# Scientific American.

# orrespondents

F. N. B., of Wis.-Copper is superior to iron wire as an electric conductor, because it offers less resistance to the passage of the force. The coarse copper wire in the the helix is composed of several strands connected to gether. Iron wire is not suitable for a helix, because of its great resistance. Pure copper wire for making a ribbon coil is superior to tinned copper. The finer the wire, and the more numerous the convolutions, the more powerful will be the electro-magnet.

S. H. J., of Md.-In making surveys, you should do so upon'a meridian established by your own observations; but in making reports of your labors you should state this clearly, so that the difference between your results and the map, where it is established authority, may be made known.

J. W. C. of N. Y .- We have received your sketch and description of a propeller to be operated by a reciprocating motion, and to open and close like a duck's foot. This kind of propeller is older than the paddle wheel, and was invented by the Marquis of Worcester. You will find it illustrated in Vol. 5, Sor. AM. F. H. H., of N. Y.—The plan you propose to launch

the "Leviathan" is simply a dry dock. It would have been more to the credit of her designer and builder had they built such a dock before commencing her construction; but that is out of the question now. M. Brunel undoubtedly expected he could accomplish the launch more easily. F. A. L., of N. Y.-As a substitute for coal tar to

paint wooden posts and sills, where these enter the ground, use a paint composed of boiled linseed oil, as-phaltum, and red lead; its color will be deep brown. Introduce about three pounds of ground asphaltum into every gallon of oil, when boiling, and stir until it is dissolved, and then add red lead slowly, until the paint attains to the proper consistency for putting on with a brush. This paint is a good protection, but not quite equal to coal tar; but it soon dries, and the posts can be handled freely, which is not the case with the tar, as it does not dry, hus a very offensive odor, and a disagreeable appearance.

H. H., of Pa .- The sample of mineral you sent us for examination appears to us to be a slaty shale; we do not think there is much, if any, carbon in it. But this you can easily try for yourself, by placing it on a fire, and if it only becomes r : d-hot, without burning, you may be sure it is of no use. It is rather like an inferior slate found in this State.

E. D. T., of Ky .- Good concrete wall is made with common mortar and small stones. We cannot recom mend such a wall for building purposes; it answersvery well for some situations underground, in which cas hydraulic cement is employed for an outside coating.

J. R., of N. Y .- An engine of 12-inch bore, 16-inch stroke, and making 130 revolutions per minute, will require more steam than one of 10-inch bore. and 24-inch stroke, making 80 revolutions per minute, but it will give out more power. We would prefer the engine with the proportions of 10-inch bore and 24-inch stroke, if it is of sufficient size to do your work. Its valves do not require to be opened and closed so frequently as the one which makes a greater number of revolutions.

J. McM., of Ky.-A current of electricity does not produce an explosion when passing through free space, or on a good conductor. An explosion by electricity is caused by the passage of a current through a resisting medium. You cannot forma vacuum behind and before the piston in a cylinder by alternately heating a piece of spongy platinum at each end with a galvanic current. An explosive engine, with the use of gun cotton as the agent, is fur inferior to a steam engine in every sense. Do not waste time and money in such experiments. See our opinion given to another correspondent, on the same subject, in No. 18, this Vol., Sor. AM.

J. P., ofLa.-A whitewash made by adding to each bushel of lime, one pound of the sulphate of zinc is excellent for outhouses.

F. B., of Ala.—Any overshot wheel made of wood will soon go to wreck if the stream that drives it becomes dry during a part of each year. This is owing to the nature of the materials of which it is made. Were it entirely constructed of iron, it would endure much longer, but it is more expensive.

J. H. W., of Iowa .-- The cheapest and best ice-house which you can erect is simply a frame building, well boarded up inside and outside, in roof and sides, so as to leave a space between the boards, which should be stuffed with a good non-conductor, such as charcoal dust, dry sawdust, or if you cannot obtain these, use straw. Build the house above ground, and with a drain under the floor. This plan is simple, and the cost will be small.

E. R. B., of Conn.-In general a patent for a new article of manufacture covers the thing made as the specification describes. For example, a patent as a new article of manufacture for a pen-holder composed of gutta percha, would cover the making of pen-holders of the gum named. But it would not cover the making of any other article, nor the use of any other material. value of a patent of this character depends upon The the nature of the invention and upon the specification. In the supposed case, namely, mechanism wholly new it might be better to claim all the new features sepa rately

B. F. B., of Pa. -The best cement for iron and wood is a mixture of whiting, linseed oil, red lead and pounded glasswhichforms a hard and durable cement.

H., of N. Y .- There is no special rule for coloring mechanical drawings, as nearly every draughtsman employs some method of his own. All drawings should contain more or less color, and the idea is not peculiar ly French.

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T. W. B., of Ohio .- We do not consider it profitable to encumber our columns with abstruse mathematical questions which should be learned at school. Our ob-

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jects are rather to eliminate the results of the sciences as applied to arts in general, without undertaking to instruct in the more elementary principles. It is an error to suppose that "the books" do not contain the information you seek to promulgate. In Davidson's great work, out of which our small treatises are made, every difficulty in mathematics is touched upon, and the Encyclopedia Metropolitana has a still more elaborate treatise covering the whole ground

A. M. G., of Phila.-Many tinsmiths make their own spelter, by using half lead and half block tin. Melt the lead first in an iron vessel, then add the tin. When the two metals are melted and mixed together, run them out into molds. Phelps, Dodge & Co., this city, are large importers of spelter. J. W., of N. Y.—There is a boring tool which would

answer your purpose, but we can only give you an idea of it by drawings.

A., of R. I.-Nearly every sculptor uses a different clay for his modeling; but we cannot recommend you to a better than to take fine powdered clay, mix with it a little whiting, and work to any consistency you wish. The best work on anstomy, for young artists, is Wilson's; it is an English book, and published in this city by D. Appleton & Co.

F. D., of N. J.-We cannot give you the inventor's name, nor tell you how the article referred to is prepared.

Money received at the Scientific American Office on account of Patent Office business, for the week ending Saturday, January 9, 1858 :---

J. L., of Tenn., \$25; C. & M., of Iowa, \$35; L. B. S., of Conn., \$25; W. H., of N. Y., \$30; I. H., of N. Y., \$30; G. S. C., of Ill., \$30; II. R., of Ind., \$30; A. L., of Conn., \$30; C. V. W., of Mass., \$30; H. & J. S. B. N., of Maine, \$30; H. P., of Pa., \$55; J. K. B., of N. Y., \$25; C. H. E., of Wis., \$10; J. A. & F. D., of N. Y., \$30; W. & C., of Conn., \$30; T. R., of Pa., \$55; O. L. C., of Ill., \$115; M. V. A., of N. Y., \$50; C. & Q., of Mass., \$25; H. A. W., of N. Y., \$30; J. H., of Ill., \$25; A. C. R., of Conn., \$25; G. D., of Pa., \$25; J. S., of Ind., \$25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, January 9, 1858 :--

L. S. C. of N. Y.; J. C., of Mass.; C. C., of Pa.; J. J. A., of N. C. ; J. L., of Tenn. ; E. L. E., of R. I. ; W. L. C., of Va.; R. H., of N. J. ; C. J. R., of Md.; M. W., of N.Y.

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OWR PRINCIPAL OFFICE will be, as usual, at No. 128 Fulton street, New York. There is no othor city in the Union so easy of access from every quarter as this, consequently there are greater advantages in regard to the transmission of mo-dels, funds, &c., through the various channels that center in New York. Two of the partners of our firm reside here, and during the hours of business are always at hand to counsel and advise with investors. They are assisted by a corps of skillful Examiners, who have had many years of active experience in the preparation of cases for the Patent Office. Torenderour Patent Agency Department complete in every respect, we have established a BRANCH OFFICE IN THE CITY OF WASHINGTON.

BRANCH OFFICE IN THE CITY OF WASHINGTON,

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We especially require that all letters, models and re-mittances should be made to our address at New York. EXAMINATION OF INVENTIONS.

EXAMINATION OF INVENTIONS. We have been accustomed from the commencement of our business—twelve years since—to examine sketches and descriptions, and give advice in regard to the novel-ty of new inventions, without charge. We also furnish a printed circular of information to all who may wish it, giving instructions as to the proper method which should be adopted in making applications. This practice we shall still continue, and it is our purpose at all times to give such advice free and candilly to all who apply to us. In no case toult we advise an inventor to make appli-cation unless we have confidence in his success before the Patent Office. Our extensive experience in mechanical and chemical improvements enables us to decide adversely to nearly one half of the cases presented to us for our opinion, he-fore any expense has occurred in the preparation of the case for a patent. When doubt exists in regard to the novelty of an in-vention, we advise in such cases a PRELIMINARY EXAMINATION

#### PRELIMINARY EXAMINATION

PRELIMINARY EXAMINATION to be made at the Patent Office. We are prepared to conduct such examinations at the Patent Office through our "Branch Agency," upon being furnished with a sketch and description of the improvement. Our fee for this service will be \$5. After sufficient experience under this system, we con-fidently recommend it as a safe precautionary step in all cases before appplication is made for a patent—not that there will be no rejections under this system. It is impossible to avoid such results in many cases, owing to the exceedingly while range taken by the Examiners in the examination of cases; but, nevertheless, many ap-plicants will be source. Applicants who expect answers by mail must enclose stamps to pay return postage. THE COSTS ATTENDING AN APPLICATION

# THE COSTS ATTENDING AN APPLICATION

The costs ATTENDATE AN APPLICATION for a patent through art agency are very moderate, and great care is exercised in their preparation. No cases are lost for want of care on our part in drawing up the papers, and if the claims are rejected, we enter upon a speedy examination of the reasons assigned by the Com-missioner of Patents for the refusal, and make a re-port to our clients as to the prospects of success by fur-ther prosecution. A circular containing fuller information respecting the method of applying for patents can be had gratis at either of our offices.

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