

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 *гешефтас* 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.

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.

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.



D. A. C., of Colorado Territory.—It seems to us that the walls of a gun would be weakened by making cylindrical holes in them parallel with the bore, even though the iron around these holes should be cooled by water circulating through them, on Rodman's plan of casting cannon.

G. W. K., of Pa.—The specimen which you send us is magnetic oxide of iron, one of the most valuable iron ores.

F. W. T., of Md., and W. M. A., of Ohio.—The experiments, both in this country and England, have shown that the larger iron plates are, and the more solid their supports, the better will they resist the force of shot. It may be, however, that some degree of elasticity would tend to prevent the frame of the vessel from being crushed in.

Invention, of N. Y.—Lead may be silver plated by means of electricity, though it does not adhere very firmly.

M. L. G., of N. Y.—Your suggestion to have the turret of the *Monitor* revolve on rollers, has already appeared in our paper, as well as all of your other suggestions. See the communication from one of her officers in another part of this number.

A. W., of N. Y.—We have been informed that the first passenger locomotive run in this State, was on the old Mohawk and Hudson River Railroad, between Albany and Schenectady.

T. H. M., of Munich.—We do not see anything especially worthy of notice in your mode of constructing war vessels. Substantially the same views have been suggested to us before.

M. E. M., of N. Y.—There is no standing premium for the production of a perpetual motion. This subject, of late years, has ceased to attract the attention of men of science. If you have anything new in the way of screw drivers we can probably tell after examination.

J. W. G., of Iowa.—It appears to be useless to undertake to get letters to you through your post office. We have written you two letters, one under date of March 12th, the other April 15th. We take note of your remarks about the steam wagon enterprise. It has always appeared to us a doubtful scheme to undertake to run steam carriages on common roads, as an economical experiment.

D. C. G., of Iowa.—You ask, "If A obtains a patent for a machine, sells territory to B, and, after selling to B, A gets a patent for an improvement on the same machine, has A the right to sell the original machine with the patented improvements, on B's territory, or has B the right to use the said improvements?" Answer.—A has no right to sell the original machine with his patented improvement in B's territory, nor has the latter any right to use or sell the patented improvement of A.

E. J. A., of N. H.—Cannot furnish No. 3, Vol. VI., as it is out of print. No person can tell what caused the intermittent flow of water in your log, without an examination of its position, and a knowledge of all the circumstances connected with the phenomenon.

A. E. W., of N. Y.—Very little of the timber of California is suitable for manufacturing purposes, and all the iron and steel used in that State are imported.

M. J. C., of Iowa.—Hydraulic cement is made of a peculiar limestone. A cement similar to it may be made by mixing the dust of burnt brick with highly-burned common lime. To make Plaster of Paris, gypsum is roasted in brick troughs until all its water is expelled, after which it is exposed in sheds to the atmosphere, and finally ground to powder for common use. It will not make good mortar, but for plastering the interior of buildings it is excellent.

P. R. S., of Conn.—You have a perfect right to use india-rubber rollers in making clothes wringers, but we think you will find difficulty in getting them made by any reliable company. The Metropolitan Washing Machine Company seems to control the manufacture of the article.

F. S., of Mass.—We have carefully read your article on the Art of Measuring Time. It is too long for our use, and before it would be fit to publish it would need a good deal of pruning. In its present condition we cannot use it.

R. B., of C. W.—The embossing plates or dies for envelopes may be made either of cast or wrought iron, steel or brass. Bronze dies are used in some embossing presses. They are first cast, then finished by hand.

J. A., of Ill.—Gutta percha and india rubber are insoluble in alcohol, but whether they would make good canteens or other vessels for holding whisky, we do not know, for we are not acquainted with any person who has made the experiment.

A. B. L., of Conn.—Give us your opinion respecting the cause of the belt working toward the edge of your counter pulley, since you have intimated that you know it.

H. W. H., of Ind.—Nassau is the chief port in New Providence, one of the British West India Islands. It is a perfect nest for smugglers running the blockade on our Southern coasts.

A. S. H., of N. Y.—A common hair lotion for coloring the hair is composed of alcohol one pint, a tablespoonful of castor oil, one-fourth of an ounce of sugar of lead, and the same quantity of flowers of sulphur. The sulphur should be mixed with the alcohol for about six hours before the other substances are added. Applied to grey hair it changes it generally into a dark brown color. It is sometimes sold as a hair restorative for about one dollar per quart, in bottles.

F. A. M., of N. Y.—A ventilating hat, with a series of holes in the sides and another set in the crown, is not new. Such hats are quite common in this city and in Philadelphia.

A. K., of Ky.—Watches the steel parts of which have been converted into magnets, can only be completely renovated by substituting new steel parts for the old. Steel magnets may be demagnetized by heating them to a low red heat.

M. S. H. and J. L., of N. Y.—E. Geyline resides in Philadelphia, J. Stephenson in this city—place of business, Novelty Works.

J. P., Jr., of Iowa.—There is no work published, to our knowledge, which contains the information you request, respecting "ornamental painting for cars, &c."

L. M. D., of Ohio.—Transparent varnish for covering polished iron, may be made with white seed lac dissolved in alcohol. The metal should be warm when it is put on. This varnish is easily scratched. We recommend a coating of pure linseed oil, boiled with a small quantity of the sulphate of zinc, as being superior to the lac varnish for covering the polished iron work of plows, to prevent it from rusting.

S. W., of N. J.—You can only find out by experiment what colors can be mixed with coal tar for the purpose of painting out houses. Common brown paint is made by mixing "Spanish Brown," white lead and lampblack with linseed oil. Although oil paint is most expensive at first for out houses, it is cheapest in the end, because it endures so much longer.

H. G. L., of Ind.—One-fourth of an inch of outside lap in your slide valve, we do not think, will affect its operation to any sensible extent when set with lead.

B. S., of Pa.—In softening steel it only requires to be highly heated, but in order to preserve its surface from oxydation, it should be covered with some paste, such as that of flour, or buried in charcoal dust and excluded from the air.

H. J. T., of N. Y.—The iodide of lead is prepared by adding a solution of the iodide of potassium to a solution of acetate of lead, when a yellow insoluble precipitate falls to the bottom of the vessel. This precipitate is the iodide of lead, the spangles of which are of the color and luster of burnished gold.

J. McD., of Pa.—Fulminating mercury is produced by adding a solution of the nitrate of mercury to alcohol. The process is very dangerous, and the operation must be performed with great caution. This substance is chiefly used for priming percussion caps.

R. W. S., of Mass.—Any cast iron for molding may be treated in a very simple manner to secure improved castings. Take a pole of green timber and stir up the fluid iron when it is first run into the ladle, then allow it to become still, skim off the scoria from the surface and pour the metal into the molds.

G. McD., of C. W.—Water power is much cheaper than steam power, for a woolen factory, in your part of the country, because coal is comparatively high in price. Near the market, such as in the vicinity of our great cities, and where coal is cheap, steam power may be most economical, all things considered.

O. W. A., of N. J.—We advise you to use the chloride of lime as a disinfectant in your cellar. A pound of copperas dissolved in a pailful of hot water and poured into your sink, will remove the fetid smell.

T. J. E., of Mass.—Most of the fine cotton thread used in America is made in Scotland, where thread making has formed a special branch of manufacture for nearly two centuries. The City of Paisley is distinguished for thread manufactures, and for the weaving of fine shawls. Clark's thread has a very high reputation.

R. H. T., of N. Y.—The pickle which is employed for brightening brass is made with equal parts of nitric and muriatic acids, diluted with four times their bulk of water. Sulphuric acid diluted with three times its weight of water, and used hot, also makes a good brightening pickle for brass, which must be thoroughly washed in hot water afterwards, and then dried in warm saw-dust.

P. B., of Vt.—The samples of supposed gold which you have sent us are iron pyrites. Gold in its natural state is soft and metallic and very different from hard crystalline ores like those which have deceived you.

M. L. R., of N. Y.—A strong solution of isinglass is the best cement you can use for joining leather bands. It may be kept from becoming moldy by adding to it some whisky and a little of the essential oil of clove, or a little camphorate spirits.

R. W., of N. H.—Methylated spirits are obtained by distilling wood in iron retorts. Beach, birch and maple yield large quantities of wood spirits. It requires an experienced person to conduct the operations of distilling wood. The clear, strong, acetic acid that is employed in making the acetate of iron, is obtained by distilling wood.

W. W. R., of Ohio.—The nitrate of silver is prepared by adding small pieces of pure silver to nitric acid (aqua fortis) until effervescence ceases. The solution then formed is clear and caustic. It stains the hair, skin, and almost all animal substances, black. When boiled for a considerable period, it deposits beautiful clear crystals. It is very poisonous. Stains of nitrate of silver may be removed by the cyanide of potassium. We advise you not to use it for coloring your hair.

J. W. L., of H.—Scrub your starch vats and wash them regularly with hot water, in warm weather, and you will prevent the fermentation to which you refer, whereby you have lost so much starch.

T. S. McF., of Miss.—Fire clay is abundant in New Jersey, and American made fire bricks are equal to those that are made in England.

C. G. A., of Mass.—The returns of the census for 1860 are being prepared for publication.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, July 9, 1862:—

G. H. H., of N. Y., \$20; J. L., of Wis., \$20; H. R., of Ill., \$20; R. & P., of Mass., \$20; J. H. & G. W. S., of N. Y., \$20; S. H., of Ind., \$45; W. M., of Ohio, \$20; H. C. F., of Vt., \$20; T. W. W., of Mich., \$20; T. & M., of Conn., \$20; J. K. B., of Ill., \$20; J. H., of Pa., \$10; G. C., of N. Y., \$20; E. M., of N. Y., \$10; J. C. P., of N. J., \$20; D. W. H., of Cal., \$40; E. H. S., of Pa., \$15; A. J., of Conn., \$25; D. S., of Cal., \$250; R. J. A., of Mich., \$15; S. M., of N. Y., \$15; J. H. McG., of Ohio, \$15; S. H., of Ind., \$15; J. F. D., of Ind., \$25; J. P. A., of Ill., \$25; J. B., of Ill., \$25; R. H. C., of N. Y., \$25; A. F. P., of N. Y., \$25; C. S. L., of N. J., \$15; N. S., of Conn., \$15; R. C., of Mich., \$15; E. W. Van D., of Ohio, \$15; B. & B., of Ill., \$25; W. L., of Iowa, \$25; J. B., of N. Y., \$15; W. H. L., of Ind., \$15; D. T. G., of Ind., \$225; M. T., of Iowa, \$10; S. H., of N. H., \$25; J. M. H., of Pa., \$25; J. M. & W. C. W., of Iowa, \$25; M. C. B., of Minn., \$25; G. D. H., of Ill., \$15; W. O. F., of N. Y., \$15; A. S. L., of N. Y., \$250; H. B., of Iowa, \$15; J. W. R., of Conn., \$10; B. R., of Mass., \$250; J. K. H., of Ind., \$20; H. N., of N. Y., \$10; J. M., Jr., of Ill., \$15; J. C., of N. Y., \$10; J. A. R., of N. J., \$25; P. W. McK., of N. J., \$25; J. C. R., of N. Y., \$25; II. W., Sr., of Iowa, \$25; T. & B., of N. Y., \$25; A. C. G., of N. Y., \$30; B. R., of N. Y., \$35.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from July 2 to Wednesday, July 9, 1862:—

I. B., of Ill.; J. A. R., of N. J.; J. P. A., of Ill.; A. T. P., of N. Y.; R. H. C., of N. Y.; P. W. McK., of N. J.; J. C. R., of N. Y.; J. F. D., of Ind.; C. H., of N. Y.; H. W., Sr., of N. J.; A. J., of Conn.; T. & B., of N. Y.; D. W. H., of Cal.; A. C. G., of N. Y.; B. R., of N. Y.; B. & B., of Ill.; J. M. H., of Pa.; W. L., of Iowa; R. A. G., of Wis.; J. K. H., of Ind.; J. D. L., of N. Y.; J. M. & W. E. W., of Iowa; M. C. B., of Minn.; S. H., of N. H.

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 furnished free.

TO OUR READERS.

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.

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.

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.

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.

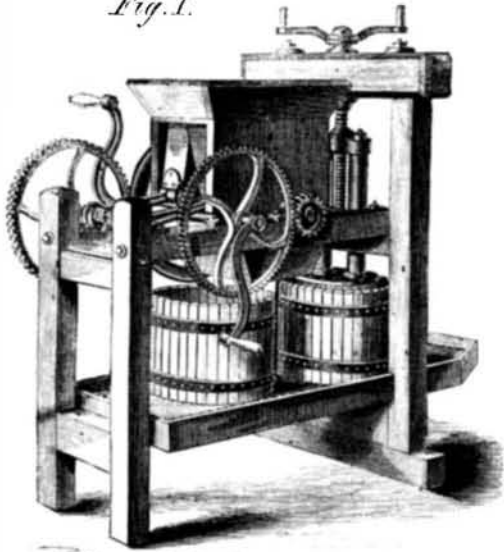
NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of *Instructions to Inventors*, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No.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

Improved Cider and Wine Mill.

The cider mill here illustrated combines the grinding apparatus and the press in one machine; the grinding apparatus embracing also a crushing device, so that a complete mill is formed in one compact machine.

Fig. 1, is a perspective view of the machine and Fig. 2, a vertical section. The fruit is placed in the hopper, A, and falls down between the rotating cylinder, B, and stationary concave, C, both furnished with teeth for tearing the fruit in pieces.

Fig. 1.



Two crushers, D and E, are suspended at their upper ends within the hopper, and are caused to swing toward and from the cylinder, B, by means of a crank shaft, f, Fig. 1, through the medium of the connecting rods, d and e, Fig. 2. Each of the crush-

machine by a set screw so that it may be adjusted at such distance from the cylinder, B, as may be deemed advisable. The several motions described are effected by gear wheels and pinions of ordinary construction.

The inventor says that he has sold several hundred of these mills, and that in all cases they have given satisfaction; he has never yet had a single complaint. In several trials they have been awarded the highest premium for lightness of power, speed of work, &c. He further says that the mill will make from six to eight barrels of cider per day, that it is well suited for crushing and pressing grapes, that it forms an excellent cheese press and lard press, that it is very portable and occupies little space.

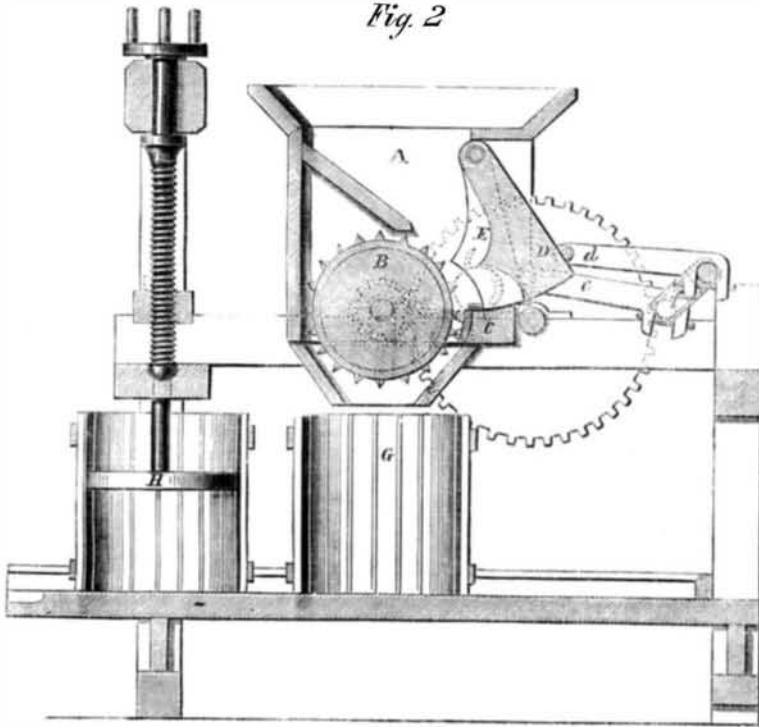
The patent for this invention was granted, through the Scientific American Patent Agency, October 29, 1861, and further information in relation to it may be obtained by addressing the inventor, J. R. Gates, or W. B. Wilson (to whom an interest in the invention has been assigned), both at Louisville, Ky.

Illuminated Photographic Work.

"Blessed among modern inventions be photography. It has no rival on earth except the printing press, but it works a thousand times quicker; it sheds a light upon all mysteries; it rules over darkness as a sovereign power, and brings to light, by light, an inexhaustible quantity of hidden treasures which mankind would, without its aid, have remained ignorant of for ever."

Such is the eloquent apostrophe to photography written by the eminent publisher, L. Curmer, in his prospectus of a magnificent edition of "Les Evangelistes," he is now publishing in Paris. Remarkable as are all the productions of this enthusiast, especially his "Imitation de Jesus Christ" his "Heures de la reine Anne de Bretagne," this new edition of the Evangelists surpasses them all, and this excellence is due entirely to photography. A short description of this bibliographical curiosity may not be without interest.

Fig. 2.



GATES'S CIDER AND WINE MILL.

ers has a projection on the side next the cylinder, B, forming this surface into two concaves, by which means the fruit is caught and held down while it is being torn by the revolving teeth. This is one of the principal features of novelty in this mill, and is claimed to give a decided superiority over mills which have no device for holding the fruit down while it is being crushed.

After the fruit is crushed it falls into the receptacle, G, which is formed of staves a short distance apart held together by iron hoops in the usual manner. Two of these cylinders are prepared, and when one is filled it is placed under the piston or follower, H, where the juice is expressed from the pulp, while the second cylinder is being filled. The piston, H, fits the cylinders not too tightly, and is forced down by a screw in the usual manner.

The concave, C, is secured to the frame of the

The work consists of 400 pages of text, each surrounded with the richest ornamental borders, beside 100 miniatures from colored photographs, copies of rare manuscripts executed by Jean Fouquet, Hans Memling, Albert Durer, Julio Clovis, Angelico da Fiesole, Atavante, Lorenzo Monaco, and others, and preserved in the libraries of Paris, London, Oxford, Brussels, Munich, Turin, Milan, Venice, Bologna, Florence, Rome, Naples, St. Gall, Rouen, Lyons, Grenoble, &c.

Since the breaking out of the rebellion there have been constructed at the Charlestown navy yard, four sloops of war and two side-wheel gunboats, the tonnage of which amounts to 7,604 tons. The following is the list and tonnage of the respective vessels: Canandaigua, 1,590; Housatonic, 1,400; Wachusett, 1,046; Maratanza, 1,138; Tioga and Genesee, 1,216 tons each.



THE BEST MECHANICAL PAPER IN THE WORLD.

VOLUME VII.—NEW SERIES.

The SEVENTH VOLUME of the NEW SERIES of the SCIENTIFIC AMERICAN commenced July 5, 1862.

The publishers embrace the opportunity to thank their old patrons and subscribers for the very liberal support they have hitherto extended to this journal, and hope for a continuance of their support.

The circulation of the SCIENTIFIC AMERICAN is far greater than that of any other publication of the kind in the world, and is the only weekly newspaper of the kind published in the United States.

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.

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 inspiring 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.

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, expressly for this paper.

TO THE CHEMIST AND ARCHITECT!

Chemists and architects will find the SCIENTIFIC AMERICAN a useful journal to them. All the new discoveries in the science of chemistry are given in its columns, and the interests of the architect and carpenter are not overlooked; but all the new inventions and discoveries appertaining to these pursuits are published from week to week.

TO THE MILLWRIGHT AND MILLOWNER!

Useful and practical information pertaining to the interests of millwrights and millowners will be found published in the SCIENTIFIC AMERICAN, which information they cannot possibly obtain from any other source. To this class the paper is specially recommended.

TO THE PLANTER AND FARMER!

Subjects in which planters and farmers are interested will be found discussed in the SCIENTIFIC AMERICAN; most of the improvements in agricultural implements being illustrated in its columns.

TO THE MAN OF LEISURE AND THE MAN OF SCIENCE!

Individuals of both these classes cannot fail to be interested in the SCIENTIFIC AMERICAN, which contains the latest intelligence on all subjects appertaining to the arts and sciences, both practical and theoretical; all the latest discoveries and phenomena which come to our knowledge being recorded therein.

WAR! WAR! WAR!

Our summary of the war news, which has been so highly complimented by our readers and cotemporaries, will be continued in the coming volume so long as the war lasts, accompanied with copious illustrations of new war implements of various kinds, such as cannon firearms, projectiles, &c., &c.

TO ALL WHO CAN READ!

Everyone who can read the English language, we believe, will be benefited by subscribing for the SCIENTIFIC AMERICAN, and receiving its weekly visits; and while we depend upon all our old patrons renewing their subscriptions, we would ask of each to send us one or more new names with his own. A single person has sent us as many as a hundred mail subscribers, from one place, in a single year! The publishers do not expect every one will do as much; but if the five thousand subscribers, whose subscriptions expire with the present volume, will each send a single name with their own, they will confer a lasting obligation upon us, and they shall be rewarded for it in the improvement we shall be enabled to make in the paper by thus increasing our receipts. The following are the

TERMS.

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Western and Canadian money, or Post-office stamps, taken at par for subscriptions. Canadian subscribers will please to remit 25 cents extra on each year's subscription to pre-pay postage.

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