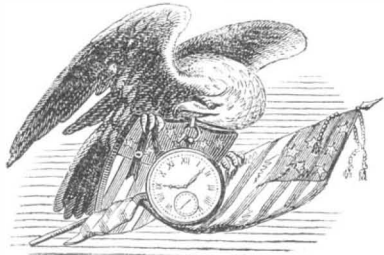


PATENTS FOR SEVENTEEN YEARS.



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:—

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.....	\$30
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$50
On filing Disclaimers.....	\$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 English, French, Belgian, Austrian, 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 it 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, 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. If 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.

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 history of the case, inclosing the official letters, &c.

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-lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can 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.

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.

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.

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.

TO OUR READERS.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on Design Patents, when two good drawings are all that is required to accompany the petition, specification and oath, except the government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

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 1836, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona fide acknowledgment of our reception of their funds.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of *Instructions to Inventors*, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.



J. L. E., of Pa.—Warren's elements of geometrical drawing, noticed in our last, is very suitable for you to commence with. After going through it you should use a more elaborate treatise on mechanical drafting.

P. M. M., of Mich.—We do not recollect any such apparatus as you mention for registering the pressure of steam, but such an apparatus has been used for registering the pressure of the atmosphere and what would register the one would register the other. The patent law makes no distinction between one elastic fluid and another in such a case, and therefore the most you could claim in a patent would be your particular apparatus.

T. C. R., of Wis.—Projectiles for cannon and also for small arms have been made with finely-grooved surfaces for the purpose of obtaining a rotary motion in their discharge from smooth bores.

G. P., of N. Y.—Your skate improvement appears to be new and patentable. You can easily determine its practical value by a trial.

J. R., of Wis.—The *Architect's and Mechanic's Journal* is extinct.

J. G., of Conn.—By increasing the temperature of your electro-gilding bath you will obtain a deposit of a deeper shade. By moving the articles to be gilded back and forth in the bath, you can also change their color from a brass yellow to a red shade.

J. S., of Ind.—Your plan for propelling ships by means of balloons is one of bold novelty, but we think wholly impracticable. You propose to have the balloon attached to the ship by a line long enough to allow the balloon to rise till it should find a current blowing in the right direction. The constant current from the West is usually found at the height of about a mile and a half. This would require a hawser too long for practical use.

C. E. F., of Mass.—We are not acquainted with any method of removing the gilt bands from china cups and saucers without injuring them for use and display.

C. S., of Conn.—It is extremely difficult if not absolutely impossible to get all the water out of wood by mere seasoning. We have no doubt that the water which exuded from your sticks was simply expelled by the heat; and was not formed by the combustion of hydrogen.

E. G., of Mass.—You can easily arrange a weight to drive a small machine. The frequency with which it will have to be wound up will depend on the power required to drive the machine, and the size of the weight. A pendulum will regulate the speed of a machine with great precision; but it can add nothing to the power.

L. K., of Ky.—Several correspondents have enquired of us where large plate springs can be obtained. We now understand that Messrs. Hanibal Green & Co., of Troy, N. Y., can supply such springs.

K., of N. Y.—If you desire to obtain assistance in securing a patent for your mode of preventing dew from forming on show windows, you had better advertise for it in this paper.

P. W. A., of Ohio.—Government has no standing offer for a new motor. The cost of a patent is not affected by the value of an invention. We will send you one of our pamphlets of advice and a circular about foreign patents.

J. D. J., of Pa.—We are not acquainted with any one engaged in the manufacture of oil barrels. Perhaps some manufacturer who sees the notice will advertise them in our paper.

J. S., of Iowa.—The only and best mode of charging a fluid with carbonic acid gas, is by confining the fluid in a tight vessel and admitting the gas to it in the same manner that soda water is charged. Saleratus is made by conveying carbonic acid gas from a furnace having a clear anthracite coal fire, into a close chamber filled with shallow pans on shelves containing the ground soda, which absorbs the gas. The carbonate of soda and polish are neutral salts.

H. G., of Mass.—The solid contents of a cylindrical vessel, the circumference of which is 36 feet and height 9 feet four inches is equal to 962.57 cubic feet, and the contents of a square vessel each side of which is 9 feet and in height 9 feet 4 inches is 756 cubic feet.

D. P., of Mass.—You might obtain a patent on your addition to Jones's showing that your patent would be subject to his—that is to say, you would be compelled to make some arrangement with him before you could use his. If it can be shown that your addition to Jones's spring proves of any advantage, we think a patent should be granted for it.

G. R. J.—A wind-mill does very well for pumping water, but for driving a saw it is very unsatisfactory from its inconstancy. If you object to steam perhaps an air engine might answer your purpose.

C. W., of N. Y.—The *London Quarterly Review* attributes the introduction of iron clad war vessels to Robert L. Stevens, of Hoboken, N. J. The origin and earliest date of chambered and centrally perforated projectiles we presume it would be impossible to determine.

W. B., of N. J.—We do not believe that you will find anything better or cheaper than wood for the ball on the carpenter's brace. India rubber is worth about 70 cents per pound, and gutta percha is expensive.

F. N. B., of Wis.—If your boiler is of very good iron it ought to resist a tensile strain of about 60,000 lbs. to the square inch of sectional area; which would give 3,000 lbs. for each lineal inch for a thickness of .05. The steam in a boiler one foot in diameter would exert a tensile strain on each lineal inch equal to 12 times the pressure per square inch. So your boiler ought to bear a pressure of 250 lbs. to the square inch; making no allowance for the weakness from riveting.

J. M. K., of Conn.—A musket ball fired vertically from the earth, would fall with the same velocity that it had in its ascent, were it not for the resistance of the air; but in consequence of this resistance it falls with less velocity.

SPECIAL NOTICE—FOREIGN PATENT.—The population of

Great Britain, is 30,000,000; of France, 35,000,000; Belgium, 5,000,000; Austria, 40,000,000; Prussia, 20,000,000; and Russia, 60,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. Nearly all of the patents secured in foreign countries by Americans are obtained through our agency. Address Munn & Co., 37 Park-row, New York. Circulars about foreign patents furnish free.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, Feb. 5, 1862:—

B. B., of O., \$15; C. E. S., of Wis., \$10; P. J., of N. J., \$15; A. J. K., of N. Y., \$15; M and T., of N. J., \$15; J. H., of L. L., \$15; P. D., of Mich., \$20; A. D., of N. Y., \$15; T. and L., of N. Y., \$15; H. G., of N. Y., \$15; F. G. L. S., of Wis., \$25; C. C. C., of Mass., \$30; S. H. N., of Iowa, \$15; R. W. G., of Me., \$15; N. B., of Ky., \$20; J. F. D., of N. Y., \$35; S. J. T., of N. Y., \$20; S. G. B., of Conn., \$35; H. W., of Vt., \$60; A. J. K., of N. Y., \$25; C. W., of N. Y., \$25; O. R. B., of N. Y., \$25; L. B. C., of Conn., \$30; A. McG., of N. Y., \$25; D. M., of N. Y., \$30; E. and G., of Mass., \$40; L. K., of N. Y., \$15; J. H., of N. Y., \$25; M. and A., of Wis., \$650; E. C. H., of N. H., \$10; O. S., of O., \$15; T. S. B., of N. Y., \$25; S. A. B., of N. Y., \$15; H. W., of Cal., \$15; G. L. S., of N. Y., \$25; S. A. B., of R. I., \$15; J. W. S., of N. Y., \$50; O. E. M., of Ill., \$20; F. X. M., of N. Y., \$45; G. and P., of Ill., \$20; D. L. M., of N. J., \$20; J. J. H., of Ky., \$20; R. and H., of N. J., \$12; H. N., of N. Y., \$25; L. P. W., of N. Y., \$25; J. P., of N. Y., \$25; J. M. H., of Va., \$15; B. and S., of N. Y., \$25; G. B. O., of N. Y., \$15; J. B. L., of Conn., \$60; W. B. B., of Mich., \$20; W. T., of N. Y., \$15; H. S., of England, \$40; N. G. C., of N. Y., \$25; A. H., of Wis., \$15; C. W. I., of N. Y., \$15; H. G., of Mass., \$15; G. F. J. C., of N. J., \$15; S. H., of Ind., \$20; T. W., of Ill., \$45; B. T. B., of N. Y., \$20; W. H. B., of R. I., \$20; G. B. D., of Ill., \$20; J. L., of Mich., \$45; C. H. C., of N. Y., \$25; S. P., of Del., \$25.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Jan. 29 to Wednesday Feb. 5 1862:—

S. G. B., of Conn.; B. and S., of N. Y.; S. P., of Del.; P. D., of Minn.; H. N., of N. Y.; T. S. B., of N. Y.; C. C. C., of Mass.; R. and H., of N. J.; O. R. B., of N. Y.; A. McG., of N. Y.; L. B. C., of Conn.; N. G. C., of N. Y.; J. B. L., of Conn.; C. H. C., of N. Y.; G. S. L., of O.; J. A. W., of N. Y.; W. T., of Mich.; L. P. W., of N. Y.; F. G. L. S., of Wis.; E. and G., of Mass.; G. L. S., of N. Y.; R. H. J., of Ill.; C. W. H., of Conn.; J. H., of N. Y.; C. W., of N. Y.; S. J. D., of Ky.; A. J. K., of N. Y.

Improved Breech-Loading Cannon.

The accompanying engraving represents one of the latest modifications in breech-loading cannon, and varies in some important particulars from anything that has preceded it. It has a conical breech pin inserted and held in place by a screw, but the screw, instead of having its female thread in the cannon, is passed through a metal bar, which is attached to two massive rods, extending back from the trunnions. Of all plans yet suggested for closing the breech of a cannon, we know of none that prevents the escape of gas except the conical breech pin, pressed in by a

MAYHEW'S PATENT KEROSENE LAMP.

The accompanying engraving illustrates an improved mode of securing chimneys to lamps by means of which the wick is made accessible for trimming or adjusting without the trouble of taking off the hot cone or deflector, as at present practiced.

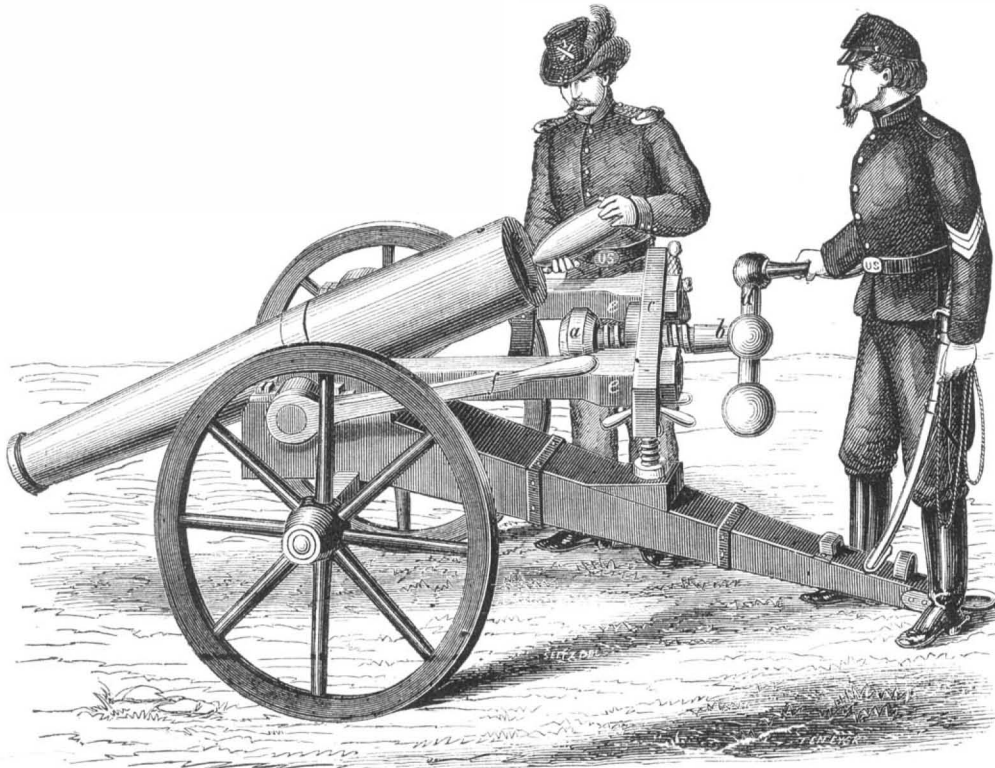
The deflector, A, and chimney, B, Fig. 1, rest upon a flat ring, C, Fig. 2, and this ring is secured to the lamp by two pendant rods, *d d*, which slide loosely in holes in the lamp top. From this arrangement it will be seen that to render the wick accessible it is only

by having the screw turned in too tight, or by the expansion of the glass afterward.

The patent glass cone can be used with this improvement, a fact which the inventor regards as of considerable consequence, as he says that the use of the transparent cone is effecting a notable economy in the burning of oil.

This improvement was invented by T. Mayhew; the patent was granted, through the Scientific American Patent Agency, Jan. 7, 1862, and further information in relation to it may be obtained by addressing Mayhew & Barratt, at Poughkeepsie, N. Y., or R. D. Mann, agent, at No. 8 Dey street, New York city.

By repeated experiments with a gunpowder engine, in New York, it was found that eleven grains of fine sporting powder moved 250 pounds a distance of one foot, or one pound, 250 feet. The combustion of the powder was very perfect.



LA BOYTEAUX'S AND DANGERFIELD'S BREECH-LOADING CANNON.

screw. This perfect closing of the breech has been the great difficulty with this class of artillery. If there is the slightest leak, the gas in rushing through the orifice will soon enlarge it so as to disable the gun. The arrangement of the several parts of this cannon will be understood by a glance at the cut.

The breech pin, *a*, is made tapering at its forward end, and fits into a chamber in the breech; its conical end pressing against a tapering shoulder at the inner end of the chamber. The breech pin is secured to the end of a stout screw, *b*, which passes through the metal bar, *c*, and has the crank, *d*, upon its outer end. The bar, *c*, is fastened by means of large nuts to the ends of the two rods, *e e*, which are looped at their forward ends to the trunnions of the gun. By turning the screw the breech pin is drawn out, when the breech of the gun is tipped up in the position shown in the cut, and the charge is inserted. The gun is then tipped back into its proper position for firing, and the breech pin is pressed into place by turning the screw in the opposite direction. For tipping the gun the lever, *f*, is keyed firmly to the trunnion, which extends beyond its bearing on the carriage for this purpose.

From the positions of the lever and crank it will be seen that one man can easily work the breech and tip the gun, while two more only are required to work it; one to insert the cartridge and the other to discharge the piece. In case it should become necessary to abandon a gun constructed after this plan it can be easily disabled by simply turning off the nuts and carrying away the breech pin and screw.

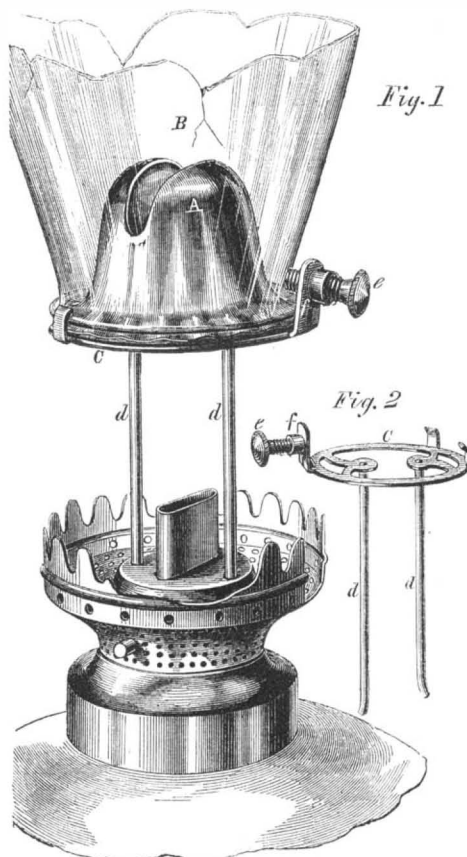
The inventor says that he has fired one of these guns five times in a minute, and that three men have fired it fifteen times in a minute.

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. H. La Boyteaux or James Dangerfield, at Jacksonville, Ill.

Boiled oats, fried in fat, are recommended for laying hens as the very best food for the production of eggs.

necessary to take hold of the chimney, or of the screw, *e*, and raise both the chimney and deflector clear of the wick; the guide rods, *d d*, securing the return of the parts precisely to their proper places.

The plate, *f*, through which the screw, *e*, passes has



considerable elasticity, enabling the screw to yield to any expansion of the glass, and thus prevent the chimney from cracking. This is a very important matter, as a great many chimneys are broken, either



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The SCIENTIFIC AMERICAN has the reputation, at home and abroad, of being the best weekly journal devoted to mechanical and industrial pursuits now published, and the proprietors are determined to keep up the reputation they have earned during the seventeen years they have been connected with its publication.

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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 these old countries. We shall continue to transfer to our columns copious extracts from these journals of whatever we may deem of interest to our readers.

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No person engaged in any of the mechanical pursuits should think of doing without the SCIENTIFIC AMERICAN. It costs but four cents per week; every number contains from six to ten engravings of new machines and inventions which cannot be found in any other publication. It is an established rule of the publishers to insert none but original engravings, and those of the first-class in the art, drawn and engraved by experienced artists under their own supervision.

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