RECENTLY PATENTED INVENTIONS.

Engineering.

ROTARY ENGINE.—David Berry, Fish Rock, Cal. This engine has a cylinder in the head of which is mounted a drive shaft on which is a wheel provided with a number of pistons sliding radially to engage the sides between the rim of the wheel and the rim of the cylinder, the pistons being forced into outermost position by springs, so that in passing over a permanent abutment projecting into the sides between the wheel and cylinder, the pistons slide inwardly owing to the yielding of the springs. The construction is designed to be durable and very effective, the arrangement permitting of conveniently reversing the engine when desired.

Mechanical.

FLANGE WRENCH.—William H. Brock, Brooklyn, N. Y. This wrench is especially adapted for screwing flanges upon pipes, and may be used right hand or left hand, to remove a flange as well as screw one on. The head has a biting face on each side, and is provided with a handle and an arm pivotally connected to the head and extending beyond the biting faces, a stud projecting parallel to its pivot pin.

MACHINE FOR DRILLING COUNTERSINKS.—Lemuel Churchill, Three Oaks, Mich. For forming oblong countersinks for the reception of elliptical bolt heads, this inventor provides a drilling tool with a cutting head having a smooth non-cutting point extending beyond the cutting edges of the head, and forming a fulcrum for the tool. The shank of the tool is secured in a socket of a drill shaft turning in a sleeve sliding and turning in a block which slides in a segmental slot in the frame, which may be readily raised and lowered to bring the cutting edges to desired position.

PUMPING JACK.—Emmett R. Curtin, St. Mary's, Ohio. This is a simple and inexpensive jack which may be easily erected on the derrick of an oil well to form a smooth working connection with the pump rod, without bending or cutting it, and which may be connected with an ordinary reciprocating piston, the jack to be worked either side up. The body of the jack is in the form of a bell crank, consisting preferably of two parallel pipes arranged so that their upper ends lie horizontally and their lower ones vertically, the pipes being connected on opposite sides of their elbows by tie plates. The pipe bell crank is seated and bolted in longitudinal grooves of a saddle, and the pump rod is connected with the pipes by a holder through which the pipes slide as they move up and down when the pump rod is reciprocated.

WOOD STRIP CUTTING MACHINE.—Robert Schleicher and Charles Heimerdinger, Louisville, Ky. For cutting strips for lining boxes and other purposes to the desired length and also to the miter, these inventors have devised a machine in which a reciprocating cutter head carries the knives for cutting and mitering the strips, while a variable feed mechanism operates in conjunction with the head to feed the strip forward to the desired length during the return stroke of the head. The machine may be made single, but is preferably constructed with double tables and a double cutter head, when one operator can conveniently attend to it.

COMPOUND DRIVING GEAR.—Thomas H. Savery, Wilmington, Del. A fast speed pulley and a slow speed pulley are, according to this improvement, both adapted to be connected with the driving shaft of a machine, a friction clutch locking one to the driving shaft and a positive clutch locking the other, either clutch being engaged at will, while the positive or slow-driving clutch will not be disengaged before the friction or fast-driving clutch is put in engagement. If desired, neither clutch will be in engagement. The improvement relates especially to paper machines, permitting the couchers, first press, second press and calenders to be driven at a very fast speed and started simultaneously or singly without danger of shock.

Miscellaneous.

ELECTRIC ANNUNCIATOR.—William J. Clarke, Trenton, Canada. This improvement is applicable to all electric call bell systems requiring more than ten indications. By its use eleven wires are required for the first ten rooms, then one additional wire for every ten rooms up to one hundred. and after that only one additional wire for every one hundred rooms. The annunciator face has drops in segregated groups, instead of for each single room, the number of a room being indicated by the falling of a drop in two or more groups, as room 125 would be indicated by drop 1 in hundreds group, drop 2 in tens group, and drop 5 in units group, all operated by the single push button of room 125, and only thirty drops being required for a thousand rooms.

SWING-BACK CAMERA ADJUSTER.—Henry J. Hall, Wickford, R. I. This is a horizontal swing attachment permitting the camera to swing to the right or left from normal position about thirty degrees, the attachment being applicable to any form of camera and easily manipulated. It consists of a support on which is pivoted a sill, both sill and support having extensions one above the other, each having a transverse slot, and one of the extensions having a longitudinal slot, adjacent to which is a rack, while carried by a lever is a pin adapted to travel in the slots of the extensions, the pin carrying a pinion which may be locked.

FILTER.—Charles Ashurst, Paris, Ky. This is a device for use in connection with the discharge spouts of buildings, the first water passing to the filter being passed to a waste pipe, while succeeding portions go through the filtering material to the cistern or other receptacle. When the rain ceases the contents of the filter are automatically drained in such manner that the drainage washes out and discharges into the waste outlet all sediment and other accumulations, leaving the filter in a cleanly condition.

RIDING SADDLE.—Jesse D. Padgitt, Dallas, Texas. This saddle has a short, rigid tree, to the rear edge of which are secured flexible leather pieces extending the length of the body of the saddle, to serve as a filling and stiffening, top and under pieces being sewed together at their edges to inclose the filling. The saddle is thus designed to be more comfortable to the rider and better adapted for horses having backs differing in shape, from its front portion being rigid and its body and rear portion flexible.

HARNESS SADDLE.—John D. Fletcher, Murfreesborough, Tenn. This saddle has a leather backing to which a detachable leather lining is united by lacing cords, and two inflatable rubber cushions are arranged one on each side of the middle line of the pad within the lining, the cushions being provided with a valved nipple and solid ends with eyelets through them, through which are passed cords to hold them in place within the outer case. The saddle is designed to promote the comfort of the animal, always remaining soft and cool and readily adapting itself to the shape of the horse's back.

MOISTENER AND PAPER WEIGHT.—Harvey R. Harris, Michigan City, Ind. The casing of this device has a weighted lower portion and an upper compartment with inclined bottom, the sponge or moisture-receiving substance being placed in the upper compartment, which has a forward overhanging portion open at the bottom, whereby the moisture will always seek the lower exposed part of the sponge, the part to be pressed by the article to be moistened.

TANK SUPPLY VALVES.—Augustus E. Smith. Brookville, Pa. This invention provides a controlling device for valves in water closet tanks, designed to perfect the working efficiency of the supply valve and insure its positive closing when the tank is filled to the point of overflow, also permitting of regulating the amount of overflow after the tank is filled. Combined with the supply valve is a fixed pneumatic casing apertured to permanently communicate with the tank and having an air escape of reduced diameter, whereby the liquid rises slower in the casing than in the tank when the supply valve is open, a float contained in the casing being operatively connected to the valve.

ADVERTISING DEVICE.—Joseph T. Craw, Jersey City, N. J. A card or case, according to this invention, comprises several members or leaves, but appears to have but two leaves, although it has actually six pages. The card or case may be opened from opposite sides to display different pages, and it may contain one or more pockets for railroad tickets, cards, etc. The entire device may be shaped in blank form, and it may be very inexpensively produced.

Designs.

ELECTRIC LIGHT SHADE.—Harrison D. McFaddin, East Orange, N. J. In this shade one side presents an inclosed face consisting of a shell figure, the ribs widening out to a leaf-like form at their outer or upper ends, the general effect being that of a ribbed shell supported at one side so that a portion only of the globe of the light will be exposed.

STANDARD OR BASE FOR SCALES.—Edward F. Jones, Binghamton, N. Y. This standard has a stem projecting laterally from its base, the stem terminating in a number of leaves representing modified clover leaves.

INTERNAL COVER FOR CULINARY VESSEL.—Matej Kratky, Hemingford, Neb. This is a round cover with edge beveled downward and outward, the edge having alternate recesses and projections.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

CHEMICAL ANALYSIS OF OILS, FATS, AND WAXES AND OF THE COMMERCIAL PRODUCTS DERIVED THEREFROM. From the German of Professor Dr. R. Benedikt. Revised and enlarged by Dr. J. Lewkowitsch, F.I.C., F.C.S. London and New York: Macmillan & Company. 1895. Pp. xviii, 683. 8vo, illustrations, tables. Cloth. Price $7.

One of the most important works on chemical analysis which has appeared in English for several years. There has not hitherto been any English work dealing especially with the chemical analysis of fats, oils, and waxes. The analysis of fats presents an almost complete system, such as is found in no other branch of technical organic analysis, a system which will admit of application in the examination of ethereal oils, resins, balsams, and substances of a similar nature, so that the usefulness of the present work is not limited to those who work specially in fats and oils. To the German methods have been added those of American and English technical chemists, so that the amalgamation of the scientific accuracy of Dr. Benedikt with the practical knowledge of those who are constantly engaged in chemical work on fats and oils cannot but prove of value to both analytical and technical chemists. The chapters devoted to the physical properties of fats and oils contain much valuable information.

THINKING, DOING, FEELING. By E. W. Scripture, Ph.D. Meadville, Pa.: Flood & Vincent. 1895. Pp. 304. 16mo, 209 illustrations. Price $1.50.

The new or experimental psychology first arose in Germany, but being a psychology of facts and figures instead of guesswork and speculation, its appeal to the sound sense of American science has brought about such a rapid development that experimental psychology is pre-eminently the American psychology. The author of the present work is the director of the famous Yale Psychological Laboratory, and a prominent representative of the new movement. The book is not only clear and scientific, but it is also lively and entertaining. On the one hand, it contains the results of special investigations never before accessible to the public, and on the other hand, it is written in a manner intelligible to every reader. The book is filled with illustrations showing the apparatus used in testing the senses, charts and diagrams illustrating various optical illusions, and other matter bearing upon the subject.

THE NATURAL HISTORY OF AQUATIC INSECTS. By Professor L. C. Miall, F.R.S., with illustrations by A. R. Hammond, F.L.S. London and New York: Macmillan & Company. 1895. Pp. 395. 16mo, 115 illustrations. Price $1.75.

A delightful work for the microscopist. The author has attempted to help those naturalists who take delight in observing the structure and habits of living animals, and also to revive an interest in the writings of certain old zoologists—Swammerdam, Reaumur, Lyonnet and De Geer—who are at present unjustly neglected.

HOW A GOOD CAR DIFFERS FROM A BAD ONE, AND HOW TO GET IT. Saint Louis: Published by the Brownell Car Company. Pp. 171. Oblong 16mo, 55 illustrations.

An excellent specimen of bookmaking and a good example of what the manufacturer of to-day deems necessary to put into the hands of prospective buyers to enable them to judge of the merits of the goods offered. The Brownell Car Company make the now well known accelerator, and the great advantages of this car are shown. One view of a crowd seen from above, showing the people's heads, is a very curious illustration.

Messrs King & Brothers, of New York and Albany, have just published an Outline of the Infringement of Patents for Inventions, not Designs, of which the author is Mr. Thomas B. Hall, of the Cleveland bar. Mr. Hall has divided the subject into four parts which, he explains, are the four questions to be logically considered in an infringement suit. These are: first, the license under the patent by which use of the patented article may be justified; second, the identity of the patented invention and the infringing device, the absence of such being evidence of non-infringement; third, the validity of the patent, this being, of course, essential to recovery; and fourth, that which is to be recovered for unlawful infringement. These subjects the author successively considers, and the law of each question is stated with a conciseness only consistent with the brevity of the work. There is appended a table of cases arranged with reference to their subject matter, by means of which one may be directed to the authorities for the law, and also an index of subjects. Thus equipped the book is a fine summary of the law, and an invaluable guide to an exhaustive consideration of every topic within the purview of its title.

☞ Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

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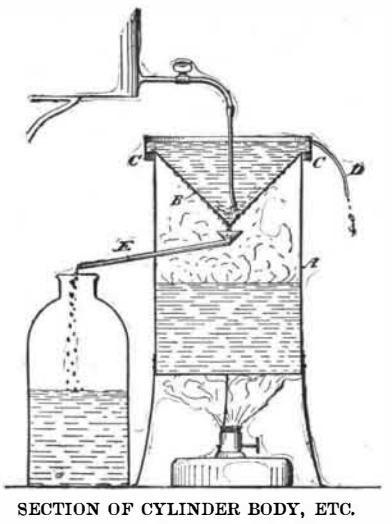
Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our 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.

(6587) R. L. M., Jr., says: How can I make a portable distillery? A. Photographers away from cities are often at their wits' end to procure water of assured purity. The following cheap, portable and not in the way device may help them in their difficulties. A cylinder 13 inches high by 7 inches in diameter, with bottom made preferably of copper, with three legs of strap iron high enough to raise the cylinder 6 inches from the ground. To the top of the cylinder a conical lid, 8½ inches in diameter (outside) and 5 inches in height from base to apex of cone, provided with a flange to fit snugly inside the cylinder. Near the base of the cone a tube 3 inches long is inserted. About 5 inches from the top of the cylinder a tube, 10 inches long, is passed through, terminating in a small furnace exactly under the apex of the cone when the cover is on. The other end projects about 3 inches on the outside of the cylinder. Fill the cylinder about one-half full with ordinary water. If pressed for time, hot water may be used. Adjust the cover and place the apparatus over a gas or oil stove, and, by means of an India rubber tube connected with a tap, pass a gentle stream of cold water into the cover, allowing the



SECTION OF CYLINDER BODY, ETC.

A, 13 inches high and 7 inches in diameter. B, conical lid, 8½ inches in diameter and 5 inches in height from apex to base of cone. C, C, flanges to fit snugly inside the cylinder. D, tube 3 inches long. E, tube 10 inches long, terminating in a small funnel. Still was invented, I believe, by Mr. C. C. Neves, of England.

overflow to pass out through the tube in the cover. When the water boils, the steam rises and settles on the cone cover, where it is condensed by the cold water in the cover, and it is then collected in the funnel and runs down the long tube into a bottle or other receptacle.

(6588) A. J. McM. asks for some information regarding India rubber. A. India rubber is the product of many euphorbiaceous plants. We get most of it from the Brazils and Central America. In Brazil it is obtained from the Siphonia elastica, which grows to a height of between 50 to 60 feet, and in Central America it is obtained from Castilloa elastica. Most of that we now use comes from Central America, where the juice is