## Business and Rersonal,

The Charge for Insertion under this head is One Dollar a Line for each insertion. If the Notice exceeds Four Lines, One Dollar and a Half per Line will be charged.

Trade Secrets—Valuable Recipes—Most Valuable Information for all Mechanics and Engineers. See "Wrinkles and Recipes," 250 pages. Splendidly illustrated. \$1.50, post paid. H. N. Munn, Publisher, 37 Park Row, New York city.

Agricultural Implements and Industrial Machinery for Exportand Domestic Use. R.H.Allen & Co., N.Y Town and Village Hand Fire Engines, with hose carriage and fittings, only \$350. Send for cuts and full information. S. C. Forsaith & Co., Manchester, N. H.

Wanted—To correspond with Manufacturers of small articles, cast or malleable iron. Clamp and Treadle, my improvements on Animal Trap. Patent granted August 1, 1876. Would sell some territory. Give price per lb. Homer S. Davis, Camp Brown, Sweetwater Co., Wyoming Territory.

D'Heureuse's Grain Process-Mashing quickened and perfected under pressure in brewing, distilling, preparing food for man and beast, &c., &c. Immens savings. Responsible agents wanted for Canada and U. S. R. d'Heureuse, New York P. O. Box 395.

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For Sale—Shop Rights to every Tool Builder for Bean's Patent Friction Pulley Countershaft. D. Frisbie & Co., New Haven, Conn.

Scroll Saw Patterns.—Send 3c. stamp for illus. Catalogue—200 designs. L. H. Russell, Stratford, Conn.

For Sale, Cheap—Centennial Shafting—In Machinery Hall: 3 complete lines, each 624 ft. long; 1 line 162 ft. In Pump Annex, 1 line 191 ft. In Machine Shop, 1 line 112 ft. In Agricultural Hall, 4 lines, each 182 ft.; 2 Driving Counter lines. All Cold Rolled. For full specifications and price, apply to Jones & Laughlins.

Picture-Frame Machine-Foot or Power, Makes 5 frames easter and better than 1 by old way. thing. \$80 to \$125. E.L. Eastman & Co., Washington, D.C.

Superior Lace Leather, all Sizes, Cheap. Hooks and Couplings for flat and round Belts. Send for catalogue. C. W. Arny. 148 North 3d St., Philadelphia, Pa.

For Sale—State Rights of Patent Safety Horse Hoppies; sells on sight. Address, for terms, circulars, etc.. J. F. Riesgraf, care of Box 773, New York city.

Wanted—Responsible agents or purchasers of ights for Canada patent ''d'Heureuse's Grain Pro-ess.'' Unground corn mashed in one hour, yield of spirits increased to 18 and 20 quarts per bushel. R. d'Heureuse, New York P. O. Box 395.

Magic Lanterns, Stereopticons, for Parlor Entertainments and Public Exhibitions. Pays well on small capital. 74 Page Catalogue free. Centennia Medal and Diploma awarded. McAllister, 49 Nassau St., N. Y.

Noiseless Exhaust Nozzles for Exhaust Pipes and Pop Valves. T. Shaw, 915 Ridge Av., Phila., Pa.

Shop Stoves-Brazil Foundry, Brazil, Indiana.

Boiler Punch, 6 Lathes, 9 ft. Planer. Brooks & Winebrener, 261 North 3d St., Philadelphia, Pa.

Fire Hose, Rubber Lined Linen, also Cotton, finest quality. Eureka Fire Hose Co., 13 Barclay St., New York.

Split-Pulleys and Split-Collars of same price, strength and appearance as Whole-Pulleys and Whole-Collars. Yocom & Son, Drinker St., below 147 North Second St., Philadelphia, Pa.

The Scientific American Supplement—Any desired back number can be had for 10 cents, at this office, or almost any news store.

500 new and second hand machines at low prices, fully described in printed lists. Send stamp, stating just what you want. S. C. Forsaith & Co., Manchester, N.H.

To stop leaks in boiler tubes, use Quinn's Patent Ferrules. Address S. M. Co , So. Newmarket, N. H.

Water, Gas, and Steam Pipe, Wrought Iron. Send for prices. Bailey, Farrell & Co., Pittsburgh, Pa.

For Solid Wrought-iron Beams, etc., see adver-isement. Address Union Iron Mills Pittsburgh, Pa. for litbograph, &c.

Solid Emery Vulcanite Wheels-The Solid Orignal Emery Wheel-other kinds imitations and inferior. Our name is stamped in full on all our best Standard Belting, Packing, and Hose. Buy that only. The best is the cheapest. New York Beiting and Pack-ng Company, 37 and 38 Park Row, New York.

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. Hyatt & Co.'s Varnishes and Japans, as to price

color, purity, and durability, are cheaper by comparison than any others extant. 246 Grand st., N.Y. Factory, Newark, N. J. Send for circular and descriptive price list.

See Boult's Paneling, Moulding, and Dovetailing Machine at Centennial, B. 8-55. Send for pamphlet and sample of work. B. C. Mach'y Co., Battle Creek, Mich.

More than Ten Thousand Crank Shafts made by er Steel Castings Co., now running; 8 years stant use prove them stronger and more durable than wrought iron. See advertisement, page 317.

Power & Foot Presses & all Fruit-can Tools. Fer-racute Wks., Bridgeton, N.J. & C.27, Mchy. Hall, Cent'l The "Abbe" Bolt Forging Machines and the

"Palmer" Power Hammers a specialty. Send for reduced price lists S.C.Forsaith & Co., Manchester, N.H.

Steel Castings, from one lb. to five thousand lbs. Invaluable for strength and durability. Circulars free. Pittsburgh Steel Casting Co., Pittsburgh, Pa.

For best Presses, Dies, and Fruit Can Tools, Bliss & Williams, cor. of Plymouth and Jay, Brooklyn, N. Y. For Solid Emery Wheels and Machinery, send to the Union Stone Co., Boston, Mass., for circular.

Hydraulic Presses and Jacks, new and second nand. Lathes and Machinery for Polishing and Buffing metals. E. Lyon, 470 Grand Street. New York.

Diamond Tools-J. Dickinson, 64 Nassau St., N. Y Shingle, Heading and Stave Machine. See advertisement of Trevor & Co., Lockport, N. Y.

"Dead Stroke" Power Hammers-recently great ly improved, increasing cost over 10 per cent. Prices reduced over 20 per cent. Hull & Belden Co., Danbury,Ct.



It has been our custom for thirty years past to devote a considerable space to the answering of questions by correspondents; so useful have these labors proved that the SCIENTIFIC AMERI-CAN office has become the factorum, or headquarters to which everybody sends, who wants special information upon any particular subject. So large is the number of our correspondents, so wide the range of their inquiries, so desirous are we to meet their wants and supply correct information, that we are obliged to employ the constant assistance of a considerable staff of experienced writers, who have the requisite knowledge or access to the latest and best sources of information. For example, questions relating to steam engines, boilers, boats, locomotives, railways, etc. are considered and answered by a professional engineer of distinguished ability and extensive practical experience. Enquiries relating to electricity are answered by one of the most able and prominent practical electricians in this country Astronomical queries by a practical astronomer Chemical enquiries by one of our most eminent and experienced professors of chemistry; and so on through all the various departments. In this way we are enabled to answer the thousands of questions and furnish the large mass of information which these correspondence columns present The large number of questionssent—they pour in upon us from all parts of the world-renders it impossible for us to publish all. The editor se lects from the mass those that he thinks most likely to be of general interest to the readers of the Scientific American. These, with the replies, are printed: the remainder go into the waste basket. Many of the rejected questions are of a primitive or personal nature, which should be answered by mail; in fact hundreds of corresspondents desire a special reply by post, but very few of them are thoughtful enough to enclose so much as a postage stamp. We could in many cases send a brief reply by mail if the writer wer to enclose a small fee, a dollar or more, according to the nature or importance of the case. When we cannot furnish the information, the money is promptly returned to the sender.

W. H. L. will find descriptions of steam canal boats on pp.15, 246, vol. 27, and on p. 350, vol. 36.—R. K. will find directions for galvanizing cast iron on p. 346, vol. 31.-J. T. will find directions for renovating worn files on p. 361, vol. 31.-W.D. M. will find a description of a hydrogen lamp on p. 242, vol. 31.—G. S. will find directions for dissolving rubber on p 119, vol. 28.—R. L. W. will find directions for making rubber stamps on p. 155, vol. 31.-A. D. will find directions for making farina (dextrin) from potatoes on p. 315, vol. 30 .- J. C. W. will find directions for cleaning shells on p. 122, vol. 27.—L. W., Jr., will find directions for engraving on glass on p. 375, vol. 33.-C. A. H. will find directions for dyeing felt hats black on p. 101, vol. 30 -A. C. will find an explanation of the ball and current of air puzzle on p. 262, vol. 35.—J. W. C. will find directions for condensing milk on p. 343, vol. 30.—M. G. will find directions for drilling glass on p. 218, vol. 31.—W. H. will find the article on the penetrating power of light on p. 180, vol. 33.—F. S. will find a d tion of infusorial earth on p. 296, vol. 35.—J. McG. will find directions for preserving eider on p. 11, vol. 31.—E. A. D. will find directions for making a magnethelix on p. 220, vol. 35.—F. B. will find directions for utilizing sawdust on p. 276, vol. 32. -H. E. will find a description of the templet odontograph on p. 181, vol. 35.-W. H. D. will find directions for painting theatrical scenery on p. 200, vol. 26.-R. should use black Japan varnish for lettering on marble.-G. S. should consult a dentist.-W. T. B. will find directions for making hard soap on pp. 331, 379, vol. 31. For toilet soaps see p. 289, vol. 28.—C. F. S. will find directions for purifying cistern water on p. 395, vol. 32.-F. B. will find that the best way to put bronze on paper is to draw the design in gold size, and dust on the bronze.—A. D. will find a good recipe for a white metal on p. 139, vol. 31.—W. J. E., M. F. B., F.N.P., W. G., W. F. H., R. J. B., G. S., and others who ask us to recommend books on industrial and scientific subjects, should address the booksellers who adertise in our columns, all of whom are trustworthy firms, for catalogues.

(1) D. Z. asks: How can I separate chloride of silver from sand? A. Dissolve in ammonia water, and reprecipitate the solution by the addition of an acid, or evaporate to dryness

Rhine wine which seems about to sour. How can I reclaim it? A. Heat a test portion to near the boiling point, add a little carbonate of iron, agitate briskly for a few moments, and filter. If this does not succeed, try a small quantity of lime water. Let us know how these succeed. Foul or sour wines are usually corrected by digestion with a little chalk or the white carbonate obtained from calcined oyster shells, also by agitation and digestion with charcoal or boneblack. and subsequent filtration or decantation. Salicylic acid has lately been employed to cure the rancidity or foulness of wines, and to check fermentation. In Germany varying quantities of grape sugar is added to some wines. 2. Do wines and liquors draw any copper from brass faucets: A. Many wines do exert a more or less solvent action upon copper, owing to the free acids which they contain. 3. How is  $\mathbf{H}_2\mathbf{S}$  most conveniently prepared? A. It is obtained by the action of diuted sulphuric acid on monosulphide of iron. The gas is ordinarily dissolved in cold distilled water as it comes over.

What fulminate is used in pistol cartridges, and how is it put in? A. We believe the mercury ful-

tures, of chlorate of potash, sulphide of antimony, sulphur, and gunpowder, and chlorate of potassa and amorphous phosphorus, are used to a limited extent.

(3) D. W. asks: How many lbs. pressure will it require to break a cast iron beam in the center supported at each end? The beam is 36 inches long, 13 inches deep, and 1 inch thick. A. About 100,000 lbs.

(4) C. E. E. says: I have a pleasure boat propelled by an engine 6 inches in diameter by 6 inches stroke, which makes 200 revolutions per minute, using steam at 100 lbs. pressure in the boiler, cut off at one half stroke. I wish to attach a surface condenser to it; please inform me of what size it should be, etc.? A Make the condenser with from 5% to 34 as much cooling surface as your boiler has heating surface. Use small tubes, quite thin, full particulars of which you can obtain from a manufacturer. If you only wish to condense the steam to use as feed water you can discharge it into a pipe immersed in the water, and use a small air pump. By this arrangement, which is in use on several small steamers, you do not require a circulating pump.

(5) A. M. asks: If I have a cylinder of 2 nches bore, with an airtight piston in it, how much pressure do I get by compressing the air into any fractional part of the cylinder? A. If the temperature of the air is kept the same, the pressure varies inversely as the volume. For the case in which there is no gain or loss of heat, see answer No. 26, October 7, 1876.

(6) J. F. asks: How can I make a paste or paint for marking flour sacks? A. The aniline colors are perhaps the best materials you could use for the purpose. There are, of course, many other marking fluids that might give proper satisfaction as to application, durability, etc; but they are al more or less difficult to extract from the fabric after application. The aniline colors may be removed completely and with facility by the addition to the washing water of a small percentage of spirit of wine or wood spirit.

(7) E. M. C. says: By what process can I soften plaster of Paris which fastens the brass burners to lamps? A. Use plenty of water and mechanical exertion.

(8) F. A. H. says: I have seen the idea advanced of lubricating sewing machines and other light machinery with glycerin. What do you think of it? A. It has been used, we believe, with very good results. Dilute it with water.

1. What is the difference between writing ink and writing fluid? A. In ordinary ink the iron salts and other ingredients are merely in mechanical mixture, being prevented from settling to the bottom by the addition of gums, etc. In the writing fluids, so-called, the ingredients are all in true solution. 2. What is copying ink? A. Copying inks contain sugar; in other respects they differ but little from ordinary inks.

(9) A. M. asks: 1. How can faded silver plated ware be restored? A. Have it replated. This is the cheapest and best method. 2. I have tried mercury dissolved in nitric acid, applied with a cotton rag; and though this solution gives a splendid appearance, yet it does not stick long. Is it hurtful to use spoons or forks thus silvered: A. The mercury is very poisonous.

(10) E. A. asks: Can you give your readers any more details concerning the recipe in your No. 17, vol. 30, for making compressed yeast? A. The precise mode of preparing this ferment is more or less a trade secret. Make the mash in the ordinary way, of 1 part of bruised barley malt with 3 parts of bruised rye, the mash being cooled with the fluid portion of the wash. Add sufficient yeast to start a brisk fermentation, gather the newly formed yeast as it rises to the surface, wash well with water, and place in a stout canvabag under a press, by which means it may be obtained as a stiff clayey dough. It is better to mix the yeast with from 10 to 20 per cent of potato starch. Many of your questions you can best answer for yourself, by experiment.

(11) T. R. A. asks: 1. What substance is the worst conductor of heat? A. The poorest heat conductors are found among organic substances: feathers, cotton, wool, straw, bran, wood, etc. 2. How may it be formed into a paste, to be baked and glazed as pottery ware is done? A

This is impracticable.
(12) T. A. J. asks: How can I collect mercury after it has been dissolved with nitric acid and diluted with water? A. Precipitate the mercury as oxide by the addition in excess of a strong solution of caustic potash or soda (caustic alkaii), decant the supernatant liquid, dry the precipitate, place it in an iron retort, the beak of thich or its connection just dips below face of cold water in a suitable vessel, and heat the retort strongly over a good coal fire until the pure mercury is all distilled over. It is advisable to wash the precipitated oxide of mercury well with water before drying it, previously to placing it in the retort.

How can I make a good carbon battery that will be strong and cheap? A. Place a suitable porous cup of unglazed porcelain in a glass or earthenware jar, and surround it with a thick piece of zinc. Fill the outer jar to within about 2 inches of the top of the porous cup with water to which add about 2 ozs. of strong oil of vitriol Place the plate of carbon in the porous cell, and surround it with a solution made as follows: In a pint of water dissolve 1 oz. of bichromate of potash, and add to this 2 ozs. of strong oil of vitriol; allow to cool before using. If the end of a copper wire of any length be connected, one with the carbon and the other with the zinc, the current will run through it from the carbon end to the zinc.

(13) H. G. W. asks: Why is it that, if we make a small hole through a piece of paper and minate is generally employed. Percussion mix- hold it up before the eye at a distance of about 1 the cellar, which has since been filled up with yel-

inch, and pass a needle down over the hole on the side next to the eye, the light appears to be cut off from the bottom first? A. As the images of all objects are inverted in the eye, when any object goes down, the image in the eye goes up; and as the rays of light cross in passing through small holes, the going down on one side is equivalent to going up on the other.

(14) I. G. O. asks: What is the best method to extract the oil from belts that have got saturated therewith? A. Wash with soap and warm

(15) E. F. asks: What acid can I use to clean dirty, already used benzine, to fit it for use again? A. It is easiest purified by distilla-

(16) W. J. says: I notice that the connecting rods of most of the small American engines are connected with their straps by means of bolts and one key. What advantage is there in using these bolts? Is not the gib and key just as good? A. If a connecting rod strap is held to the rod by a gib and key, the brasses must meet at the joint so that the key can be driven tightly home, thus locking the strap. If the joint of the brasses is left open so that driving in the key will take up the wear without baving to file off any of the face of the brasses at the joint, the key in no way acts to lock the strap at all. If the strap is locked to the strap by bolts, it is no matter whether the jointfaces of the brasses are left open or not; the strap will always be held securely in position, and its wear will be considerably less. The bolts hold the straps more securely and enable us to keep the length of the rod as nearly correct as possible by putting the key at one end inside and at the other end outside of the brasses, as shown on p. 490, vol. 2, of the Scientific American Sup-PLEMENT.

(17) S L. S. says: Does the use of coal oil on a mechanic's oilstone harden or soften it? A. It hardens stones of most kinds.

(18) S. N. M. asks: Is there not an error in the numbers given on p. 185, vol. 35, under title of "New Arrangement of the Spectroscope?" A. We have addressed Professor Young on the sub-ject, and his reply is as follows: "The numbers are both given wrong. Calculation assigns for the velocity of the sun's surface 1'246 miles per second. My observed velocity deduced from spectroscopic observations was 142 miles. At Buffalo I gave the number as 1.36, but I had neglected to apply a correction for the latitude of the point on the sun's limb at which the observation was taken, and this made a little more difference than I expected."

(19) C. S. asks: What metal or combination of metals would be best suited to take a sharp cast? The metal commonly used to take casts from paper molds scorches the paper, and I want something that melts at a much less temperature. A. Try the following fusible alloy, which fuses below the boiling point of water, at 201° Fah: Two parts of bismuth, one of lead, and one of tin.

(20) B. M. R. asks: When two shadows are brought near to each other, why do they seem to protrude toward each other and touch? A. The edges of shadows are not sharp, and when they are brought near together the edges overlap and become visible. When single, they were not vis-

How does thunder turn milk sour? A. It is done by the electricity in the atmosphere, which will coagulate the albumen in the milk; and it renders the sensitised gelatin, used in the carbon photo process, insoluble.

Do the trees of Australia turn their leaves edgeways to the sun? A. There are some instances in which they do, but not generally. The native trees are all evergreens. Some shed their bark and not their leaves. There are in Australia plums with the stones on the outside. There does not appear to be any general law governing the growth of vegetation there.

What is the cause of equinoctial storms? A. Observations extending over a large number of years show that we have more storms when the sun crosses the equator than at any other time.

What people of ancient Greece spoke the lanuage now called Greek? A. None.

(21) H. S. G. asks: Do you know of any eids or any process that will eat off common solder from a gold watch case? A. If the solder is what you say, strong nitric acid will remove it without injury to gold; but before you try the experiment, be sure that the watch case is of

(22) C. A. W. says: I am building a rustic find that after a time the bark begins to fall off, which of course disfigures it very much. Is there anything in the way of a varnish, etc., which would prevent this? A. The usual course is to remove the bark in the first place as neatly as possible, so as to preserve the smooth surface of the cedar intact. With a little care, this can still be done with your fence, and will save you further trouble in this respect.

(23) D. H. says: I am wearing a plaster with one zincand one copper plate connected by a wire. Will the verdigris which is formed, the skin being in contact with the copper, produce injurious effects? A. Possibly not verdigris, but other coppersalts may be formed that are as obectionable and injurious

(24) A. F. T. asks: 1. How can I dispel the bad odor arising from a damp wall indoors? A. If the wall is now papered, the bad odor may arise from the decay of the paper and paste. Strip off the paper and wash out the paste, etc. 2. How could this wall be best repaired, so that wall paper would stick and would not become discolored? The dampness was caused by water escaping into low clay, the dampness and bad odor only be- may conclude that, for good reasons, the Editor came apparent some five years after the filling declines them. The address of the writer should . Place vertical furring strips on the wall 12 inches apart, and lath and plaster it anew. 3. Could the dampness of the wall have been caused by grass growing alongside the wall on the outside? A. We think not. The dampness most probably comes upfrom the bottom of the wall by capillary attraction.

(25) A. C. asks: How can I make a steam siphon pump to raise water about 8 feet, using nothing but pipes and fittings? A. Such pumps, as ordinarily constructed, require nozzles of a peculiar form, and we scarcely think that you can accomplish the same object with common pipe

(26) H. & S. ask: 1. Do the journals of the crank shaft of an engine support the whole weight of the flywheel, or is it partly taken off by the centrifugal force? A. The whole weight of the wheel is in running balance. If it is unbalanced the centrifugal force will take off weight at one part of the stroke, and increase it at the other. 2. Our flywheel is 9 feet in diameter, with a rim 4 x 5 inches, which weighs 1,500 lbs. It is made in 12 segments, and bolted on 6 wooden arms 31/2 x 51/2 inches, made secure in a center by 12 bolts. Are we safe in running her at 100 revolutions? Size of engine is 10 x 20 inches, crank shaft 5 inches in diameter. A. Yes, if the wheel be well

(27) T. A. H. asks: What is diastase? A During the germination of seeds, the starch undergoes a species of fermentation and is converted into a mixture of dextrin and sugar, in which state it is assimilated by the young shoots. This conversion is due to the action of the pecuiiar ferment termed diastase, which exists in all germinating seeds during the act of growth, being probably merely albumen or gluten in a peculiar stage of decomposition. An impure solution of diastase may be obtained readily from malt or freshly germinated barley by grinding it, moistening it with half its weight of warm water allowing it to stand for a few minutes, and press ing out the liquid. Malt does not contain more than  $\frac{1}{500}$ th of its weight of diastase. Diastase is not a commercial article.

(28) E. W M. says: 1. Can you inform me through yourvaluable paper how an artesianwell is sunk? A.Sometimes a drill like an auger is used. In rock, a drill is necessary. 2. Are drive pipes sunk in the same way as artesian wells? A. In the driven well, a tube is sunk as fast as the hole is bored. 3. How do you ascertain when you have struck water? A. The presence of water can be ascertained by sounding, or by the aid of a small pump. It is by no means certain that an artesian well can be struck in any locality simply by boring.

(29) A. W. G. asks: Can you tell me what will render horn transparent, or nearly so, and sufficiently soft to be cut with a knife? It must harden again when dry. A. Try muriatic acid.

(30) G. H. asks: 1. I wish to bring water from a spring 3,000 feet distant. There is a fall of | 15 fcet, and there will be a head of 2 feet where the water enters the pipe. What quantity per day would be conveyed through a pipe 1 inch in diameter, and to what hight would the water be thrown at the lower end? A. The hight to which the water will rise at the discharge end of the pipe will depend upon the velocity. According to Weisbach's formula, if the pipe is straight and smooth, you can raise the water about 14 feet for a discharge of  ${}_{10}^{7}$  of a U.S. gallon per minute, or you can discharge about 2½ gallons per minute at the lower level of the pipe. 2. Will iron gas pipe

(31) J. E. D. asks: How high will water rise from a 1/4 inch or 1/4 inch jet if brought 1,200 feet in 1 inch pipe, with a fall of 18 feet? How many gallons per hour would flow through said A. With a well shaped discharge jet, 1/4 inch in diameter, you can probably throw a stream from 10 to 12 feet high, and discharge about 60 U. S. gallons per hour.

(32) S. D. P. Jr. says: Is it a settled fact that our best turbines yield a greater percentage of power from the same amount of water than overshot wheels of the best construction, especially where the stream is variable? A. In the case of a variable stream, experiments seem to show that there is an advantage gained by using a good turbine. When the head and discharge are constant, the principal advantages of turbines over overshot wheels consist in less weight and greater velocity, so that less gearing is ordinarily required.

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

G. A. C.—It is fool's gold (sulphide of iron).-H. M.—The scales are common potash mica. They are mixed up with sand and a little felspar.-J.K. Cal.—It is sulphate of lime.—J. K., Texas.—It is soda.-C. E.-It is diorite.

# COMMUNICATIONS RECEIVED.

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

On Steamships, Rigging, etc. By R. B. F. On Naval Appointments. By C.J. W. On Solar Phenomena. By C. T.G. On an Intra-Mercurial Planet. By W. M. R. f Also inquiries and answers from the following:

T. D.-R. W.-J. B.-G. M.-G, H.-D. L -W. B. G. J. D.-R. A.-S. O.-N. S. R.-C. S. P. F.

# HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear 

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.

Hundredsof inquiries analogous to the following are sent: "Who buys rabbit, raccoon, and musk rat skins? Who sells velocipedes? Who sells street car locomotives? Who makes match machinery? Who sells distilling apparatus?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal." 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.]

# INDEX OF INVENTIONS

Letters Patent of the United States were Granted in the Week Ending October 10, 1876,

AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list. neluding both the specifications and drawings, will be urnished from this office for one dollar. In ordering,

please state the number and date of the patent dand remit to Munn & Co., 37 Park Row, New York	esired,
_ <del>_</del>	-
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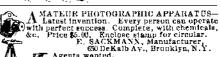
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