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W. F. D., of Mass .- Graphite has been obtained in cast iron, but the iron itself cannot be converted into graphite, because the latter is simply carbon in a peculiar condition. The which adheres to the interior of gas retorts, is of the sam The graphite early as graphite plumbago.

G. M. H., of Me .- The case of variation of half an inch in the shrinkage of two similar castings of columns, from the same pattern and with the same kind of iron, must be due to the mode of casting, or the metal in the one case had beeu raised to a higher temperature than in the other case. Such variations of shrinkage are not nncommon.

I. N. G., of N. Y.-A solution of the chloride of soda will remove the odor from muskrat skins, but the operation will slightly injure the quality of the skin. To apply the chloride, steep the skins for about an hour in the liquid, of a strength equal to 1°

W. D. S., of Pa-You will find the theory of the action of Giffard's Injector set forth on page 260, Vol. III. (new series) SCIEN TIFIC AMERICAN. Your views accord with that theory.

T. O. B., of Ind.-There is no practical work published on dveing that comes up to the practice of the present day. All logwood blues dyed on cotton are fugitive. They are prepared with a mordant of pyroligneous acid, and topped with strong logwood liquor

W. M., Jr., of Pa.-French pistols are frequently made with the same acute grooves as those shown in your sketch, and they have been proposed to us for muskets several limes within the Grooved friction wheels are coming into comm past year. Grooved friction wheels are coming into common use as substitutes for toothed gearing. Your paper is sent regularly from n use as this office.

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J. C., of C. W .- The power of steam engine required for propelling your yacht, at a certain speed, depends upon the model and displacement. You should consult a steamboat builder, and our model or draft to him.

C. W. C. S., of Manassas Junction, Va.-We have seen several statements pretending to give the horse power of Niagara Falls, but we distrust them all. There is no space of any conse-quence, for a long distance below the falls, for building factorics, or Niagara would be a splendid situation for a manufacturing city. precipitous rocks extend nearly to the edge of the river

A. T. S., of Ill.-You will obtain all the receipts you request some time during the publication of this volume of the SCIEN-TIFIC AMERICAN, as we shall publish one column of such every

C. M., of Pa.-You can ascertain all about vessels sailing from this port by referring to the columns of the Journal of Com

I. M. S., of N. Y.-The article to which you refer an carbonic oxide, was obtained chiefly from the London Journal of Gas Lighting. The reference to water gas on the continent of Europe cannot mislead the public, as we view the question.

W. B. S., of Vt.-It is impossible to tell whether American watches keep as good time as English lever watches having the fusee, without a series of long and comparative experiments with the best watches of the two classes. Sofaras we know, such exents have not been made.

C. S. H., of N. Y .- By raising a cut iron nail to a red heat, wing it to cool very slowly in warm sand, ashes or char-ill become soft and tough and may be clinched.

R. R., of Ill.-Raw silk is not cultivated in this section. and we do not know what prices may be obtained for cocoons, or where you can obtain silk worms-

, of N. Y.-We have never heard it stated that the stripes of the American flag were symbolic of any institution in our Re -----

P. A. J., of N. Y .- Strong and warm soap suds should remove gum from the journals of your Buck-eye mower. A lye of soda or potash will effect the same object J. J. A., of Wis .- Soap mixed with arsenic is the composition used for stuffing birds and preserving their skins. The follow-ing is a good receipt for your use : Camphor 2½ oz.; powdered ar-senic, 1 lb.; while soap, 1 lb.; salls of tartar, 6 oz.; powdered chalk, 2 oz, ; mix all together and use in the common way Corry site sublimate has been recommended as a substitute for arsenic in preserving insects and birds, but it is much inferior. There is no good work published on the art of forging.

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J. B., of N. Y.-The London Journal of Gas Lighting is published by W. B. King, No. 11 Bolt Court, Fleet street, Londo

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G UILD & GARRISON'S CELEBRATED STEAM Pumps-Adapted to every variety of pumping. The principal styles are the Direct Action Excelsior Steam Pump, the improved Balance Wheel Pump, Duplex Vacuum and Steam Fumps, sad the Water Propeller, an entirely new invention for pumping large quan-tities at a light lift. Also one 60-horse steam engine, good as new, will be sold chesp. For sale at Nos. 55 and 67 First street, Williams-burgh, and No. 74 Beekman street, New York. 1 tr

MILL STONE DRESSING DIAMONDS, SET IN PAT **LVL** ent Protector and Guide. For sale by JOHN DICKINSON, patentee and sole manufacturer, No. 64 Nassau street, New York City. Also manufacturer of Glazier's Diamonds. Old Diamonds re-set. 21 12*

COMBINED SHINGLE AND HEADING SAW.-UNE-qualed for simplicity and economy of power and timber. Itua-trated in No. 20, present volume, SCIENTIFIC AMERICAN. Address TREVOR & CO., Lockport, N. Y. 2013*

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WINANS'S ANTI-INCRUSTATION POWDER (FIVE IMPORTANT TO INVENTORS.

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States and all foreign countries, on the most reasonable terms also attend to various other depart-nents of business pertaining to patents, such as Extensions, Appeals before the United States Courts Interferences, Opinions relative to Infringements, &c. The long ex perience Messrs. MUNN & Co, have bad in preparing Specifications and Drawings, extending over a pe-

riod of sixten years, has rendered riod of sixten years, has rendered m 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, or 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 V'ORK. 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 Offices are cordially invited to call at their office. They are very extensively engaged in the preparation

n and securing of Patents in the various European countries. For the transaction o this business they have Offices at Nos. 66 Chancery Lane, London, 29 Boulevard, St. Martin, Paris, and 26 Rue des Eperonniers Refueeole We think we may safely say that three-fourths of all the European Patents secured to American citizens are procured through our Agency

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 Prin-cipal Office, or either of the Branches. They also furnish a Circufar of information about Foreign Pat nts.

The annexed letters from tormer Commissioners of Patents we com-

Immediately after the appointment of Mr. Holt to the office of Post-

aster General of the United States, he addressed to us the subjoined very grateful testim onial:-

very grateful testimonial:--MESSRS. MUNN & Co.:-It affords me much pleasure to bear testi-mony to the able and efficient manner in which you discharged your duties as Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you sus-tained (and, I deubt not, justly deserved) the reputation of energy marked ability, and uncompromising fidelity in performing your pro-fessional engagements. Very respectfully, Your obedient servant, J. HOLT.

MESSRS. MUNN & Co.—Gentlemen. It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your Agency, and that I have ever found youn faithful and devoted to be interests of your clients, as well as eminently qualified to perform the dudes of Patent Attorn eys with skill and accuracy. Very respectfully, WM. D. BISHOP. Communications and remittances should be addressed to MUNN & CO., Publishers, No. 37 Park row, New York.

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RON PLANERS, LATHES, FOUR SPINDLE DRILLS on hand and finishing, and other Machinist's Tools, of superior quality on hand and finishing, and for sale low. For description and prices address NEW HAVEN MANUFACTURING COMPANY, New Ha-ven, Conn.

A MESSIEURS LES INVENTEURS-AVIS IMPOR-qui préféreraient nous communiquer leurs inventions en Français, peu vent nous addresser dans leur languenataile. Envoyer nous un déessin et une description concise pour noure examen. Toutes communica-tions seront regues en comfidence. MUNN & OO., SCIENTIFIC AXHEIOAN OCOCE NO. 57 Park-row. New York...

Bur Beachtung für deutsche Erfinder.

Die Untergeichneten haben eine Anleitung, bie Erfindert ten angibt, um fich bre Patente zu fichern, herausgegeben, und verabfol-gen folde gratis an diefelben. Erfinter, welche nicht mit ber englischen Sprache befannt find, lönnen fbre Mittheilungen in ber beutichen Sprache machen. Efizsen von Er-fintungen mit furgen, beutlich geschriebenen Beichreibungen bellebe man ju abbrefftren an Munn & Go., Auf ber Office wird beutic aefprocet. Dafelbft ift an beben

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nebit ben Regein und ber Gefdaftsortnung ber Datent-Dide und Inlei-tungen für ben Erfinder, um fich Patente ju fichen, in ten Der. Gt. fo-wohl als in Europa. Ferner Ausguge aus ben Patent-Grieben frember Länber und barauf bezugliche Rathichläge; ebenfalls nubliche Binte für Erfinder und folde, welche patentiren wollen. Preis 20 Ets., per Dot 25 Ets.

The Scientific American.

Postmark-Preserving Envelope

It is frequently important in settling questions in law to determine the date on which a letter or document was deposited in the mails, and before the introduction of envelopes the date was always preserved by the postmark being stamped upon the letter. But since the custom of using envelopes has become so universal the postmark is thrown away with the envelope. unless, indeed, pains be taken to preserve the envelope with the letter, and even in this case there can be no absolute certainty that the envelope is the same that came around the letter or document.

Some time since L. W. Leeds, of this city, con-

Selling Articles at Industrial Fairs.

At exhibitions of machinery and agricultural fairs, a rule is sometimes adopted by which managers prohibit exhibitors from selling articles on the grounds. We hope this rule will not be adopted at a single fair this year. It is unwise and unjust in some of its features. It is for the mutual advantage of exhibitors and visitors at fairs, that there should be a free exchange and sale of commodities allowed. Persons who visit fairs see articles which they want and desire to possess, and those who exhibit are in the same frame of mind to part with or sell their articles. Private sales are not forbidden; we do not allude to ceived the idea of cutting a hole in the envelope to | these, but to public sales and delivery on the grounds



MORRISON'S POSTMARK-PRESERVING ENVELOPE.

upon which the postmark might be stamped through the hole. On applying for a patent through the Scientific American Patent Agency, it was found that the very same plan had already been patented by Benjamin Morrison, of Philadelphia, and Messrs. Leeds & Franklin then purchased Morrison's patent, which is here illustrated.

The engraving represents an envelope prepared in accordance with this plan. The hole is cut by a stamp, and may be of any form which fancy may sug-That preferred by the inventor is an oval, gest. crossed by bars at right angles in the form of a cross. The postage stamp is pasted upon the cross; adhering to both the letter and the envelope, and then the postmark is stamped over all, partly upon the envelope and partly on the letter.

By this arrangement, besides the preservation of a record of the date and place of mailing, the letter and envelope are fastened together, preventing the letter from being opened or abstracted, or a false envelope from being substituted for the genuine. The defacement of the stamp is also rendered certain by the opening of the letter.

The patent for this invention was granted June 19, 1860, and further information in relation to it may be obtained by addressing Leeds & Franklin, at 112 Broadway, New York city.

Tea Brands and their Meaning.

means "before the rains," or "flourishing son' spring," that is, early in the spring ; hence it is often called "Young Hyson." "Hyson skin" is composed of the refuse of other kinds, the native term for which is "tea skins." Refuse of still coarser descriptions containing many stems, is called "tea bones." "Bohea" is the name of the hills in the region where it is collected. "Pekoe" or "Pecco" means "white hairs," the down of tender leaves. "Powchong," "folded plant." "Souchong," "small plant." "Twankay" is the name of a small river in the region where it is bought. "Congo" is from a term signifying "labor," from the care required in its preparation.

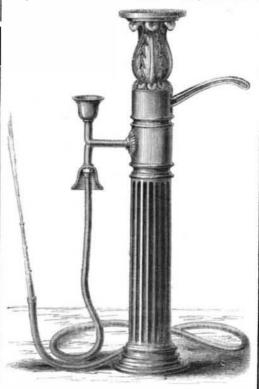
ABOUT 240 tuns of iron ore are raised daily for shipment at the Jackson Mine, Marquette, Lake Superior.

EDWARD HABBIS, manufacturer of fine woolens, at Woonsocket, R. I., is about crecting a new mill for the prosecution and enlargement of his business.

show a portion of the surface of the letter inside, | It would be well, therefore, to set one or two days apart at the close of every fair for public sales and deliverv.

INGLIS'S CUP ATTACHMENT FOR HYDRANTS.

It is well known that when cups are attached to hydrants by chains they are very liable to be detached and carried away, but the annexed cut represents a plan for attaching a cup which renders it perfectly secure, and sure to remain as long as it lasts.



The cup is formed on the end of the nozzle, the pipe being fitted to turn with a water-tight joint, so that in drawing water into a pail the end of the nozzle may be turned down. The pipe rises a little within the cup and has a screw upon its end to receive a hose.

Steps have been taken through the Scientific Amer ican Patent Agency to procure a patent for this invention, and further information in relation to it may be obtained by addressing the inventor, Samuel Inglis, at the office of the Chronicle, Pittsburgh, Pa.



THE BEST MECHANICAL PAPER IN THE WORLD VOLUME VII.-NEW SERIES.

The SEVENTH VOLUME of the NEW SERIES of the SCIEN TIFIC 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 ex-tended to this journal, and hope for a continuance of their support. The circulation of the SCIENTIFIC AMERICAN is far greater than

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 than home an output of with the publication. they have been connected with its publication.

The SCIENTIFIC ANERICAN is indispensable to every inventor, as it not only contains illustrated descriptions of nearly all the best inven-tions as they come, but each number contains an Official List of the Claims of all the Patentsissued 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.

No person engaged in any of the mechanical pursuits should thirk 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 en-gravings, and those of the first-class in the art, drawn and engraved by experienced artists, under their own supervision, expressly for this

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Useful and practical information pertaining to the interests of mil-wrights 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,

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Subjects in which planters and farmers are interested will be found liscussed in the SCIENTIFIC ANERICAN; most of the improvements in discu 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 early recorded therein. WAR! WAR! WAR!

Our summary of the war news, which has been so highly compli-mented by our readers and cotemporaries, will be continued in the coming volume so long as the war lasts, accompanied with copious it lustrations 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 The a lasting obligation upon us, and they shall be rewarded for it in the a non-map congenity upon us, and they shall be related to it in the improvement we shall be enabled to make in the paper by thus in-creasing our receipts. The following are the

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FROM THE STEAM PRESS OF JOHN A. GRAY