

When one sash is in front of the other, the hinged frames of each sash can be freely manipulated.

THROAT-FRAME FOR MAIL-BAGS. - CHARLES BATEMAN, Gales Creek, Ore. The inventor has devised an ingenious throat-frame for mail-bags, which holds the mouth of the bag open at full extent in rectangular form for the free reception of the mail-matter, and also forms a secure closure for the bag-mouth.

COVER CLAMP AND HANDLE FOR FRUIT-BASKETS. - MAJOR TUCKER, Brockton, N. Y. The device performs the dual function of serving, as a handle for a fruit-basket and as a means for securing the cover of the basket in place.

SCRAPER. - WILLIAM H. UNION, New Orleans, La. The purpose of the invention is to provide a scraper which may be easily dumped and handled, to which end novel mechanism is employed for holding a bucket in active position and for raising it, so as to carry its load to the dump, and then for readily and quickly inverting the bucket to discharge its contents.

STRAPPING-TOOL. - WILLIAM MAX, Brooklyn, New York city. To provide a tool for conveniently draining and stretching metal straps across the side of a box before nailing is the object of the invention.

ADJUSTABLE BOOK-REST OR TABLE. - MAJOR MILLER, Lowell, Wis. Upon a stand a jointed arm is mounted for horizontal movement; and upon the arm a table is carried for adjustment independently of the adjustment of the sections of the arm or of the arm in its entirety.

HOSE-COUPLING. - JENS C. MARTIN, Spokane, Wash. The coupling is composed of two parts adapted to engage and automatically lock together. The parts are duplicate; and each has a locking mechanism of peculiar construction and an annular elastic gasket, which is securely held in place by a peculiar construction and is expanded by water-pressure, so as to form a perfectly tight joint under all conditions.

Designs.

TRIMMING. - PAUL GUMBINER, Manhattan, New York city. The trimming includes a series of scallops at opposite sides of a longitudinal line, the scallops of one series being opposite the space intervening the scallops of the opposing series.

NOTE. - Copies of any of these patents can be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

DER MEISTER VON PALMYRA. Dramatische Dichtung in fünf Aufzügen. Von Adolf Wilbrandt. Edited with introduction and notes by Théodore Henckels. American Book Company, 1900. 12mo.

It can safely be said that every teacher of the German language has been wishing for a long time that this masterpiece of Adolf Wilbrandt might be prepared and edited for class use in American schools and colleges. The work is modern, classical, and free from that excess of realism which often makes many books unsuitable for the class-room.

LES PLAQUES DE BLINDAGES. Par M. L. Baclé. Paris: Vve Ch. Dunod. 1900. Quarto. Pp. 233. 197 illustrations.

This monograph on armor plates is devoted to a history of steel armor, manufacture of the plates, and tests which have been made both in Europe and America. The author writes with the authority and self-confidence of one who is thoroughly familiar with his subject.

UEBER DEN HYDRAULISCHEN STOSS IN WASSERLEITUNGSROHREN. Von N. Joukowsky. St. Petersburg. 1900. Price \$1.

The action of the so-called "hammering" in water mains is so little known that Prof. Joukowsky, of the Moscow Imperial University, determined to conduct a series of experiments which would add something to our knowledge and supplement the work of Prof. Carpenter, of Cornell, who investigated hammering in small pipes.

Business and Personal.

Marine Iron Works. Chicago. Catalogue free. "U. S." Metal Polish. Indianapolis. Samples free. Yankee Notions. Waterbury Button Co., Waterbury, Ct. Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Special and Automatic Machines built to drawings on contract. The Garvin Machine Co., 141 Varick St., N. Y. Ferracute Machine Co., Bridgeton, N. J., U. S. A. Full line of Presses, Dies, and other Sheet Metal Machinery.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for your information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7919) G. W. asks: 1. What length of spark must my induction coil produce to make an X ray apparatus for examining objects such as a leg or arm? A. A coil giving an 8-inch spark will answer for the thinner parts of the body, but for every kind of service one giving a 14-inch spark should be had. 2. What kind of tube would be the most suited for this work? A. There are many makers of tubes, whose advertisements are frequently to be found in our columns. A higher vacuum is required for use with a coil than for use with a static machine.

(7920) O. M. S. asks: 1. How may opaque objects be seen under the microscope? A. By the use of the bull's-eye condenser. A lens which will focus the light of a lamp upon the upper surface of the object. One of these usually accompanies a microscope. 2. How can the glimmering of artificial light be overcome? A. If the light is too strong, turn the reflecting mirror till the field is illuminated to suit your eye. Shaded glasses can be had from dealers in microscopes which cut down and also color the light agreeably.

(7921) L. F. S. Vancouver, Wash., writes: I wish to know what horse power would be developed by a stream of water, which, if dammed would give a head of 130 feet or more. The amount of water flowing over a 4-foot weir is 8 inches, weir being rectangular 4 feet equals breadth, 8 inches equals depth. What size steel pipe or iron pipe would this water fill if it were to be carried to a turbine at distance of 1,200 feet? What is the cost of such pipe a running foot? Also, what would be the cost of a dynamo to utilize power thus developed by turbine. Suppose it were necessary to transmit power to a manufacturing plant at a distance of 4 1/2 miles from power house. What would be loss of power in transmitting and what approximate cost of motor and wiring for such a plant? Kindly tell me where price list of motors and dynamos may be obtained? A. The capacity of your weir is 432 cubic feet of water per minute. This with 130 feet fall will give a theoretical power of nearly 3 1/2 million foot-pounds or 112 horse power.

of water 1,200 feet with a loss of less than 2 feet head will be 2 1/2 inches in diameter, and will cost about \$1 per foot. A Pelton wheel and connections will cost about \$400. The dynamo will cost about \$2,400. A motor on a 1/2-mile line will cost about \$1,000, and should net 60 horse power at 4 1/2 miles distance. We refer you to the water wheel companies for estimates of a complete power plant.

(7922) Y. N. W. writes: As it is your aim to disseminate useful information we make the following statement which will interest all photographers: We recently purchased one of the new aluminium trays and lately undertook to intensify a negative in it, using a three solution intensifier: Bromide of potassium, bichloride of mercury, and sulphite of soda, in the order named. Upon applying the mercury solution the chemical growth (which we had forgotten all about) of which a detailed description was given in the SCIENTIFIC AMERICAN of March 10, immediately began, and we were unable to check it until to-day, when we happened to think of using muriatic acid. We immediately applied a dilute solution of the acid to the tray, using a cloth to take off the black coating. After rinsing we applied a solution of soda and other tests without any action of the mercury. We would, therefore, advise our brother photographers to never use an aluminium tray for intensification, but if they have already spoiled a tray by it to try the acid, which we think will prove effective in every instance. A. We suppose it is not possible that every one who has to do with chemicals should first study their chemical actions sufficiently to avoid the mistake of our correspondent of putting a chemical into his tray which would dissolve it. He knows the fact regarding aluminium now and is not likely to repeat the experiment. Experience is a good schoolmaster, though her instruction comes high, it has been said.

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Table listing inventions with patent numbers and dates. Includes items like 'Advertising device', 'Aerial wheel', 'Air purifier', etc., with corresponding patent numbers and dates.