CLAIMS.

MESSRS. MUNN & CO., having access to all the patents granted since the rebuilding of the Patent Office, after the fire of 1836, can furnish the claims of any patent granted since that date, for \$1.

THE VALIDITY OF PATENTS.

Persons who are about purchasing patent property, or patentees who are about erecting extensive works for manufacturing under their patents, should have their claims examined carefully by competent attorneys, to see if they are not likely to infringe some existing patent, before making large investments. Written opinions on the validity of patents, after careful examination into the facts, can be had for a reasonable remuneration. The price for such services is always settled upon in advance, after knowing the nature of the invention and being informed of the points on which an opinion is so

solicited. For further particulars address MUNN & CO., No. 37 Park Row New York.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are *extended patents*. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

Patents may be extended and preliminary advice obtained, by consulting or writing to MUNN & CO., No. 37 Park Row, New York.

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.

UNCLAIMED MODELS.

Parties sending models to this office on which they decide not to apply for Letters Patent and which they wish preserved, will please to order them returned as early as possible. We cannot engage to retain models more than one year after their receipt, owing to their vast accumulation, and our lack of storeroom. Parties, therefore, who wish to preserve their models should order them returned within one year after sending them to us, to insure their obtaining them. In case an application has been made for a patent the model is in deposit at the Patent office, and cannot be withdrawn.

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.



L. P., of Mass.—We find no errors in your English, but we do not agree with your philosophy. Whether the moon rotates once on its axis during each revolution around the earth has been discussed a good deal, but it is a mere dispute about the meaning of a phrase; all are agreed in regard to the facts. The meanings of words and phrases are determined wholly by use, and as all astronomers say that the moon turns on her axis once during each revolution around the earth, it seems to us that the question is settled.

G. A. E., of Conn.—In forcing water from a small cylinder into a large one, the distances through which the two pistons move are in inverse proportion to their areas. The easiest way to find the area of a circle is to multiply the square of the diameter by .7854. The area of your 3-inch piston is 7, and of your 12-inch 113. Therefore in forcing your small piston down 12 inches, you will raise the larger one 113 : 7 :: 12 : .74, say 3/4ths of an inch.

J. M., of Pa.—The momentum of a moving body is its mass multiplied into its velocity, while the *vis viva* is one-half the mass multiplied into the square of the velocity. Momentum is a mere term employed in certain mathematical processes with no corresponding quantity in nature, but *vis viva* is the actual force exerted by any moving body—the sum of the resistances required to bring the body to a state of rest.

H. H., of Iowa.—Your plan for preventing greenbacks from being stolen by the rebels, by placing the money in a shell and firing from a cannon is very novel. But it might be difficult to find the shell after the discharge, even if you were to mark the range as you propose. Don't you think it would be an improvement to fire downwards, so that the shell would be buried in the ground, then place a stick there?

P. P. J., of Ill.—The white powder is chloride of silver. It can be reduced to pure silver by heating it very hot in a clay crucible in contact with carbonate of soda. If you have no chemical furnace and crucible, send it to Prof. Charles A. Seely, 244 Canal street, this city, who will reduce it for you.

R. E. B., of Mich.—Circus horses run round from left to right as well as from right to left. Mill horses generally go with the sun because it is most convenient to drive them that way, and because that is the way that machinery is usually constructed to run.

L. B., of Pa.—Hundreds of small oscillating engines have been made on the plan you propose. It was patented years ago.

O. L., of N. H.—Address H. C. Baird, 406 Walnut street, Philadelphia, for a work on optics.

P. B. S., of Maine.—The area of your two 20-inch cylinders is not equal to one 40-inch cylinder, therefore they have not so much power as the single engine.

B. B. G., of Conn.—The connecting rod is generally made 2 1/2 times the length of the stroke where practicable, but circumstances alter cases, and any length will answer.

T. M., of —A cubic foot of cast-iron weighs 450.55 pounds, of wrought iron 486.65, brass 537.75, and fresh water 62.5.

C. M., of Mass.—A tin vessel to hold one gallon beer measure should measure as follows:—Diameter of top 3 1/4, of the bottom 8 1/2 inches, height 7 1/2 inches.

T. P. M., of Ill.—The area of a 19 5/8th inches circle is 302.489 square inches.

R. W. B., of Conn.—Common plumbers solder is lead two and tin one part.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Sept. 23, 1864, to Wednesday, Oct. 5, 1864:—

E. P., of Ill., \$20; W. T. M., of N. Y., \$81; W. W. L., of Ill., \$20; D. I. S., of N. Y., \$15; A. B. R., of Iowa, \$20; H. G. D., of Ky., \$40; G. W., of Mass., \$15; L. A., of N. Y., \$40; J. P. J., of Ill., \$20; M. & R., of N. Y., \$31; L. M. D., of N. Y., \$20; J. P. W., of N. Y., \$20; H. M. S., of Ohio, \$30; D. H. S., of Conn., \$30; A. R., of Wis., \$25; E. B., of Pa., \$15; S. J. A., of Vt., \$35; S. R. B., of Pa., \$191; W. T., of Ill., \$20; S. R., of Pa., \$15; H. J. D., of N. Y., \$30; G. C. B., of Ill., \$16; R. P., of Iowa, \$40; W. B., of Iowa, \$16; J. H. G., of Ohio, \$16; J. J. S., of Conn., \$20; R. W. R. and others, of N. Y., \$15; G. D. H., of Ill., \$45; R. S., of Canada, \$500; J. A., of Ill., \$20; G. M. M., of Pa., \$50; A. P. Jr., of Vt., \$35; J. P., of Ill., \$20; J. S., of N. Y., \$15; W. J. O., of N. Y., \$20; E. R., of Mich., \$45; J. A. M., of N. Y., \$40; S. A. M., of Ohio, \$25; C. B. H., of Ill., \$15; W. S., of Mich., \$15; F. H., of Ill., \$25; S. M. S., of Iowa, \$16; P. B., of N. J., \$15; H. F. B., of Mo., \$15; T. H. W., of Pa., \$100; W. H. M., of Conn., \$15; P. C., of Pa., \$15; E. H., of Ill.; J. A. C., of Mo., \$20; J. P. H., of N. Y., \$25; W. S. N., of Mo., \$45; J. A. M., of Ill., \$20; R. E. B., of Mich., \$20; J. M., of Mass., \$20; H. W. B., of N. Y., \$20; J. F. M., of N. Y., \$40; F. J. of N. Y., \$40; S. & T., of Ohio, \$20; C. H. R., of Maine, \$20; R. E. C., of N. Y., \$31; C. R. O., of N. Y., \$20; F. L., of N. Y., \$15; O. L. B., of Wis., \$25; A. P. V., of Pa., \$16; L. L., of N. Y., \$25; C. H. B., of Mass., \$15; G. D. T., of N. Y., \$20; C. C. B., of Iowa, \$15; J. A. C., of R. I., \$30; O. E. R., of Minn., \$10; G. F. M., of Ohio, \$25; J. H., of N. Y., \$15; D. W. G., of N. Y., \$15; F. W. F., of N. Y., \$25.

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, stating the amount and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office, from Wednesday, Sept. 23, 1864, to Wednesday, Oct. 5, 1864:— W. T. M., of N. Y. (2 cases); F. J., of N. Y.; F. W. F., of N. Y.; S. J. A., of Maine; H. M. S., of Ohio; H. W., of Ohio; J. G., of Pa.; G. F. M., of Ohio; J. F. M., of N. Y.; L. A., of N. Y.; Z. W., of N. Y.; O. L. B., of Wis.; J. M. S., of N. Y.; A. P., of Wis.; J. A. C., of R. I.; A. P. Jr., of Vt.; J. P. H., of N. Y.; F. H., of Ill.; L. L., of N. Y.; Miss S. A. M., of Ohio; W. T., of Ill.; J. E. S., of N. Y.; C. C. B., of Iowa; H. J. D., of N. Y.; R. P., of Iowa.

RATES OF ADVERTISING.

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

OFFICE OF ARMY CLOTHING AND EQUIPAGE, Twelfth and Girard streets, Philadelphia, Oct. 2d, 1864.

SEALED PROPOSALS WILL BE RECEIVED AT this Office until 12 o'clock, M., on Monday, the 10th instant, for supplying the Schuylkill Arsenal with the following articles:—

- Trousers, sky-blue, for mounted men, army standard.
- Do do do do do do
- Drawers, cotton flannel, army standard.
- Woolen Stockings, do do
- Bootees, large size, 10s to 14s, do do
- Water-proof ponchos, for shelter tents for horsemen, gutta-percha or india-rubber, army standard.
- Water-proof blankets, for infantry, army standard.
- Uniform felt hats, Nos. 2, 3, 4, 5, 6, do do
- Coat buttons, do do
- Shirt buttons, do do
- Green worsted lace, 1 1/2 inch, do do
- Blocking twine, do do
- Axe slings, do do
- Hatchet slings, do do
- National colors, infantry, do do
- Regimental colors, infantry, do do
- Regimental index books, do do
- Regimental order books, do do
- Hat cords and tassels, artillery, do do
- White Williamsantic cotton, No. 24, sample required
- Black wadding, do do
- Red banding, do do
- White bunting, do do
- Scarlet facings, cloth, do do
- Sky-blue cloth, do do

Also, for prisoners of war, woolen blankets of low grades, samples required.

Samples of such articles as are required to be of army standard, can be seen at this office.

Each bid must be guaranteed by two responsible persons, whose signatures must be appended to the guarantee, and certified to, as being good and sufficient security for the amount involved, by some public functionary of the United States.

Bids from defaulting contractors, and those that do not fully comply with the requirements of this advertisement, will not be considered.

Blank forms for proposals, embracing the terms of the guarantees required on each bid, can be had on application at this office, and none others which do not embrace this guarantee will be considered, nor will any proposal be considered which does not strictly conform to the requirements therein stated.

The bids will state the number or quantity of each kind of article proposed to be delivered.

Bids must be endorsed "Proposals for Army Supplies," stating the particular article bid for.

Col. ALEX. J. PERRY, Quartermaster's Department, U. S. Army.

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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 used. We wish it understood, however, that no second-hand or poor engravings, such as patentees often get executed by inexperienced artists for printing circulars and handbills from, can be admitted into these pages.

MUNN & CO., Publrs. of the SCIENTIFIC AMERICAN, No. 37 Park Row, New York City.

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SCOTCH GLASS TUBES, STEAM AND WATER Gages for sale. E. BROWN, 311 Walnut street, Philadelphia.

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Tide-water Elevator.

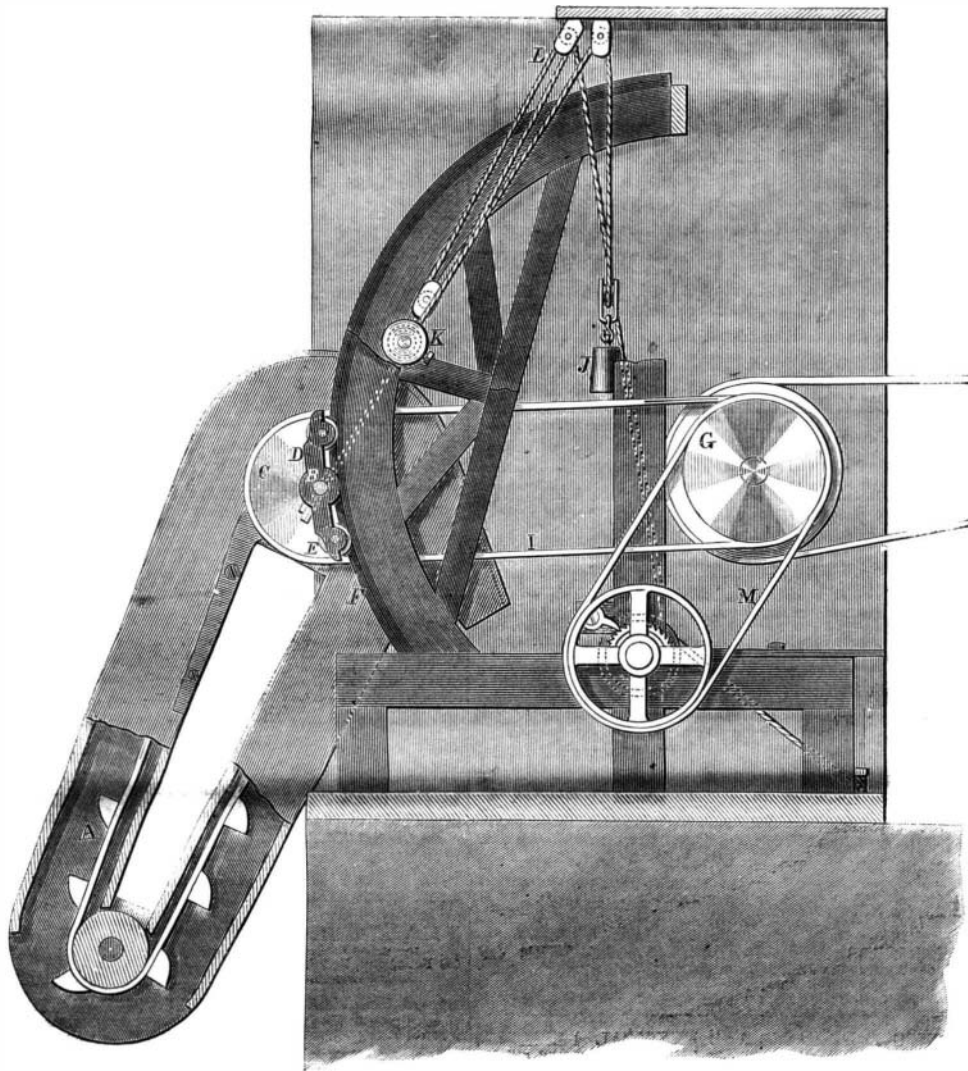
The ordinary grain elevators used in seaports where the tide rises and falls, are constructed with belt tighteners, so that the driving belt can be lengthened or shortened as the level of the water rises or falls. This is an objectionable feature, and the arrangement shown herewith obviates the use of such fixtures entirely. The construction of it is as follows:—The elevator, A, is of the ordinary kind, but the shaft, B, of the pulley, C, has a yoke on it which contains a pair of small rollers, E. These rollers or wheels run upon the track, F, the circle of which is described from the center of the main shaft, G. As the belt on the pulley draws together, naturally, it serves to keep the wheels on the track, and the track itself being struck from the center of the main shaft

crouscyclever than some of the inventions which have of late years been introduced into this country from the West. The process of making common pails by machinery is so rapid as to baffle the eye, and so comically instantaneous that the stranger who witnesses it for the first time, laughs over it as a most excellent practical joke. There is a whizz of revolving wheels, a sputter of light shavings, a procession of little staves chasing one another in the air, then another whizz of the collected staves, and the bucket is hooped and made. Scarcely less amusing is the little mechanical device for paring apples by machinery. The machinery is the veriest toy—simple and cheap—but it brings off the rind with an almost magical delicacy, and while it pares the fruit with an accuracy which seems to bespeak a special sense of

with wooden hands, his cows are milked by the patent cow-milker, his potatoes as well as his apples are pared by one of the queerest little steel kitchen-maids, who has no "followers," and who wastes none of the fruit; and even his chairs, his tables, and his cabinet work in general, come from manufactories large as our cotton mills, where they are returned out in parts by swift-moving machinery.—*Dundee (Scotland) Advertiser.*

THE DEATH OF CAPT. SPEKE.—The English mails received by the *Asia* bring full particulars of the death of Capt. Speke, the African explorer. He was suddenly killed on the 15th ult., by the accidental discharge of his own gun, while shooting in the neighborhood of Corsham, Wilts. The charge passed through his chest close to his heart, and he died in ten minutes. His age was thirty-eight years. The remains were conveyed to his father's home at Ilminster. It is understood that Capt. Speke, at the time of his death, was preparing for another expedition in the direction of the Nile's source.

THE COTTON SUPPLY NEARLY RESTORED.—The *London Times* says that the cotton imported into England in 1860, amounted to 3,368,000 bales—this year it will be from 2,700,000 to 3,000,000.



MOULTON'S TIDE-WATER ELEVATOR.

permits the elevator to rise and fall without altering the length of the belt, I, in any respect. The weight, J, serves to balance the elevator, the shaft of which is suspended from the yoke, K, and has arms in it which the bearings of the shaft run in. By means of the block and tackle, L, the elevator can be raised and secured at any height desirable. This operation is aided by the belt, M, passing over the pulley which can be thrown in or out of gear to raise the elevator, as desired.

A patent was granted on this arrangement through the Scientific American Patent Agency on the 21st of June, 1864. For further information address the inventor, J. T. Moulton, Box 2,036, Chicago, Ill. or C. H. Merry, Dunleith, Ill.

American Invention.

No people are so full of ingenious little expedients for saving labor and material as are the Americans. The force of circumstances has made the Yankees a master in the art of extemporizing little "dodges" in mechanism. Self-help is the great lesson a man receives when he sets foot in a new country, and it is in the invention of helps in metal and wood—helps which need no wages, and which never strike, or tire, or grow sick—that the New Englander excels.

There is nothing out of a pantomime more ludi-

touch, it slices the apple and takes out the core at the same time.

Success in such small matters has made the American bold, and has trained him to habits of innovation. So far from dreading novelty, he likes novelty for its own sake, and to secure it, he often reverses our way of doing things. In his steamboats he builds up the cabins tier over tier upon deck, instead of below, and he suffers the engine to work high in air above the many stories of cabins. When he wants to put another story to a great building, he adds the new floor at the bottom instead of at the top; and be it a bank, hotel or huge store, he is ready at your command either to lift the entire block or to slide it on its travels to a more eligible location.

In printing newspapers he builds his type upon cylinders instead of laying it upon the slow-working table, and he makes the machine pick up and take off its own printed copies with a regularity and neatness which no number of trained hands can equal. His gunboats are floating martello towers, that can fire fore and aft as readily as from the side. His river steamers are amphibious, and may go anywhere where it is a little damp. He is partial to machinery because it does not grumble, is not impudent, is not extortionate; and hence it comes that his crops are gathered with patent reapers, his linen is washed

THE
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FOR 1864!
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