

NEW BOOKS AND PUBLICATIONS.

ADRIFT WITH A VENGEANCE. Carlton, Publisher, Madison square, New York city.

Kinahan Cornwallis, the accomplished editor of the *Albion*, has given us in this volume a very graphic and entertaining story, which combines incidents of social life, travel, and adventure in a most thrilling and interesting manner. Its pages are crowded with incident and adventure and "half-breath 'scapes" in South Africa, Australia, and upon the treacherous deep, enough to furnish forth many such volumes. In the arrangement of his drama and the disposition of the characters, the writer has made excellent use of his own varied experience and knowledge of life. We can cordially commend this book as one well suited to enliven the amly circle on the dull winter evenings.

SCRIBNER'S MONTHLY, for December, contains a series of unique illustration of "The Street Venders of New York," "June Birds and their Flights," and the "The Hoosac Tunnel." It is an excellent number.

Business and Personal.

*The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.*

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$1.00 a year. Advertisements 10c a line.

House Planning.—Geo. J. Colby, Waterbury, Vt., offers information of value to all in planning a House. Send him your address!

Manufacturers of Blacking Boxes please send descriptive price list to R. H. Singleton, Nashville, Tenn.

Match splitting Machines wanted, by Paul Lechtenberg, Salt Lake City, Utah.

E. S. Hill, South Abington, Mass., can tell our correspondent how to blacken eyelets.

The Merriman Bolt Cutter—the best made. Send for Circulars. Brown & Barnes, Fair Haven, Conn.

Machinery for pulverizing sand and for crushing ores, is wanted by Pryor Lea, of Goliad, Texas.

\$25,000 wanted by a Mfg Co., in an extensive chemical wood treatment enterprise founded on important patents. Address S. & B., box 90, Postoffice, New York.

Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Ct.

Millstone Dressing Diamond Machine—Simple, effective, durable. For description of the above see *Scientific American*, Nov. 27th, 1869. Also, Glazier's Diamonds. John Dickinson, 64 Nassau st., N. Y.

Pictures for the Drawing Room.—Prang's "Lake George," "West Point," "Joy of Autumn," "Prairie Flowers." Just issued. Sold in all Art Stores. "Three Tom Boys," "Bethoven," large and small.

Small Steam Engines and fixtures, complete; hand lathes; foot and drop presses, cheap. Address J. Dane, Jr., Newark, N.J., who will contract with parties desiring machinery built at reasonable rates.

Rawhide Sash Cord has no equal for heavy windows or dumb-waiters. Makes the very best round belting. Darrow Mfg Co., Bristol, Ct.

"507 Mechanical Movements."—This Book embraces all departments of mechanics. Each movement finely illustrated and fully described. To mechanics and inventors it is invaluable for references and study. Price \$1. By mail \$1.12. Address Theo. Tusch, 37 Park Row, N. Y.

Manufacturers and Patentees.—Agencies for the Pacific Coast wanted by Nathan Joseph & Co., 619 Washington st., San Francisco, who are already acting for several firms in the United States and Europe, to whom they can give references.

To Cure a Cough, Cold, or Sore Throat, use Brown's Bronchial Troches.

For Sale—The entire right of the best adjustable wrench. Price \$5.00. J. F. Ronan, at Chickering's factory, Boston, Mass.

Machinery for two 500-ton propellers, 60-Horse Locomotive Boiler, nearly new, for sale by Wm. D. Andrews & Bro., 414 Water st., N. Y.

A very Valuable Patent for sale, the merits of which will be appreciated at sight. Apply to or address Jewell & Ehlen, 93 Liberty st., N. Y.

Improved Foot Lathes. Many a reader of this paper has one of them. Catalogues free. N. H. Baldwin, Laconia, N. H.

Foreman Machinist wanted. See advertisement.

Lighting Gas in Streets, Factories, etc., with Bartlett's Patent Torch saves great expense, all risks, etc. It is being adopted everywhere. Address J. W. Bartlett, 569 Broadway, New York.

Japanese Paper-ware Spittoons, Wash Basins, Bowls, Pails, Milk Pans, Slop Jars, Chamber Pails, Trays. Perfectly water-proof. Will not break or rust. Send for circulars. Jennings Brothers, 352 Pearl st., N. Y.

Belting that is Belting—Always send for the Best Philadelphia Oak-Tanned, to C. W. Army, Manufacturer, 301 Cherry st., Phila.

For Fruit-Can Tools, Presses, Dies for all Metals, apply to Mays & Bliss, 118, 120, and 123 Plymouth st., Brooklyn, N. Y. Send for catalogue.

Parties in need of small Grey Iron Castings please address Enterprise Manufacturing Co., Philadelphia.

Excelsior Stump Puller & Rock Lifter. T. W. Fay, Camden, N. J.

Building Felt (no tar) for inside & out. C. J. Fay, Camden, N. J.

Best Boiler-tube cleaner—A. H. & M. Morse, Franklin, Mass.

The Best Hand Shears and Punches for metal work, as well as the latest improved lathes, and other machinists tools, from entirely new patterns, are manufactured by L. W. Pond, Worcester, Mass. Office 98 Liberty st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Keuffel & Esser, 116 Fulton st., N. Y., the best place to get 1st-class Drawing Materials, Swiss Instruments, and Rubber Triangles and Curves.

Glynn's Anti-Incrustator for Steam Boiler—The only reliable preventive. No foaming, and does not attack metals of boiler. Price 25 cents per lb. C. D. Fredricks, 537 Broadway, New York.

Cold Rolled—Shafting, piston rods, pump rods, Collins pat. double compression couplings, manufactured by Jones & Laughlins, Pittsburgh, Pa.

For mining, wrecking, pumping, drainage, and irrigating machinery, see advertisement of Andrews Patents in another column.

Incrustations prevented by Winans' Boiler Powder (11 Wall st., New York), 15 years in use. Beware of frauds.

To ascertain where there will be a demand for new machinery or manufacturers' supplies read Boston Commercial Bulletin's manufacturing news of the United States. Terms \$4.00 a year.

The Largest Newspaper Mail

Which goes to anyone firm in this country, is received by Geo. P. Rowell & Co., the New York Advertising Agents. Their place of business is at No. 40 Park Row.

QUERIES.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers, and hope to be able to make this column of inquiries and answers a popular and useful feature of the paper.]

1.—Can you inform me how fast steam passes through a pipe of a given size, say one inch in diameter, twenty feet long, and one hundred pounds pressure to the square inch in the boiler? How many cubic feet of steam will pass through such a pipe per minute?—P. C. C.

2.—I feel very grateful for the new space set apart in your very valuable and always interesting paper for persons seeking information to ask, and those who know to answer. I am a manufacturer in metals, and your paper has been worth to me, during the twelve years I have read it, more than six thousand dollars directly. I hope I may never be deprived of its perusal weekly. Can any of your numerous readers inform me of a cheap and neat way of coating black on small articles of brass in lots of fifty gross at a time.—W. A. M.

3.—I wish to gear from an upright water-wheel shaft to the horizontal crank shaft of my saw mill directly by bevel gears. The question is raised whether I can overcome the back lash caused by the action of the saw by a balance wheel, and make it run successfully. One millwright thinks I can, while two think I cannot. The upright shaft will run 150 and the saw shaft 300 times per minute.—J. B. W.

4.—All the other conditions being equal, which has the greatest ultimate range, without regard to accuracy, a rifled or smooth bore gun?—G. R.

5.—Where can I obtain india-rubber varnish? or get a recipe for making it? It must be transparent and durable.—L. H. B.

6.—I am a boat builder by profession, and use a good many galvanized nails, bolts, etc. In what way may I galvanize them myself? What kind of zinc must I use, and where can I obtain it? What are the details of the process?—J. M. S.

7.—Can some of your correspondents give the proportions of pulleys, distance between centers, and width of belt necessary for the best performance of a quarter twist belt? I propose to run one of these proportions—will it work well? Driving pulley, 30 inches; revolutions, 15; driven pulley, 24 inches; revolutions, 187; distance between centers, 14 1/2 feet; width of belt, 10 inches.—J. F. K.

8.—Is the pressure on the cylinders of a locomotive greater when suddenly reversed under motion, and thereby caused to slip bodily forward on the rails, than when in starting the drivers are made to slip owing to inertia of load? and is any portion of the increase due to momentum, other things being equal, and the rapidity of friction the same?—H. W. C.

9.—I wish to know the U. S. standard weight of a tun of bituminous coal; also what a wagon body of the following dimensions will hold: 8 feet 7 inches long, 3 feet 3 inches wide, 12 inches deep. What are the standard dimensions of a coal box that will hold 2 1/2 bushels? The reason I ask these questions is this; there are several persons that sell coal here, and I think their measures are wrong.—W. H. P.

10.—I have entirely lost the use of my lower limbs, but have full use of my hands. Now I want some kind of a vehicle that I can run on the street with. Will you please to send me the address of some one that keeps for sale or manufactures such a vehicle?—G. M. D.

11.—How can I make a fine black varnish for carriage harnesses? I have tried the recipe you gave in No. 18, but it makes the leather a dead, dull black, just the same as oil would do.—N. L. M.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$1.00 a line, under the head of "Business and Personal." All references to back numbers should be by volume and page.

SILVERING CHEAP LOOKING-GLASSES.—"A. M." should place a sheet of glass, previously washed clean with water, on a table, and rub the whole surface with a rubber of cotton, wetted with distilled water, and afterwards with a solution of Rochelle salts in distilled water (1 of salt to 200 of water). Then take a solution, previously prepared by adding nitrate of silver to ammonia of commerce; the silver being gradually added until a brown precipitate commences to be produced; the solution is then filtered. For each square yard of glass I take as much of the above solution as contains 20 grammes (about 309 grains) of silver, and to this add as much of a solution of Rochelle salt as contains 14 grammes of salt, and the strength of the latter solution should be so adjusted to that of the silver solution that the total weight of the mixture above mentioned may be 60 grammes. In a minute or two after the mixture is made it becomes turbid, and it is then immediately to be poured over the surface of the glass, which has previously been placed on a perfectly horizontal table, but the plate is blocked up at one end, to give it an inclination about 1 in 40; the liquid is then poured in such a manner as to distribute it over the whole surface without allowing it to escape at the edges. When this is effected, the plate is placed in a horizontal position, at a temperature of about 68° F. The silver will begin to appear in about two minutes, and in about twenty or thirty minutes sufficient silver will be deposited. The mixture is then poured off the plate, and the silver it contains afterwards recovered. The surface is then washed four or five times, and the plate set up to dry. When dry, the plate is varnished, by pouring over it a varnish composed of gum damar, 20 parts; asphaltate (bitumen of India), 5; gutta-percha, 5; and benzine, 75. This varnish hard on the glass, and the plate is then ready for use.—E. W., of Va.

IRON CASTINGS.—"Young Molder's" difficulty may arise from various causes; the facing sand may be either too wet or too dry, or the mold too hard rammed, or the metal too slow poured into the mold. To prevent the first two, this must be left to his own judgment, as some qualities of sand can be wrought wetter than others; if too wet it will cause the iron to bubble and invariably scab; if too dry the blackening and sand will run before the metal, and in some cases will wash large pieces out of the face of the mold, particularly around the gate. Hard ramming will cause the mold to scab, the ramming depending on the weight of the casting; if heavy, must be rammed hard to prevent it from swelling, consequently the mold must be well vented and pricked in the face. Make up your pouring gate firm and clean, pour your metal quick and hot; never mind though skin is rough. By attending to the above it will assist you in making the castings solid.—J. T. H., of N. Y.

DRY PLATE PROCESS.—Would-be Photographer's query can easily be answered by referring to Anthony's *Photographic Bulletin* for March, page 30. This process is in use by Mr. T. C. Roche, the well-known veteran photographer, and his success with this formula was so marked that, to save much time and many questions, he was induced to publish it.

LACKERS.—I give the following recipes for "Indicator's" benefit: Deep gold lacker: 3 ounces seed lac, 1 ounce turmeric, 1/4 ounce dragon's blood, 1 pint alcohol. Gold lacker: 1 pound ground turmeric 1 1/2 ounces gamboge, 3/4 pounds gum sandarach, 1/2 pound powdered shellac, 2 gallons rectified spirits wine, 1 pint turpentine varnish. Digest for a week, frequently shaking the mixture, then decant and filter. Brass color: 1 ounce gamboge cut small, 3 ounces Cape aloes, 1 pound pale shellac, 2 gallons rectified spirit. I do not know of a pale colorless lacker.—F. R., of Mass.

SCATTERING SHOT GUN.—J. J. T., of Texas, wishes a remedy for a scattering shot gun. Let him clean out his gun and scour the inside bright; then run on a little solder round the inside of the muzzle from one fourth to one half an inch down the barrel, and about the thickness of tin-foil. He will then have no further trouble. I think there is no difference in the sizes of shot about scattering, so long as they are not mixed. Mixed shot will scatter, because the large shot fly faster and farther than the small ones, besides being heavier and less liable to deviation from their course by currents of air.—A. C. D., of N. Y.

WHITE LIGHT.—Regarding J. O. K.'s query, many in this city have told me that they use the lime or calcium light for reading in the evening, saying that when the wear and tear of eyesight under the infliction of common gas is taken into consideration the lime light is the cheapest, and throws a clear white light. I find the kerosene lamp much preferable to gas, and use it for fine lath work in the evening. Since I commenced it my eyesight does not trouble me in the least, and before that I had to suspend operations after dark.—E. B. B., of N. Y.

SCALING BOILERS.—Some time ago I saw an inquiry in your paper in regard to methods of scaling boilers. I removed the scale from a ten horse-power boiler by boiling potatoes in it, as women remove scale from tea-kettles.

TO MAKE RUBBER BELTS STICK.—Put on a coat of boiled linseed oil, or hold on a piece of cold tallow while the belt is running, and then sprinkle on fine chalk. This will not hurt the rubber, because the belt does not absorb cold tallow.—C. E. G., of Ct.

H. M. P., of N. J.—Court plaster made by applying several coats of a solution of isinglass with a little tincture of benzoin added, whilst warm, with a brush, to a piece of silk stretched on a frame, each coat being allowed to dry before the next is put on. It is supposed to be so called from having been used in former times by Court ladies for their patches.

F. E. H., of Mass.—The "fating" of linseed oil for gold size is the result of the absorption of oxygen in the process of boiling, from the atmosphere, and also from the driers added. The English method of preparing this size is to grind together red oxide of lead with the thickest drying oil that can be procured. To make it work freely it is mixed with oil of turpentine to the proper consistency. We cannot state the time necessary to bring the oil to the proper thickness, as it depends upon many variable circumstances.

M. F., of O.—Water free from mechanical impurities like that used in water-hammers, will not freeze quite as readily as that which contains nuclei for the commencement of crystallization. It will freeze, nevertheless, and might break the glass by its expansion. We have, however, had such an instrument in which the water has been frozen several times, without breaking.

J. B. R., of Mass.—The exposition of your query in a clear manner, would occupy more space than we can give to it. You should consult works on electro-magnetism, of which any good bookseller can furnish you with a list. We will say, however, that if a battery be made to supply a current to more than one magnet, the sustaining power of each will be less than the sustaining power of a single magnet, where the whole force of the battery is applied to it alone.

C. H. G., of N. Y., asks us to explain the following: In a saucer I dissolved one drachm nitrate of silver in one ounce of water, in another saucer I dissolved one ounce of hyposulphate of soda in one ounce water. I poured half of the hyposulphate of soda into the nitrate of silver, which turned to a thick, creamy paint. I then poured the remaining hyposulphate of soda into the paint, which again changed to a thin black fluid." *Answer*.—Some oxide of silver was at first precipitated, which was re-dissolved on addition of the hyposulphate.

J. N. W., of N. Y.—In a stream with sharp curves filled with water to the tops of its banks, there will be overflow at each sharp bend, and for some distance back of the bend, provided the velocity of the stream is sufficiently great. The effect of the bends is to obstruct the flow and set back the water, thus causing overflow.

J. S. M., of Tenn.—Meerschaum pipes and nearly every kind of tobacco pipes may be quickly and thoroughly cleaned, by connecting the stems by a small rubber connector with a steam tap, and allowing the steam to blow through them. The oily and gummy matters will all be softened and blown out.

D. T., of Md.—The use of glass bearings for the journals of car axles is not a new idea. It has been tried, and found not to answer a good purpose. Precisely the difficulties encountered, we cannot positively say, but that they failed is certain.

L. B. C., of Miss.—The following is recommended as a good method for making garden walks. Procure a sufficient quantity of stone broken rather fine; spread it out, basin fashion, and into the basin pour some heated tar; mix well. Then lay over your paths smoothly, sprinkle powdered quick lime over the top, and roll.

P. H., of Mo.—The moss-agate, or mochastone, is a transparent variety of agate, which is marked with an appearance like tufts of moss. This was formerly supposed to be a vegetable structure, but has now been shown to be a deposit of ferric oxide.

D. R. J., of Ala.—For large flow and low head, say ten feet or less, we believe the overshoot water wheel will prove the most efficient. You can make a long wheel on a single shaft, or put two, gearing into a single shaft.

O. H. L., of N. Y.—Wood gas has not found favor in this country.—Lime is usually employed to absorb the acetic acid from pyro-ligneous acid and as acetate of lime is a commercial article—see article acetic acid in almost any encyclopedia.

R. J. S., of Ohio.—The best olive oil is, we believe, produced in the south of France. Much oil sold under this name, in this country, is adulterated with other fixed oils. Oil of popples has been much used for this purpose.

D. L. G., of Va.—The conducting power of liquids, as a class, is very much less than that of solids. The conducting power of woods is in general from 25 to 4 times that of water.

S. J. W., of Iowa.—We have in our possession no such communication as the one to which you refer, and think it never came to hand.

G. McD., of N. J.—A full account of the process of electroplating with iron was given on page 346, Vol. XXI., of the *SCIENTIFIC AMERICAN*.

R. S. S., of Australia.—Brakes operating substantially like the one you propose, have been made. It is not probable that you could obtain a patent.

H. E. W., of N. Y.—Aniline dyes must be fixed by albumen—they are then tolerably permanent, depending upon the shade of color.