#### Business and Lersonal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue. The publishers of this paper guarantee to advertisers a circulation of not less than 50,000 copies every weekly issue.

Blake Crushers, all sizes, with all the best improvements at less than half former prices. E. S. Blake & Co., Pittsburg, Pa.

Comb'd Punch & Shears: Universal Lathe Chucks, Lambertville Iron Works, Lambertville, N. J. See ad. p. 333.

To Thrashing Machine Manufacturers.-The best, cheapest, and most durable Grain Tally. Can be attached to separators. Measures and registers correctly. Shop rights or entire patent for sale. Address A. H. Seavey, North Huron, Wayne Co., N. Y.

Agency Wanted to introduce some Novelty into Canada by a gentleman of ability. Address "Novelty," Aylmer, Ont.

The Friction Clutch Captain will start calender rolls for rubber, brass, or paper without shock; stop quick, and will save machinery from breaking. D. Frisbie & Co., New Haven, Conn.

Flanges, Pulleys, etc. P. Pryibil, 467 W. 40th St., N. Y.

You can get your engravings made by the Photo-Engraving Co. (Moss' process), 67 Park Place, N. Y., for about one-half the price charged for wood cuts. Send stamp for illustrated circular.

Hoisting Machinery of all kinds a specialty.

Castings of Crucible Steel, solid, act same as bar steel. Specialty: Cast Cast Steel Plow Shares. Agricultural Wrought Steels of every description. us. Read, McKee & Co., limited, Pittsburg, Pa.

For Sale,-Patent Automatic Planer Knife and Tool Grinder. Also Patent Friction Clutch and Pulley. Address E. S. Fernald, Saco, Me.

A Firm in Scotland, representing a New York Leather Belting House, are anxious to obtain another representation for American goods. Address B. J. H., P. O. Box 2701, New York.

Presses, and Dies that cut 500,000 fruit can tops without sharpening. Ayar Machine Works, Salem, N. J.

For Sale.—One Horizontal Steam Engine,  $20^{\prime\prime}$  x  $48^{\prime\prime}$  ; one 18" x 42"; one 16" x 36". Atlantic Steam Engine Works, Brooklyn, N. Y.

Wood Turning Lathes. P. Pryibil, 467 W. 40th St., N.Y

Light and Fine Machinery contracted for. Foot Lathe Catalogue for stamp. Chase & Woodman, Newark, N. J. Empire Gum Core Packing is reliable; beware of iminimeters, and Paper Mills. Large knife works specialty. Also manufacturers of Soloman's Parallel Vise. Taylor, Stiles & Co., Riegelsville N. J. tations called Phoenix. Greene, Tweed & Co., 18 Park Place, N. Y.

Box-bell, \$1 50. Bell, Battery, and Push Button, \$3. All first-class. H. Thau, 128 Fulton St., N. Y.

Situation Wanted.—Have had tenyears' experience as mechanical superintendent of a large sewing machine business. Understand mechanical drawing, tool making, etc. Best of references. Particulars by letters. Address K., Bo x254, Guelph, Ontario, Canada.

The Genuine Asbestos Steam Pipe and Boiler Coverings are the most durable, effective, and economical of any in use. H. W. Johns Manufacturing Company, 87 Maiden Lane, New York, are the sole manufacturers.

A Gentleman, now Foreman in a large Manufactory. possessing inventive ideas, a first-class draughtsman, theoretical and practical machinist, desires to change his present position for one in which he may have a bet-ter chance to employ his skill in all kinds of scientific or industrial machinery. Address, for ten days, F. Lambert, 365 12th St., South Brooklyn, N. Y.

See Staples & Co.'s advertisement of Non-Congealable Lubricating Oils on inside page.

Metallic Articles Colored in Single or Rainbow Colors. New Process. High cost metals imitated in cheaper metals. Gardiner M'f'g Co., Newburyport, Mass.

For best Fixtures to run Sewing Machines by Power, address Jos. A. Sawyer & Son, Worcester, Mass

Thomas D. Stetson, 23 Murray St., New York, serves as Expert in Patent Suits.

The Baker Blower ventilates silver mines 2,000 feet deep. Wilbraham Bros., 2318 Frankford Ave., Phila., Pa. Wheelbarrows. - The "A. B. C. bolted" will outlast five ordinary barrows. \$24 per doz. A. B. Cohu, 197 Water St., N. Y.

Park Benjamin's Expert Office, Box 1009, N. Y. Recipes and information on all industrial processes

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

Nickel Plating.-Sole manufacturers cast nickel anodes, pure nickel salts, importers Vienna lime, crocus, etc. Condit, Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

olf\_Preservation, 300 nages Price, only \$1. fifty valuable prescriptions, either one of which is worth more than ten times the price of the book. Illustrated sample sent on receipt of 6 cents for postage. Address Dr. W. H. Parker, 4 Bulfinch St., Boston, Mass.

Wright's Patent Steam Engine, with automatic cutoff. The best engine made. For prices, address William
Which Manufacturer Newburgh N. Y.

RESUME OF YELLOW FEVER. (Quarantine and Home Sanitation.) By A. Clen Wright's Patent Steam Engine, with automatic cut-

For Solid Wrought Iron Beams, etc., see advertise. ment. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Presses, Dies, and Tools for working Sheet Metal. etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y. Lathes and Machinery for Polishing and Buffing Metals. E. Lyon & Co., 470 Grand St., N. Y.

Steam Excavators. J. Souther & Co., 12 P.O. Sq. Boston. Bradley's cushioned helve hammers. See illus. ad. p. 302.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Noise-Quieting Nozzles for Locomotives and Steamboats. 50 different varieties, adapted to every class of engine. T. Shaw, 915 Ridge Avenue, Philadelphia, Pa. cialty, by E. & B. Holmes, Buffalo, N. Y.

Solid Emery Vulcanite Wheels-The Solid Original Emery Wheel – other kinds imitations and inferior. Caution.—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 Being Company, 37 and 38 Park Row. N. Y. New York Belting and Pack

For best low price Planer and Matcher, and latest improved Sash, Door, and Blind Machinery. Send for descriptive catalogue to Rowley & Hermance, Williams-

Eclipse Portable Engine. See illustrated adv., p. 318.

Special Wood-Working Machinery of every variety. Levi Houston, Montgomery, Pa. See ad. page 269,

Sheet Metal Presses, Ferracute Co., Bridgeton, N. J. Latest improved methods for working hard or soft writer. metals, grinding long knives, tools, etc. Portable Chuck Jaws and Diamond Tools. Address American Twist

Drill Co., Woonsocket, R. I. For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Company, Buffalo, N. Y.

Diamond Planers. J. Dickinson, 64 Nassau St., N. Y. Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Sawyer's Own Book, Illustrated. Over 100 pages of valuable information. How to straighten saws, etc. Sent free by mail to any part of the world. Send your full address to Emerson. Smith & Co., Beaver Falls, Pa.

Eagle Anvils, 9 cents per pound. Fully warranted. Repairs to Corliss Engines a specialty. L. B. Flan-

ders Machine Works, Philadelphia, Pa. Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus'd adv. p. 30.

Elevators, Freight and Passenger, Shafting, Pulleys. and Hangers. L. S. Graves & Son, Rochester, N. Y. The Horton Lathe Chucks; prices reduced 30 per cent.

Address The E. Horton & Son Co., Windsor Locks, Conn \$400 Vertical Engine, 30 H. P. See page 350.

No gum! No grit! No acid! Anti-Corrosive Cylinder Oil is the best in the world, and the first and only oil that perfectly lubricates a railroad loco-motive cylinder, doing it with half the quantity required of best lard or tallow, giving increased power and less wear to machinery, with entire freedom from gum, stain, or corrosion of any sort, and it is equally superior for all steam cylinders or heavy work where body or cooling qualities are indispensable. A fair trial insures its continued use. Address E. H. Kellogg, sole manufacturer, 17 Cedar St., New York.

Emery Wheels for various purposes, and Machines at reduced prices. Lehigh Valley Emery Wheel Company, Weissport, Pa.

Magic Lanterns and Stereopticons of all prices. Views illustrating every subject for public exhibitions. Profitable business for a man with small capital. Send stamp for 80 page illustrated catalogue. McAllister, Manufacturing Optician, 49 Nassau St., New York.

Patent Steam Cranes. See illus. adv., page 351

Company, Philadelphia, Pa.

National Steam Pump. Simple, reliable, durable. Send for catalogue. W. E. Kelly, New Brunswick, N.J.

Renshaw's Ratchet (short spindle) uses taper and square shank drills. Pratt & Whitney Co., Hartford, Ct. Electro-Bronzing on Iron. Philadelphia Smelting

Improved Steel Castings; stiff and durable; as soft easily worked as wrought iron; tensile stre less than 65,000 lbs. to sq. in. Circulars free. Pittsburg Steel Casting Company, Pittsburg, Pa.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box423, Pottsville, Pa. See p. 349. Rue's New "Little Giant" Injector is much praised for its capacity, reliability, and long use without repairs. Rue Manufacturing Co., Philadelphia, Pa.

Catechism of the Locomotive, 625 pages, 250 engravstood book on the Locomotive. Price \$2.50. Send for a catalogue of railroad books. The Railroad Gazette, 73 Broadway, New York.

The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher. Schumm & Co., Philadelphia, Pa. Send for circular.

Steam Engines, Automatic and Slide Valve; also Boil-Woodbury, Booth & Pryor, Rochester, N. Y. See illustrated advertisement, page 285.

 $\bf Microscopes,$  Optical Instrm's, etc. G. S. Woolman, 116 Fulton St., N. Y.

#### NEW BOOKS AND PUBLICATIONS.

VAN NOSTRAND'S SCIENCE SERIES.

Numbers 45 and 46 of these reprints are respectively: Thermodynamics, by Henry T. Eddy, C.E. Ph.D., of is to bring the center of gravity as much below the water the University of Cincinnati; and Ice Making Machines, line as possible, as it seems to me that by so doing we The Secret Key to Health.-The Science of Life, or translated from the French of M. Ledoux, mining engition of the fundamental and simplest applications of form of midship section does not determine the best cipitation from solution of its sulphate with zinc) are thermodynamics; the latter discusses theoretically the model. What you propose would probably be fastest in conditions of effective working of the three classes of deep water and strong winds, but the light draught fastice-making machines.

dinen, M.D.

Abstract of report by Dr. Clendinen, as chairman of Committee of Intelligence, District Society of Bergen County, New Jersey, first printed in the Transactions of the State Medical Society. The author has brought to-Hydraulic Presses and Jacks, new and second hand. gether a good many facts in the history of yellow fever, always imported, and denies the efficacy of quarantine losses, leaves 24 horse power to prevent its occurrence when local conditions are favorable.

> A CATECHISM OF THE MARINE STEAM EN-GINE. By Emory Edwards. Illustrated. Philadelphia: Henry Carey Baird & Co. 12mo, 374 pages. Price \$2.

Offered as a practical work for practical men. espe-

profession. For such men it is likely to prove very serviceable. They will at least find no trouble in understanding what the author has to say, his language being admirably simple, direct, and free from mathematical or scientific affectation.



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the

Names and addresses of correspondents will not be given to inquirers.

 $\label{eq:weighted} \textbf{W}\,e\,\text{renew}\,our\,\text{request}\,\text{that}\,\text{correspondents}, \text{in}\,\,\text{referring}$ name the date of the paper and the page, or the number of the question.

a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. Persons desiring special information which is purely

of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration

Any numbers of the Scientific American Supple-MENT referred to in these columns may be had at this office. Price 10 cents each.

(1) O. R. writes: Your recipe on shoe dressing is very good. I find that the different ingredients give a good black liquid, which makes the leather smooth, soft, and black, but without gloss. Can you inform me how to obtain a gloss? A. Increase the percentage of shellac and ammonia.

required in a ditch to carry the water three miles an tracted to 34 inch just at the lower nozzle, the other hour, provided the ditch is straight. A. The flow of water in the ditch would depend upon the character of the soil and smoothness of the surface. 2. Could you refer me to some reliable work that treats on running contracted just at the outlet the friction will be least. water and ditching, etc.? A. "Fanning on Water Supply Engineering "is a good work.

(3) "Atlas" asks how to mount maps on cloth, and best kind of paste and fabrics for purpose. A. Stretch smooth factory cloth upon a frame and coat Machine Knives for Wood-working Machinery, Book it with glue size. Before this dries, apply a strong flour paste to the back of the map and lay it smoothly on the cloth. Let it remain until perfectly dry. If the map is to be varnished, apply two or three coats of isinglass size, and after it becomes thoroughly dry flow on a coat of varnish consisting of balsam of fir diluted to the proper consistency with turpentine.

(4) J. P. asks: 1. Can a current of electricity be generated by an electro-dynamic machine, without the use of either a battery or permanent magnets to charge the machine with? A. Yes; see Supple-MENT, No 161. 2. What is the electromotive force of the Grenet battery when first connected? How long after it is put in action will it maintain its strength, and to what extent will the force of current decrease? A. 1.095 volt. The strength of the current diminishes quite rapidly if the battery is allowed to remain in action any considerable length of time continuously. It is not adapted for a continued use, but where a strong cur- 159. rent is required occasionally for a few minutes at a time it answers a good purpose. 3. What form of battery best combines strength of current, constancy, and economy? A. Bunsen's, or some of its modifications.

(5) E. M. C. asks: Is there an easy way of distinguishing between 8vo, 12mo, 16mo, 18mo, and other sizes of books, by those not practical printers, The most accurate, complete, and easily under- and what is it? A. Count the pages between printers signatures (letters or figures) at the foot of page

> (6) O. M. S. asks: Is a lightning rod supported upon large insulators and having no ground connection, supported by any scientific authority that you know of? A. No.

(7) J. S. B. writes: The yachts in use here, of which there are many, are built on a flat model. They are very broad beam, the beam in some cases being about 2-5 of the length, and usually light draught. They are without keels, but furnished with center boards. Now, I am thinking of building a yacht, upon a deeper and narrower model, withkeel. How will the two compare for lime in powder, moisten the mixture with soft cold New speed? And how would it do to make the keel in latter York: D. Van Nostrand. Price 50 cents. model in whole or part of iron, heavy enough so that ordinarily no other ballast will be needed? Myobjectinthis cessary. would be able to sail closer to the wind without going claim? A. 20 to 30 parts finely blended copper (made over. Would my plan have that effect? A. The mere est in light winds. The iron keel is good and should be heavy; do not make your cross section too full below.

(8) F. M. D. asks what is the horse power of an engine of 61/2 inch cylinder, 14 inch stroke, 70 lb. tin or gold. When heated it becomes plastic, but does pressure, 180 revolutions. I am running an engine of that size, there has been quite a dispute about it. One man said it was a four horse, another said 20. I think it about an 8 horse. A. If you are working 70 lb. pressure on the piston, whole stroke, the available power is which he finds well described by Hippocrates, 2,240 about 24 horse power. By actual calculation it is 32 a flange or its equivalent around the discharge opening, years ago. He does not believe that the disease is horse power; deducting 25 percent for friction and other The adherence of the paper to the end of the tube is due

(9) "Inventor" writes: I want to connect an engine or engines to a shaft running 390 or 400 revolutions per minute; how small ought the cylinders to be to give me 8 or 9 horse power, and what size upright tubular boiler will furnish steam? Can I run the engines with success? How many engines are necessary? A. A 6 inch cylinder and 8 inch stroke will give you the Stave, Barrel, Keg, and Hogshead Machinery a specially for young and inexperienced engineers, mechanics, power you want. A vertical tubular boiler should have calendar; and our Alaskan islands by their taking their and firemen, who wish to adopt marine engineering as a at least 220 feet heating surface. To run at such high time from San Francisco.

speed successfully, everything must be well proportioned and nicely fitted.

(10) J. F. asks: What is the best method of easily and economically separating in large quantities of salt water, the calcium magnesia. etc., so that the salt will remain pure? A. There are three methods employed for separating salt from calcium magnesia, etc.: a, by evaporation of the water by aid of the sun's heat; b, in winter by freezing; c, by artificial evaporation. The first method is generally used on the coast lines of southern Europe. The arrangement of the salines or salt gardens is as follows: On a level sea shore is constructed a large reservoir, which by a short canal communicates with the sea, care being taken to afford protection against the inroads of high tides. The depth of water in these reservoirs varies from 0.3 to 2 meters. The sea water is kept in the reservoir until the suspended matter has been deposited, and is then conveyed by a wooden chanto former answers or articles, will be kind enough to nel into smaller reservoirs, from which it is conducted by underground pipes to ditches surrounding the salines, where the salt is separated from the water. The salt is Correspondents whose inquiries do not appear after collected, placed in heaps on the narrow strips of land which separate the ditches from each other, and sheltered. As these heaps are left for some time, the deliquescent chlorides of magnesium and calcium are absorbed in the soil, consequently the salt is comparatively pure. If the salt water is derived from salt wells or springs, the brine is immediately boiled down. This boiling generally requires several weeks, the scum being removed and the soda and calcium sulphates deposited removed with perforated ladles. As soon as a crust of salt is formed on the surface of the liquid a temperature of 50° C. is maintained. At this stage the salt is gradually deposited at the bottom of the pan in small crystals, and being removed, is put into conical willow baskets, which are hung on a wooden support over the pan to admit of the mother liquor (which contains the greater part of the magnesium and calcium chlorides) being returned to it. Finally, the salt is dried and packed in casks.

(11) G. S. T. writes: A reservoir is 60 rods (2) H. C. asks how much fall would be i distant, descent 40 feet. One pipe of 1% inch bore con pipe of 11/2 inch bore for 20 rods, 1 inch bore for the next 20, and the last 20 rods of % bore. Which of the above will convey more water? A. In a 1½ inch pipe

> (12) T. M. J. asks: 1. Will the water, if conveyed to the boiler in a 2 inch pipe, force itself into the boiler against a greater steam pressure than (say) in a 1/2 inch pipe? A. No. 2. In "Peck's Natural Philosophy" there is an illustration of how a cask was bursted, by filling the cask with water from the top of a tube 34 feet long. Will the heavier weight of water in a large pipe not add materially to pressure per square inch at the lower end of the pipe? A. No. 3. Could I overcome any resistance in the boiler by letting the water into the boiler through a funnel or a small hole on the principle of an injector? A. You cannot, unless you use an in-

> (13) J. R. H. asks: 1. Can exhausted steam be used to heat up a workshop? A. Yes. 2. In what way does it affect the working of an engine? A. Produces a little back pressure on the piston. 3. And what per cent of power is lost between exhausting through a pipe 20 feet long, and one 120 feet long? A. Difference is not appreciable if pipe is large.

> (14) G. E. T.-You will find directions for making batteries in Supplements, Nos. 157, 158, and

> (15) W. H. B. asks, Does the microphone strictly magnify the sound or only transmit it? A. It merely transmits it.

> (16) C. K. M. asks: 1. What is the best method of magnetizing a rat tail file 15x1/2? A. Inclose the file in a helix made of about 50 feet of No. 16 insulated wire, and connect the helix with 4 or 6 cells of carbon battery. 2. Can I magnetize it with an ordinary Daniells battery, by wrapping it with insulated copper wire? A. Yes, by using 6 or 8 cells.

> (17) S. G McM. asks: 1. Will a etlephone that is constructed as described in Supplement, No. 142, work when the coil is made of No 30 wire? If not. will it with No. 32? A. No. 30 wire is too coarse. No. 32 might answer, but the results would not be satisfactory. Use No. 36. 2. What size should the connecting wire be if made of copper? A. No. 18 will do.

> (18) A. S. B. asks: How can I take grease out of marble? A. Mix sal-soda with two parts of quickwater, coatthemarble with this, and letit remain twelve hours. Then wash with water and a little soap if ne-

> (19) J. D. asks: How can I make an alloy of copper which will attach itself to glass, metal, or porby reduction of oxide of copper with hydrogen or premade into a paste with oil of vitriol. To this add 70 parts of mercury and triturate well; then wash out the acid with boiling water and allow the compound to cool. In ten or twelve hours it becomes sufficiently hard to receive a brilliantpolish and to scratch the surface of not contract on cooling.

(20) A. L. C. asks why a piece of paper cannot be blown off the end of a tube if it is simply placed over the tube at one end with nothing to fasten it. A. This phenomenon occurs only when the tube has horse power; deducting 25 per cent for friction and other The adherence of the paper to the end of the tube is due to a vacuum formed on the surface of the card by the lateral discharge of air. This subject is fully treated in an article on the ball puzzle in Supplement, No. 51.

> (21) A. H. asks: Where on the globe will the new year 1880 be greeted or welcomed first? A. In New Zealand most probably; possibly a little earlier at some English missionary station in Polynesia. Eastern Siberia is ruled out of the reckoning by the Russian

(22) L. P. B. writes: I wish to know what gives the kind of ink used with the hectograph the peculiar bronze luster? A. The ink consists of a strong olution of aniline violet, which crystallizes on the paper in drying

(23) W. C. B. asks what will remove iodine from marble. A. Try strong aqua ammonia.

(24) A. B.-Laboulbène recommends for the preservation of insects in a fresh state plunging them in a preservative fluid consisting of alcohol with an excess of arsenious acid in fragments; 11/2 pint alcohol will take about 14 troy grains of arsenic. The living insect, put into this preparation, absorbs about 3-1000 of its own weight. When soaked in this liquor and dried, it will be safe from the ravages of moths, Anthrenus or Dermestes. This liquid will not change the colors of blue, green or red beetles if dried after soaking from twelve to twenty-four hours. Hemiptera and Orthoptera can be treated in the same way. The nests, cocoons, and chrysalids of insects may be preserved from injury from other in sects by being soaked in the arseniated alcohol, or dipped into benzine or a solution of carbolic acid or creosote.

(25) W. H. M. asks (1) whether methyl chloride is an article of commerce and whether it is expensive. A. No; it is a colorless gas at ordinary temperatures and pressure; it is condensable to a liquid at minus 22° C. To keep it in the liquid form it must be stored in very strong and hermetically sealed vessels. 2. Would it be necessary to produce pressure with the article, before evaporating, to produce a low temperature? If so, how much; if not, how low might the temperature be reduced by the use of an air pump to produce a vacuum and beginning at normal temperature and pressure? A. Exposed to the air it (the liquid) evaporates with great rapidity, its temperature falling below 0° F.; in vacuo this evaporation of course proceeds more rapidly than in air, and hence the reduction of temperature is greater. The greater the amount of liquid evaporated in a given time the lower the temperature attainable. 3. How large a quantity of methyl chloride should be used to produce appreciable results?

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

C. W.-The substances you send for examination are as follows: 1 Red sandstone. 2. Calcite. 3. Hedenbergite. 4. Artificial. 5. Red granite. 6. Graphite in calcite. 7. Epidote. 8. Satin spar in dolomite. 9. Coccolite. 10. Dolomite. 11. Quartzite. 12. Hornblende. 13. Clinochlore. 14. Chlorite. 15. Natrolite. 16. Spodumene. 17. Calcite. 18. Iceland spar. 19. Limonite. 20. Decomposing feldspar.-O. E. C.-The sample is an impure Berlin blue containing alumina (from the alum used in its manufacture).-N. C.-The rock consists of serpentine, hornblende and quartz with copper and iron sulphurets (chalcopyrite and pyrite). E. E.-The rock is a talcose slate. Some of it would doubtless answer very well for furnace linings if it can be worked economically .- H. S .- Amygdaloid trap, semi-decomposed—it contains opal quartz.—R. G. V.— No. 1 is rutile—titanic acid—oxygen 39, titanium £1—100. No. 2. Titaniferous sand, mennoconite. No. 3. Ferruginous quartz containing crystals of rutile and iron pyrites, also probably gold.-W. K.-The quartz contains nothing of value.—G. W. K.—It is clear quartz rock. Useful for glass making.—O. B.—The iron ore is hematite of excellent quality.—J. C. M.—No. 1. Gypsum, lime sulphate. No. 2. Calcite, lime carbonate. No. 3. Malachite and azurite, carries traces of silver. No. 4 Contains clay, sand, and lime phosphate.-J. M. F.-It is the mutilla occidentalis, quite common in the Southern States.

### COMMUNICATIONS RECEIVED.

On Ice Yachts. By J. E. K. On Improvements in Telephones. By T. L. W. On Measuring the Uneclipsed Portion of the Sun's Diameter. By L. L.

On a Curious Bone Formation. By E. L. W. On the Great Wheat Belt of the United States. By J.

On Patent Temperance Reform. By L. J. F. On New Motive Power. By W. M. M. A Theory of the Tides. By W. B., Jr. On Salling Ice Boats. By H. R. B.
On Paraffine in Oil Wells. By D. F.
On the Velocity of Ice Boats. By P. F. S. On Small Steamers. ByJ. A. W. The Law of Dust Explosions. By A. D. On the Speed of IceBoats. By T. S. S. On Making Copying Ink. By C. F. L. On Explosion of Dynamite. By N. R.

[OFFICIAL.7

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Letters Patent of the United States were Granted in the Week Ending

November 4, 1879,

#### AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired. and remit to Munn & Co., 37 Park Row, New York city.

Acid, making tartaric, H. Goldenberg 221,297	Loom shuttle spindle, O. P. Richardson 221,191
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	Cash register and indicator, J. & J. Ritty	221,360	!
	Chain, ornamental, A. Horst	221,177	1
	Clock escapement, C. E. Lord	221,310	
	Clock pendulum, H. Camp	221,210	)
	Clothes wringer, S. A. Bailey	221.271	
	Cock, J. Dewrance	221,376	
	Creaming can, J. S. Farley Cultivator, J. Dierdorff		
	Demijohns and bottles, lock stopper for, H. R. Gillingham	221,228	į
	Dental drill, A. Hartman (r)  Deodorizing and disinfecting, process and appar-	8,958	
	atus for, J. M. Hirsh	221,280	١.
	Drawer support, J. C. Hirsch	221,312	
	Dyestuffs, preparation of, M. Wise Earring, W. A. L. Miller	221,178	
	Electric machine, dynamo, G. Lecoq Electro-magnetic machine, L. Drescher	221,327	1
	Elevator bucket, W. G. Avery Envelopes, cutting instrument for, I. W. England	221,207	1
	Equalizer, three horse, R. Scott	221,367	1
	Fence wire, barbed, S. H. Gregg	221,300	
	SanchezFile and holder, paper, J. C. Moore	221,365 221,339	;
	Filter, water, T. Tripp.  Firearm lock, A. E. Barthel.	221.198	3
	Firearm, magazine. J. Lee	221,328	3
	Firearm, revolving, A. E. Barthel Firearm, revolving, A. Hyde	221,171	
	Fire escape, F. P. Mankin Furnaces, the gases from coking coal, process and		
	apparatus for utilizing in, L. Stevens Gleaner and binder, E. W. Jenkins		
	Gold, etc., apparatus for concentrating and amalgamating, J Patterson		
	Governor, steam engine, F. Fosdick Grinding mill, J. Stevens	221,371	
	Hair spring stud, Monday & Doherty Hame, sheet metal, J. S. Brown	221,211	l
	Harness makers' use, machine for, J.B.Underwood	221,156 221,373	
	Hat and cap, E. P. Hoyt		
	Hav rack, J. Boyd	221.279	
	Heating and cooking furnace, gas, H. Q. Hawley. Hides, machinery for stocking, unhairing, and	221,169	1
	softening, R. Middleton	221,301	Ι.
	Hinge, spring, W. Gilfillan Hinge, stop, J. M. Dodge.	221.168	2
	Hoe, T. B. Lockwood Honey box for beehives, C. H. Connolly	221,242	2
	Hoop machine, R. H. Nogar	221,344	ŀ
	Horse power jack. A. Wissler  Horses' hoofs, moisture and pressure pad for, D. C. Baker		
	Horseshoe, J. K. Oneil	221.347	7
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	Hub sand band, W. H. Stevens Incubator, J. L. Campbell	221,256	3
	Indicator, W. L. Brownell	221,212	2
,	King bolt, clip, L. Pentz	221,18	4
	Kneader, dough, J. W. & A. Ruger Knit mittens, manufacturing, E. H. Pearson	221,351	ı
	Lamp, Aikman & Osborn Latch, A. Wimmer Lathe, turning, J. H. Howell	221,26	1
	Leather, removing extractive matter from tanned,		
	Plumer & Kerans Letterpackage clasp, J. W. Ripley	221,359	9
,	Level, pendulum, I. S. Winter	221,15	0
,	Lifting jack for vehicles, L. Haverstick Loom, J. W. Drummond (r)	221,230 8,953	3
ì	Loom, circular, J. J. Greenough (r)	8,955	
	ting, L. J. Knowles 221,237, 221,238, 221,239,	221,240	)

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	Metallic plates, manufacturing ornamented, W.		F
	M. Hedges	221,231	(
i	Motor, F. M. Morgan	221,340	j
	Musical instrument, mechanical, E. P. Needham. Neck band shaper, F. I., Volk	221,374	1
i	Nut lock, W. Gray Optometer, Klein & Giering	221,299	, I
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	Oyster feeder, J. Langrall	221,202	
1	Padlock, permutation, W. Walker		
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	Paper box, A. Matchett		(
	W. F. Hunt Paper cutting machine, G. R. Clarke et al	221,216	١,
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	Pulp screen. revolving, W. L. Longley	221,330	
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	Rope clamping hook, J. Robertson	22 <b>1,</b> 361	1
	Sash balance, W. Milner	221,182	1
,	Saw mill buffer, reciprocating, J. D. Wilson Saw mill dog, J. Little	221,379 221,176	. 1
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	Scalloping machine, F. Banson	221,303	
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İ	Shirt, T. M. & E. Denham		
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٠.	Steam engine, A. Ehret	221,224	
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7	Cigars, cigarettes, and smoking and chewing t		
9	bacco, S. Jacoby & Co	7,76 <u>4</u>	3

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	Cheese, F. Korbel & Bros	7,766
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221,357	Buckles, S. C. Hawkins	11,48
221,200	Carpet, T. S. Stearns	11,49
	221,333 221,250 221,357	221,333 221,250 Breastpin or similar article of jewelry, H. S. Somes 221,357 Buckles, S. C. Hawkins 221,200 Carpet, T. S. Stearns

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1	Grate fronts, F. S. Bissell
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)	Handles of china and other vitrifled ware, C. F. A.
3	Hinrichs
1	Knit drawers, Swits Conde 11.498
9	Knit shirt, Swits Conde 11,485 and 11,499
	Oil cloth, C. T. & V. E. Meyer 11,487 to 11,494
7	Watch chain ornaments, J. U. Gerow 11.481
R	Withdrawn. 11.497

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