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M. Shaw, Manufacturer of Insulated Wire for galvanic and telegraph purposes, &c., 259 W. 27th St., N.Y. F. C. Beach & Co., makers of the Tom Thumb Telegraph and other electrical machines, have removed to 530 Water Street, New York.

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J. N. P. will find directions for making fric tion matches on p. 75, vol. 29.—R. J. will find directions for nickel plating on p. 235, vol. 33.—J.N. will find the article on the friction of water in pipes on p. 48, vol. 29.-C. F. can remove moles from the skin by following the directions on p 347, vol. 32.—C. R. S. will find on p. 120, vol. 33. di rections for making muslin uninflammable.-J.F., M. M., W.G. E., B. P., M.T. B., H. A., and others who ask us to recommend books on indus trial and scientific subjects, should address the booksellers who advertise in our columns, all of whom are trustworthy firms, for catalogues.

beenlifted 33 feet 6 inches with a common lift pump. B. asserts that it never has been lifted higher than 32 feet. Which is right? A. Water was once raised 32 feet 11 inches by a lift pump at the Brooklyn navy yard. This is the greatest result of which we have heard.

(2) E. L. says: I have a small piece of sylvanite, said to yield \$40 gold to the lb. I suppose that it also contains tellurium and silver. I have used the blowpipe upon it and melted out a unequal.

large percentage of metal having a silvery apearance. How can I separate the gold from all other metals? A. Sylvanite contains 56 per cent of tellurium, 28 of gold, and 16 of silver. It frequently contains as well some antimony and lead. After complete roasting, dissolve in aqua regia; evaporate to dryness. Add a small amount of sulphuric acid, and dissolve as far as possible in water. From the concentrated solution, precipitate out the gold with a strong solution of green vitriol.

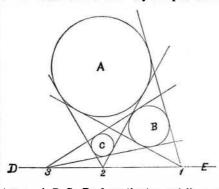
(3) A. O. W. says: I want to vulcanize rubber, and cannot get chloride of sulphur. Please give me the formula for it. A. Chloride of sulphur is obtained by passing dry chlorine gas slowly over molten sulphur, and collecting the product in a condenser. The sulphur should be heated until just at the point of volatilization, about 600° Fah. The impure chloride should be purified and freed from dissolved sulphur by redistillation. It is a reddish yellow fluid of a disagreeable odor, and boils at 280° Fah.

(4) A. C. G. asks: How can I make a composition of chalk or plaster of Paris for making molds that will not dissolve in water? And how can I take impressions or make molds in metal from natural objects? A. Molds of this character are not absolutely insoluble in water. Use 1 part of the finest chalk intimately mixed with 3 parts plaster of Paris. Place the object to be copied in a shallow tray, or other suitable vessel. cover every part of it with a thin film of olive oil, and then brush over it with a camel's hair pencil a thin cream of the finest plaster with waterin order to exclude all air bubbles: when this is done, pour over it immediately, and at one motion, the proper quantity of plaster, of a some what thicker consistence than that first applied. Allow the plaster plenty of time to set, and, when perfectly hard, remove it carefully from the object, dry perfectly in an oven, and heat to nearly the fusing point of the metal (type metal), then pour the metal in immediately. Where the nature of the surface of the object will not al low of a direct cast being taken from the object in plaster, a thick solution of glue is sometimes employed; when cold, the glue is very elastic and flexible, and may be removed from almost any object without danger of breakage. These casts may be reversed in plaster, and the plaster, in turn, in metal.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

N. V. W. -No. 1 is chlorite schist containing a small amount of carbonate of nickel. In large amounts it would be valuable. No. 2 is chlerite a hydrous silicate of alumina and magnesia, containing a small percentage of oxide of iron and sometimes a small amount of oxide of chromium No. 3 is chlorite schist.—S. D. S.—It is obsidian, or volcanic glass. The ancient inhabitants of Mexico, before their subjugation by Cortes, used it in making sacrificial knives. It is not employed at present.—A. N. T.—No. 1 is dolomite. No. 2 is calcite. No. 3 is coccolite. No. 4 is missing. No. 5 is a mixture of calcite with some siliceous rock -too indefinite to admit of separation. No. 6 is arenaceous limestone.—T. L.—The coal contains only a small percentage of sulphur, not enough to make it objectionable for the purpose you mention. It is a very compact variety of bituminous coal of excellent quality.-F. L. L.-The specimens you send us contain a considerable percentage of nickel, also chalcopyrite and iron pyrites.-H. W. S.-It is trap rock containing small specks of iron pyrites.-E.A.-Themineralfound near a lead mine is iron pyrites (sulphide of iron) in indurated clay. The other piece is shale.—E. W.—It is clay containing carboniferous matter of no particular value.—E. F. T.—The shell is made artificially of plaster of Paris moistened with a strong solution of alum together with the perfume, pressed into molds, and dried. The camphor cake contains pipe clay, chalk, magnesia and a little starch besides the camphor.-J. N. C. (Fredericktown, O.), G. H. (Windsor Locks, Conn.), C. P. (Marysville, Tenn.), S. N. (Forest Station, Shenandoah county, Va.), send us letters of inquiry as to minerals, but no specimens which we are able to identify. If correspondents will not put their names on the boxes which they send (and several such boxes come through the mail at one time) it is very difficult and in some cases impossible to identify the senders

D. M. asks: What preparation can be used ontenor drums, which will be waterproof and at the same time stand the beating?—J. B. C. asks: ls there any demonstration to the following theo rem? Drawthree circles of any unequal diame-



ters, as A, B, C. Produce the tangent lines, as shown, until they meet, from A through B, from A through C, and B through C. It will be found in all cases that the meeting points are in a straight line, as 1, 2, and 3 in the straight line, D E. The same result is obtained in whatever position the circles may be placed, or under any variations of their diameters, provided they are all

COMMUNICATIONS RECRIVED.

The Editor of the SCIENTIFIC AMERICAN ac knowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On the True Science of Religion. By T. B. McC. On Boiler Explosions. By T. J. B.

On Cutting Tools. By J. R. On Ventilation. By G. W. W.

On the United States Patent Association. By J A. R.

On the Expansion of Superheated Steam. By G. A. W.

On Steel. Ry G. W. T. On Aeronautics. By C. E. D. On the Mississippi Jetties. By A. S.

On Violins. By E. P. W. On Calipers. By E R.

Also inquiries and answers from the following: J. M. McF.-A. S.-F. O. H.-T. J. B.-F. W. N. J. H. D.-J. G.-R. F. W.-P. Q.-N. O.-A. W. K.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear shouldrepeatthem. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket. as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who sells castings for small steam engines? Who sells malleable glass lamp chimneys? Who sells foot power band saws? Who selis the flexible shafting exhibited at the Cen tennial? Whose is the best aneroid barometer? All such personal inquiries are printed, as will be observed, in the column of "Business and Person al." which is specially set apart for that purpose subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained

[OFFICIAL.]

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