

caution for a patent is reduced from \$30 down to \$15. Other changes in the fees are also made as follows —

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 (but in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen 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 at least TWENTY 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.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted are invited to correspond with us on the subject, giving a brief story of the case, inclosing the official letters, &c.



T. M. McG., of N. Y.—You had better send for a boiler-maker and have him examine your furnace. He can tell better than we can, at this distance, what you require.

P. S., of Maine.—You should be very careful and have all the joints of your condenser air-tight. Take a lighted lamp and hold it up to suspected parts, and if the flame is forced in by the atmospheric pressure you may be sure that your vacuum will be impaired.

H. W., of Conn.—Albata is a name given to an alloy of nickel, and it is employed for making inferior tea-spoons, to imitate silver. It is composed of copper, 15 parts; nickel, 5 parts; zinc, 5 parts.

H. W., of N. Y.—The amount of grate surface required in a boiler depends entirely upon the draft. In a locomotive, for six inches square of grate surface the evaporation is one cubic foot of water per hour—one horse-power. In stationary and marine engines one square foot of grate surface is allowed for each horse-power.

J. W., of N. Y.—All soaps are not suitable for washing. Lime water and olive oil form an insoluble soap totally unfit for washing purposes. A caustic alkali is necessary for the manufacture of washing soap; soda makes a hard and potash a soft soap with grease or oil.

G. A. F., of Ohio.—We have never heard that any European Government has offered a reward for the invention of an auger to bore a square hole.

Y. and A., of Cal.—Bound volumes of the SCIENTIFIC AMERICAN, if sent to you by mail, will cost three dollars per volume.

E. C. E., of Ohio.—We have carefully examined the sketch of your alleged improvement in projectiles, and it is a singular fact, that within the past three weeks we have received, from an American citizen in China, the same thing. We think well of the plan and should like to see it thoroughly tried.

S. L. M., of Conn.—We cannot tell you when wooden screws were first made in this country. They are extensively manufactured in Providence, R. I.

D. D. & Co., of Pa.—We do not sell the blind slat tenoning machine to which you refer. You had better write to S. C. Hill, No. 12 Platt street, this city, in regard to it. We do not deal in any kind of machinery.

J. B., of Pa.—Take your piston out and scrape the rings steam tight; that is better than to grind them in with emery. The latter substance gets in the pores of the iron and frequently ruins the cylinder.

F. D. D., of Ohio.—The old papers to which you refer will be of no value to us. In reference to marbleizing the front of the building to which you refer, we can furnish you with no receipt for preparing a stucco which shall imitate marble. The imitation is produced on the face of the stucco by the skillful use of paint. It needs a practiced hand to do it properly.

S. K. S., of Pa.—The Canadian Patent Bill to which we referred does not contemplate the granting of patents to those who have already secured them in this country. We fear the bill will not pass this season as Parliament is prorogued in consequence of the defeat of the ministry.

J. W., of Pa.—Picric acid is obtained by treating phenole with strong nitric acid. It is employed for dyeing yellow on silk, by first impregnating the silk with alum, then immersing it for a short period in a solution of the picric acid. An admixture of picric acid and indigo forms a beautiful green color on silk.

R. McC., of C. W.—Gutta-percha or india-rubber cement is well adapted for stopping leaks in the floors of piazzas, roofs, &c., but if you cover it with a coat of oil paint it will become soft and mix with the paint, as the oil dissolves the gutta-percha.

J. R. K., of Ohio.—We do not know what is the best known mode of swinging horses, but perhaps some of our readers may be able to inform you. We think such horses ought to be hung up by the neck. The cost of binding the SCIENTIFIC AMERICAN is 75 cents per volume.

T. H., of Pa.—Innumerable plans of aerial ships have been sent to us, which, like yours, we have not thought proper to notice. It will afford us pleasure to record the voyage of the first successful one—hoping it may be yours.

J. B. S., of Mass.—We have never seen the photograph of a cannon ball taken while in motion, but we have seen a great many such balls in the pictures of battle scenes. Great allowance must be made for the remarkable visionary powers of the artists who design such pictures.

S. V., of Mass.—The Bramah press is called the hydrostatic (not hydraulic) press, because it operates by the pressure of water.

C. H. C., of Conn.—Some Jonval turbine wheels have given out more power with the same quantity of water than overshot wheels. You will find full information respecting trials to test the power of turbine wheels on page 164, current volume of the SCIENTIFIC AMERICAN.

J. H. W., of Ohio.—Common hydraulic cement will stop the leaks in your aquarium; so will a cement of molten pitch.

A. H. N., of Ind.—If your patent does not cover all that you desire and have a right now to claim, you can surrender the original patent and obtain a re-issue. You cannot claim under an application for a re-issue what is not already contained in your model in the Patent Office. Our pamphlet, a copy of which we will send you, explains the subject of re-issue.

R. M., of Ohio.—If you use Giffard's injector you will not require any feed-pump.

R. H. J., of Iowa.—If you have invented a convenient power which can be economically used for driving sewing machines, churn machines, washing machines, &c., we think it would find a ready sale, as such an apparatus is much wanted. In the absence of a suitable description of it, we can express no opinion respecting its merits.

M. P. & Co., of Conn.—The specimen of your mode of addressing newspapers seems to be an improvement over the method now in use for that purpose, and if the apparatus is simple it will meet approval. We shall be glad to see the machine in operation. The demand for labor-saving machinery of all kinds must be increased in proportion as men are drawn from industrial pursuits into the military service.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, May 13, to Wednesday, May 20, 1863:—

- L. B., of N. J., \$25; V. D., of Pa., \$50; J. A. & L. Van R., of N. Y., \$36; T. O., of Mass., \$100; G. R. J., of N. Y., \$49; R. K., of Mass., \$20; H. Van Dew., of Mass., \$20; D. D., of N. Y., \$20; J. A. W., of Wis., \$20; A. & W., of N. Y., \$16; G. W. L., of N. Y., \$47; S. M. B., of N. Y., \$16; A. J. G., of Mass., \$39; M. H. S., of N. Y., \$20; G. P. H., of N. Y., \$20; J. B., of Ill., \$16; J. H. A., of Mich., \$15; S. D. G., of N. Y., \$25; R. P. P., of N. J., \$25; A. W., of N. Y., \$100; G. H. F., of N. Y., \$10; A. S., of Ill., \$16; L. M., of N. Y., \$20; M. & K., of Ill., \$10; A. C., of Pa., \$35; W. F., of Mo., \$25; G. H. D., of N. Y., \$15; L. & W., of N. Y., \$250; C. W. S., of N. Y., \$250; O. P., of Vt., \$25; E. H. J., of Ohio, \$25; L. J., of France, \$25; J. B., of N. Y., \$29; J. D., of N. Y., \$30; L. C., of N. Y., \$28; H. U., of Conn., \$20; T. H., of N. Y., \$20; E. H., of Mass., \$20; H. T., of N. J., \$45; S. J. S., of N. Y., \$20; R. Q., of N. Y., \$41; A. H. P., of Iowa, \$20; G. H. R., of N. Y., \$16; R. & W. K., of Mass., \$44; H. W. B., of Ohio, \$63; M. A. D., of Mich., \$20; A. & S., of N. Y., \$10; A. B., of Vt., \$16; M. M. & Co., of Ind., \$30; G. M., of N. H., \$25; J. McC., of N. Y., \$28; J. W. K., of Mass., \$16; T. W., of Mass., \$30; F. W. H., of Canada, \$250; E. G. H., of Mass., \$16; W. N., of N. Y., \$29; J. G., of R. I., \$25; E. C. B., of Cal., \$50; M. A. J., of Mass., \$16; J. B. R., of N. Y., \$300; G. & T., of N. Y., \$373; W. B. R., of Mich., \$16; H. W., of N. Y., \$25; E. A., of N. J., \$35; L. B., of N. Y., \$25; A. F. T., of N. Y., \$45; W. M., of N. Y., \$16; G. L. T., of Mass., \$10; A. C., of Cal., \$16; G. G., of Ill., \$20; D. L. D., of N. Y., \$16; W. K. L., of Mass., \$20; H. & S., of Pa., \$20; T. R. T., of N. Y., \$16; W. P., of N. Y., \$16; V. & W., of Wis., \$20; G. T., of N. Y., \$16; A. W., of Iowa, \$16; G. H. M., of Ind., \$15; S. F. L., of Wis., \$20; S. M. & Bros., of Pa., \$20; A. S. L., of N. Y., \$372; C. R., of Mich., \$15; G. L., of N. J., \$25; D. R., of N. Y., \$25; J. & J., of Mich., \$16; A. C. T., of N. Y., \$25; A. J. A., of Ill., \$16; J. V. D., & Co., of Va., \$25; Z. S., of Wis., \$30; G. R. B., of R. I., \$16; E. P. H., of Mass., \$16; B. L., of Vt., \$35.

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 Wednesday, May 13, to Wednesday, May 20, 1863:—

- L. B., of N. J.; J. B., of N. Y.; E. A., of N. Y.; V. D., of Pa. (2 cases); J. J. D., of N. Y.; L. B., of N. Y.; J. A. & L. Van R., of N. Y.; L. C., of N. Y.; B. and B., of N. Y.; R. Q., of N. Y.; R. and W. K., of Mass.; A. J. G., of Mass.; O. P., of Vt.; H. and R., of Ohio; J. G., of R. I.; T. and S., of N. Y.; W. F., of Mo.; O. N., of N. Y.; G. H., of N. Y.; E. H. J., of Ill.; J. and S., of Wis.; A. C., of Pa.; J. C., of Ohio; J. D. P., of N. J.; G. M., of N. H.; S. F. L., of Wis.; S. G., of N. Y.; J. McC., of N. Y.; D. M., of Ind.; H. W., of N. Y.; G. L., of N. J.; L. J., of France; B. L., of Vt.; M. and K., of Ill.; T. W., of Mass.; D. R., of N. Y.

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Twenty-five Cents per line for each and every insertion, payable in advance. To enable all to understand how to compute the amount they must send in when they wish advertisements inserted, 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.

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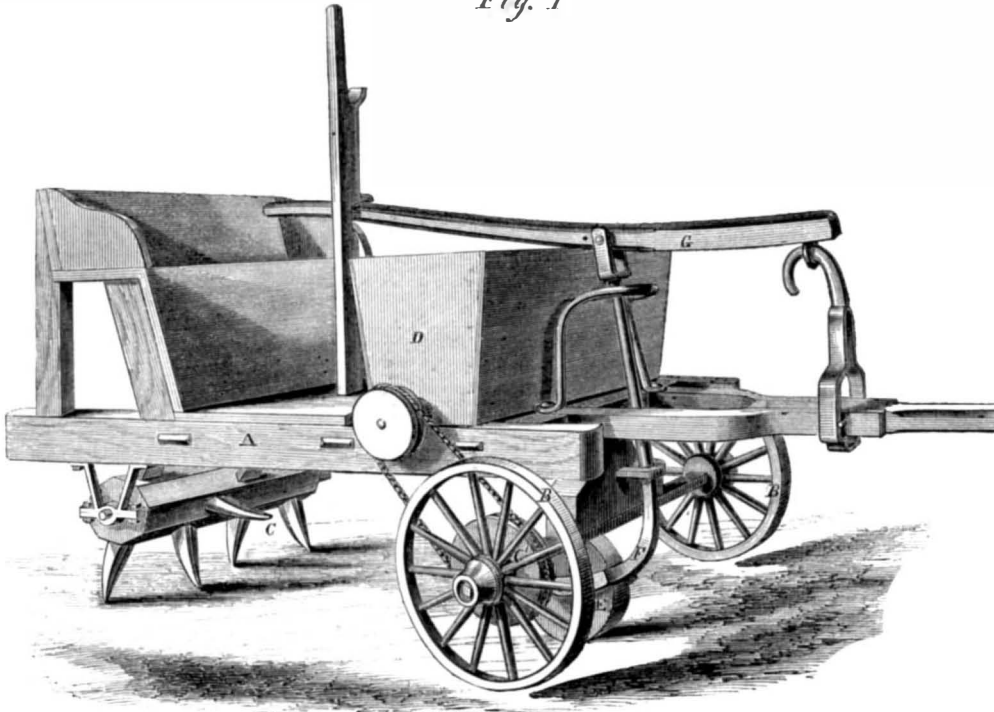
Improved Seed Drill.

Herewith we illustrate a novel, and it would appear an effective seeding machine. It consists of the frame, A, supported on the wheels, B, and the cultivator teeth, C, behind. The main axle forward has a pulley, C', on it, which carries a band passing over the seeding apparatus contained in the box, D. At E may be seen a pulley attached to the gooseneck, F, and connected with the lever, G, by forked jaws. Fig. 2, shows the arrangement of the seeding device which is as follows: The box, D, is provided internally with another one, H, in which the seed is

popularity of his machine, and we propose to let him tell his story in his own way:—

"Allow me to tender to you my sincere thanks for the able, skillful, and honest manner in which you conducted my business with the Patent Office. You have made for me a fortune which without your aid, would doubtless never have been realized. I shall not fail to recommend your most excellent paper, the SCIENTIFIC AMERICAN, to all with whom I associate, and I would direct every poor disappointed inventor to your Agency as the star of his hope. I have two other cases, which I shall send to you soon.

Fig. 1



UNDERWOOD'S PATENT SEED DRILL.

d. In the bottom of this box there are square openings, I, which communicate with A cells, J, in the cylinder, K. The operation follows: When the team is started, the seeding under revolves by the action of the belt upon it; each cell passes the aperture, a certain quantity of grain falls into it which is deposited on the ground as the machine advances. The cultivator following behind, cover the seed in. When

My machine takes like 'hot cakes' wherever it has been introduced."

This invention was patented on Oct. 21, 1862; further information may be had by addressing the patentee, J. A. Underwood, Oskaloosa, Iowa.

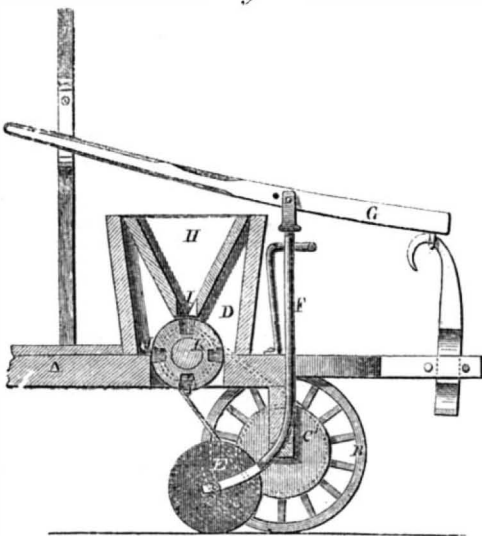
The Great West.

In the last ten years there have been built at the West 3,656 miles of railroad, at a cost of \$254,720,364, mostly by Eastern or imported capital. The Illinois Central Railroad Company alone sent into Illinois \$30,000,000, and built a road which enabled the Federal Government to sell \$11,000,000 worth of land, and the company to sell \$20,000,000 more to actual settlers, making over \$61,000,000 concentrated in that State by the operations of one company. The chief effect of this has been to swell the aggregate receipts of grain at Chicago, during the ten years to 158,544,554 bushels, which, at an average price of 66 cents per bushel (the value for 1860 at Chicago), would be worth \$126,000,000, thus exceeding by \$31,000,000 the cost of the railroads, through the agency of which the grain was made available. In 1861 the quantity of grain increased to 47,697,409 bushels; the Southern route being closed, and in 1862 the amount was 60,150,390 bushels. These figures but indicate the extent of that prosperity which has developed so rapidly during the last ten years in the northern sections of the West.

Current Rates of Wages.

The exorbitant prices of food and all the necessities of life have caused a corresponding advance in the amount of wages paid to the working classes. Very many strikes and combinations have taken place and are still going forward, urged by all the zeal which the malcontents possess. We are not of those who foresee any special permanent advantages likely to accrue to Workingmen's Societies as they have always been conducted in this country; but we hope sincerely that all who are in want will have their necessities looked into and their demands complied with, provided that they are not unreasonable.

Fig. 2



the machine turns a corner at the end of the field, the seeding device is thrown out of gear by the lever, G. By bearing down upon the end near the driver the weight of the machine is thrown on the wheel, E, and the machine can then be turned around and another row planted. The teeth may be of any desired form. In the engraving the machine is shown ready to turn.

The inventor has—far more graphically than we could do it—spoken in the following terms of the

Machinists in this city are now receiving from 30 to 50 cents more per day than before the inflated prices of living came in. Blacksmiths are receiving from 40 to 60 cents more per day; boiler-makers the same; ship-carpenters about the same, and in fact nearly every trade has had its standard of pay much increased of late, as is right and proper under the circumstances.

W. H. GOODHUE, U. S. Vice Consul at Zanzibar, reports that the expedition of Captains Speke and Grant, in search of the sources of the Nile, has resulted in the discovery of the Mirerango river—the first certain leading branch of the Nile—which takes its rise in Lake Victoria Majanza, a lake discovered by Captain Speke while engaged in another expedition of African discovery a few years since.



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To the Inventor!

The SCIENTIFIC AMERICAN is indispensable to every inventor as it not only contains illustrated descriptions of nearly all the best inventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history of the progress of inventions in this country. We are also receiving, every week, the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in mechanical science and art in those old countries. We shall continue to transfer to our columns copious extracts from those journals of whatever we may deem of interest to our readers.

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