

Notes & Queries.

J. C. W., of Ill.—There are no obstacles to steam engine taking the place of horses for hauling on common roads, except the greater cost for machinery and expense in working. It is held as an opinion by several who have investigated the subject, that on almost any road which will pay for the expense and operation of a steam engine, a greater gain will ultimately be secured by laying down a track of rails. On any road well-paved with smooth blocks, we believe that a hauling steam engine could be operated with success.

P. A. W., of La.—Silver which is deposited on copper by the galvanic current simply adheres by the force of electrical affinity to the surface, and does not enter the pores of the metal like fire-plated silver. In soldering electro-plated copper or tin plates, the silver is liable to blister, because its heat-conducting power is different from the metal on which it is deposited. There is no way known to us for preventing this. If you should discover some method of cold soldering, you would secure the desired result.

J. O. G., of Mo.—The best black paint which you can use for engines is composed of boiled linseed oil and lampblack. After a coat of it has become perfectly dry on the metal, then put a coat of black asphalt varnish on the top of it, and a fine glossy surface will be obtained.

J. M., of Ill.—The best paint which you can use for a brick house, to prevent damp from striking through, is some mineral pigment of the color most suitable to your taste, mixed with good linseed oil. It is the oil, and not the pigment, which forms the protective coating. We have never seen a whitewash that would not ultimately come off with rain; but if you mix some skim or sweet milk, salt and a small quantity of molasses with lime whitewash (when cold), it will be rendered more durable than when used in the common manner.

J. P. L., of Va.—In Belgian coal mines, and some mines in England, as well as one or two in Pennsylvania, fans are employed for ventilating. You will find an article containing the description of a fan in an English mine on page 285, Vol. XII. (old series), SCIENTIFIC AMERICAN. Also, the description of a fan employed in a coal mine at Phoenixville, Pa., on page 267 of the same volume.

F. J. L., of Conn.—The statement to which you refer, regarding deodorized alcohol, was made at the meeting of the Polytechnic Association, and so reported in our columns. All crude alcoholic liquors may be purified by filtration through charcoal.

W. D. W., of Iowa.—Cast steel will stand a greater pressure than wrought iron, when made into a gun-barrel. We have heard of a rifle doing good execution at 1,100 yards. The leaves of the rhubarb plant are not poisonous, so far as we know.

A. P. C., of N. Y.—There is no power lost by the crank in a steam engine. You will find this subject illustrated and described on page 285, Vol. XIV. (old series), SCIENTIFIC AMERICAN. Also, on page 29 of the same volume.

E. T. A., of Ohio.—The shining yellow particles which you send us are mica, which may be known by its splitting into very thin scales.

C. T. M., of S. C.—The strings of your guitar, though called "catgut," are really made from the intestines of sheep. It is said that the "purring pussy" makes all her music before she dies. Why this article should have been called "catgut" has puzzled antiquarians to find out.

F. B., of N. Y.—"All the points in the perimeter of a wagon wheel rolling over a plane" do not "move with the same rapidity, at the same time."

R. C. B., of Ill.—Your article is received and will soon appear.

G. H., of Miss.—Your beer seed is being examined.

J. M. L., of Ind.—The substance which you send us is sand, composed of the ingredients of granite—mica, quartz and feldspar.

W. & S., of Va.—Various opinions are expressed in regard to the extent of surface which a lightning rod will protect. The rule has been laid down that it is a circle, the radius of which is equal to the square of the height of the rod. We have never seen any account of experiments proving the correctness of this statement, and we have no idea that it has ever been determined. Probably it would vary with circumstances. We should venture the opinion, though not very confidently, that in the case which you cite there are points enough.

B. F. H., of Ohio.—Several plans are in use for consuming the smoke of furnaces, and, in England, there is a penalty attached to the escape of smoke from all manufactories, so that it must be consumed in all the furnaces of that country. By consuming the smoke of furnaces, a nuisance is abated and a considerable saving of fuel is effected. The common plan of burning, is to pass it over a highly-heated surface, and to provide a sufficient quantity of warm air for the perfect combustion of the carbon.

H. K., of Minn.—The velocity of a body falling one foot, near the surface of the earth, is at the rate of 8 feet per second; but the velocity of water passing through a notch, under one foot of head, is only 5.1 feet per second. As the velocities of falling bodies are as the square roots of the heights, multiply the square root of the height of your fall by 5.1, and you will obtain the velocity of the water. Multiply this by the area of the opening, in square inches, and you will obtain the number of cubic inches of water which pass through in a second. As your weir-board is 2 inches deep and 48 inches wide, only 96 cubic inches will flow over it per second. We cannot recommend any wheel for your 2-inch fall.

C. C., of Texas.—You had better write to some scale-maker in this city for what you want. This is the best course for you to adopt. Address F. E. Howe, Jr.; he can furnish you with a good scale.

J. C. H., of Cal.—We have no recent information to communicate in regard to Dr. Collyer's straw paper.

G. W. T., of Mass.—It will be very easy for you to find out whether large and small shot, in quantity, and bulk for bulk, are the heavier. Take a pint of each and weigh them.

W. D., of Pa.—Your article is received, and is under examination.

J. A. J., of N. Y.—Oiled silk is manufactured by coating it with some quick-drying boiled oil, and drying it in a warm room. Two or three successive coats are sometimes put on, each being perfectly dried in succession.

J. P. S., of Ky.—You can get a copy of the drawing of Whitney's old gin from the Patent Office, we believe. It was patented in October, 1793.

S. S. R., of Tenn.—All the barrels of the best quality of double shot guns that we have examined were made in Birmingham, England. You can obtain a copy of Dr. Maynard's patent from the Patent Office; this is the only sure way of getting at the information which you want. Percussion caps and powder are made with fulminating mercury; also with chlorate of potash. Copal varnish for the caps is made by dissolving roasted gum copal in boiling linseed oil. The fulminate of mercury is generally mixed with some niter and sulphur for percussion caps. Ericsson engines of 10 horse-power have been constructed; they are about as heavy as a steam engine, boiler and all, of the same power. We do not know where you can obtain the teeth or springs used in music boxes.

MONEY RECEIVED

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, June 2, 1860:—

- J. N. J., of Mass., \$25; J. B., of Ill., \$25; T. C. H., of Ga., \$30;
- J. M., of N. Y., \$90; W. J. C., of Ga., \$35; J. S. L., of La., \$25; J. L., of N. Y., \$30; W. H. P., of Wis., \$30; J. R. L., of N. Y., \$100;
- W. H. D., of N. Y., \$30; E. D. C., of Conn., \$30; Z. D., of Ga., \$30;
- R. S. W., of Ga., \$35; J. S., of Ga., \$10; E. B. & T. S. P., of N. Y., \$30; C. A. B., of Vt., \$25; H. P. C., of Mich., \$40; E. R., of N. H., \$35; T. F., of N. Y., \$35; J. H. B., of N. Y., \$30; E. K. H., of N. Y., \$25; A. P. T., of Ga., \$20; J. M. D., of Ill., \$35; A. De W., of N. Y., \$38; D. & M., of Va., \$25; E. B., of Ga., \$23; G. W. H., of Ill., \$30; J. B. F., of Ohio, \$30; E. S. C., of Mass., \$30; H. C. F., of Va., \$30; F. J., of Ill., \$75; J. H. H., of Pa., \$30; H. & P., of Pa., \$30; H. B. N., of N. Y., \$35; A. & L., of Conn., \$25; E. A. L., of N. Y., \$30; D. F. E., of Mass., \$25; W. R., Jr., of Pa., \$30; H. A. R., of Ohio, \$33; C. T. P., of L. I., \$65; S. H., of Ind., \$25; E. G. P., of N. Y., \$30; L. G., of Md., \$30; E. S. C., of N. H., \$30; E. R., of N. H., \$55; W. S., of Mass., \$25; L. J., of N. Y., \$25; G. J., of Ohio, \$15; J. D., of Mass., \$30; T. H. Q., of N. Y., \$35; W. D., of Pa., \$25; D. & E., of Ill., \$40; D. F. S. W., of Md., \$30; L. S. W., of Vt., \$25; R. & B., of Pa., \$30; H. G. N., of N. Y., \$35; F. N., of N. Y., \$30; W. L., of Mass., \$25; H. & P., of N. J., \$30; O. & L., of N. Y., \$30; P. N. B., of N. Y., \$75; J. W. H., of Ill., \$30; W. G. S., of Ga., \$35; J. R. S., of Fla., \$30; J. R. McD., of Mo., \$30; J. D. L., of Conn., \$35; S. P., of Ohio, \$37; S. M., of Ohio, \$25; J. O. C., of Conn., \$30; H. L. N., of N. Y., \$30; R. T., of Iowa, \$10; S. D. & B., of Ill., \$30; McC. & B., of Mo., \$35; A. S., of N. Y., \$30; L. B. D., of R. I., \$35; E. D. L., of N. Y., \$25; and \$30, by Adams' express, from Belfield, Va.—name of sender unknown.]

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, June 2, 1860:—

- M. H., of Conn.; S. B., of Ga.; H. G. N., of N. Y.; W. H. P., of Wis.; W. L., of Mass.; W. G. S., of Ga.; G. J., of Ohio; S. H., of Ind.; T. & C., of Ky.; T. H. Q., of N. Y.; H. B., of Ill.; W. C. D., of Pa.; L. S. W., of Vt.; E. D. C., of Conn.; C. A. B., of Vt.; H. E. N., of N. Y.; S. D. & B., of Ill.; A. De W., of N. Y.; S. M., of Ind.; N. U., of Conn.; J. N. J., of Mass.; J. A. F., of Ala.; E. K. H., of N. Y.; R. H. & L., of Pa.; D. P., of N. Y.; D. F. E., of Mass.; D. D. A., of Mass.; J. W. H., of Ill.; L. I., of N. Y.; D. & M., of Va.; J. G., of Md.; J. M. D., of Ill.; L. B. D., of R. I.; E. D. L., of N. Y.

USEFUL HINTS TO OUR READERS.

BOUND VOLUMES.—Persons desiring the first volume of the New Series of the SCIENTIFIC AMERICAN can be supplied at the office of publication, and by all the periodical dealers; price, \$1.50; by mail, \$3, which includes postage. The volume, in sheets, complete, can be furnished by mail; price \$1. Vol. II. will be bound and ready for delivery on the 1st of July, at which time the third volume commences. The price for this volume will be the same as that charged for Vol. I.

BINDING.—We are prepared to bind volumes, in handsome covers, with illuminated sides, and to furnish covers for other binders. Price for binding, 50 cents. Price for covers by mail, 50 cents; by express, or delivered at the office, 40 cents.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was prepaid has expired; and the publishers will not deviate from that standing rule in any instance.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within 14 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 enclosing \$1 as fee for copying.

INVENTORS SENDING MODELS to our address should always enclose the express receipt, showing that the transit expenses have been prepaid. By observing this rule we are able, in a great majority of cases, to prevent the collection of double charges. Express companies either, through carelessness or design, often neglect to mark their paid packages, and thus, without the receipt to confront them, they mulct their customers at each end of the route. Look out for them!

GIVE INTELLIGIBLE DIRECTIONS.—We often receive letters with money inclosed, requesting the paper sent for the amount of the enclosure, but no name of State given, and often with the name of the Post-office also omitted. Persons should be careful to write their names plainly when they address publishers, and to

name the Post-office at which they wish to receive their paper, and the State in which the Post-office is located.

SUBSCRIBERS TO THE SCIENTIFIC AMERICAN who fail to get their papers regularly will oblige the publishers by stating their complaints in writing. Those who may have missed certain numbers can have them supplied by addressing a note to the office of publication.

VOL. I. OF THE NEW SERIES.

BOUND VOLUME I.—Covers for Binding, &c.—New subscribers who may desire the first volume of the New Series which contains the numbers from July 1, 1859, to January 1, 1860, can be supplied with it by mail or express, handsomely bound, in cloth, at the following prices:—At the office of publication, or by express, \$1.50; by mail (which includes postage), \$3; in sheets, complete, \$1. Covers may also be had separately, which answer as portfolios for preserving the papers, or for binding. Price for covers at the office, or delivered by express, 40 cents; by mail (including postage), 50 cents. For the same investment no other work containing so much valuable information can be procured as is embraced in one volume of the SCIENTIFIC AMERICAN. Orders should be addressed to MUNN & CO., 37 Park-row, New York. Bound volumes may also be had of most all the periodical dealers throughout the country.

Rates of Advertising.

THIRTY 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 sent for publication.

IMPORTANT TO INVENTORS.

THE GREAT AMERICAN AND FOREIGN PATENT AGENCY.—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN, are happy to announce the engagement of HON. JUDGE MASON, formerly Commissioner of Patents, as associate counsel with them in the prosecution of their extensive patent business. This connection renders their facilities still more ample than they have ever previously been for procuring Letters Patent, and attending to the various other departments of business pertaining to patents, such as Extensions, Appeals before the United States Court, Interferences, Opinions relative to Infringements, &c., &c. The long experience Messrs. MUNN & Co. have had in preparing Specifications and Drawings, extending over a period of fourteen years, has rendered them perfectly conversant with the mode of doing business at the United States Patent Office, and with the greater 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 established a BRANCH OFFICE in the CITY OF WASHINGTON, on the CORNER OF F AND SEVENTH STREETS, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at their office.

They are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business they have Offices at Nos. 68 Chancery Lane, London; 29 Boulevard St. Martin, Paris, and 26 Rue des Epéronniers, Brussels. We think we may safely say that three-fourths of all the European Patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one can take out a Patent there.

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.

Communications and remittances should be addressed to
MUNN & CO.,
Publishers, No. 37 Park-row, New York.

\$4,500 REWARD TO INVENTORS!—THE undersigned, on behalf of a committee appointed by the merchants and others of New Bedford, Mass., hereby offer the following premiums for the best stand and portable hand lamp, designed to be used for the burning of manufactured whale oil:—

- For the best stand lamp \$5,000
- For the second-best stand lamp 300
- For the best portable or hand lamp 1,000
- For the second-best portable or hand lamp 200

All lamps offered for the premiums must be submitted to the committee at New Bedford, on or before the 30th day of August, 1860. The committee reserve the right to test all lamps submitted to them, and to reject all if, in their judgment, no one is deemed worthy of acceptance. They also will require the inventor to secure Letters Patent for the inventions which may be approved by them, if they deem it expedient, and to place the same, by proper assignment, under the control of the committee, upon such terms as may be agreed upon between them, JOSEPH GRINNELL, Chairman.

CORKS CUT BY OUR NEW PATENT MACHINERY are perfectly cut, and are offered at less than usual prices. Granulated cork to fill buoyant mattresses and cushions to fill in under flat roofs, to keep upper rooms cool. State rights for the patent cork-cutting machines for sale by S. W. SMITH & CO., No. 43 Center-street, New York.

\$20—FOR A SET OF GOOD HAND-MADE stencil tools (such as all first-class workmen use). Send stamps and get specimens of ours, and of the \$10 eastern tools. Address W. E. LAMPHEAR & CO., Cincinnati, Ohio.

NEW PATENT SECTION INSULATOR.—Adjustable without disturbing the conductor. State and county rights for sale. MYRON FOX, patentee, Stamford, Conn.