

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

RECEIVER FOR WIRELESS COMMUNICATION.—G. MORIN, Havana, Cuba. Mr. Morin's coherer differs from the ordinary type in being decohered magnetically. The terminals of the coherer extend into the tube from the bottom and are separated by an insulating plate. Iron filings cover the terminals and lying loosely in the tube on these filings is an armature. When the filings are cohered a solenoid surrounding the tube is actuated by the local circuit to energize the armature and lift it away from the terminals, drawing with it the filings which have adhered thereto.

Engineering Improvements.

SPARK ARRESTER AND EXTINGUISHER.—A. P. ZINK, Lorain, Ohio. The object of the improvement is to provide details of construction for a spark arrester and extinguisher well adapted for coaction with the draft-stack of a locomotive and which will arrest all sparks entering the stack and convey them into a receptacle wherein they are extinguished by water and at intervals are automatically discharged from the receptacle, which when emptied returns to normal position for renewed service.

BACK-PRESSURE RELIEF-VALVE.—C. A. CUNNINGHAM, Brainerd, Minn. In this patent the invention relates to steam engines; and the object is to provide a new and improved back-pressure relief-valve arranged to completely relieve the piston in the steam-cylinder of back pressure, thus insuring a steady running of the engine and utilization of the motive agent to the fullest extent.

ROTARY ENGINE.—I. V. KETCHAM, New York, N. Y. Mr. Ketcham's invention relates to a mechanical device adapted to be embodied in the construction of rotary engines, pulleys, wheels, rams, and other constructions. The object of the improvement is to provide a compact and simple construction wherein the power may be augmented without a corresponding increase in the pressure of the motive fluid.

LUBRICATING DEVICE FOR HIGH-SPEED AND EXPLOSION MOTORS.—L. RENAULT, Bilancourt, Seine, France. The object of this invention is to obviate many inconveniences in applying lubricants, and to this end he utilizes the action of the centrifugal force of the heads of the connecting-rods by collecting in reservoirs placed in a suitable manner above the bearings the oil thrown out from the heads of the rods, the reservoirs serving at the same time as lubricators partly to the bearings, and consequently to these same heads of the rods. The system is applicable to all kinds of motors, but is more particularly adapted to motor-vehicles.

Hardware.

TOOL-HEATING HANDLE.—M. KALARA, New Rochelle, N. Y., and F. GALLER, New York, N. Y. This handle is especially adapted for book-binders' tools, and it is capable of heating the tool continually. This is effected by providing burner devices and supplying gas thereto through a flexible tube. The invention enables the tool to be kept heated continuously, and at a uniform and any desired temperature. It also provides for interchanging the tools at will, so that a single handle will do for any number of tools.

RATCHET-WRENCH.—W. W. MURCH, New York, N. Y. The object of the invention is the provision of an improved ratchet-wrench which is arranged to permit the user to quickly and conveniently screw up or unscrew nuts, bolts, and the like without disengaging the nut or bolt-head during the operations. The wrench will prove very serviceable in places in which but a limited swinging motion can be given to the handle.

BRACE.—A. S. E. METCALF, Merville, Iowa. In this patent the invention relates particularly to improvements in a combined brace, chuck, and wrench, the object of the inventor being the provision of a device of this character having a wide range of adjustment for holding bits and drills and for removing nuts of various sizes.

Machines and Mechanical Devices.

UNIVERSAL SANDING-MACHINE.—A. C. GOUGH, Benton, Ky. The object in view in this invention is the provision of an improved machine which combines the desirable features of prior irregular, drum, and horizontal machines by reason of an adjustment, which may be easily and quickly performed, to bring the grinding element into any one of a number of positions according to the requirements of the work.

BLADE-SHARPENER.—S. R. DUVAL, New Orleans, La. In this instance, the object is to provide a sharpener of a type having coacting grinding, honing, or stropping rollers, whereby both sides of a blade may be operated upon simultaneously, thus quickly bringing the "teeth" or "feather" of a razor-blade edge to a uniform and central line, leaving the blade in condition for use.

Miscellaneous.

BOOK SUPPORT AND CONTAINER.—J. J. EUGSTER, Tiffin, Ohio. In this patent, the object of the invention is to provide a new

and improved support and container more especially designed for use in churches, chapels, and other places and arranged to form a resting-desk for a mass-book or the like, and to form a receptacle for containing the book when not in use.

CLASP FOR SHAPING HAT OR BONNET FRAMES.—A. BRODIN, St. Joseph, Mo. The purpose of this improvement is to provide means to enable a milliner to quickly shape a frame of wire as a foundation of a hat to be made of chiffon or other light goods by using a hat formed of felt, straw, or other substantial material that has been pressed into shape on a block, such means consisting of a clasp to be applied in sufficient number for the retention of wire as it is bent into shape over the hat or bonnet body that is to be duplicated in filmy material.

CANDELABRUM.—W. SCHIMPF, New York, N. Y. This article is especially adapted for table and decorative purposes, and also upon an altar or for other devotional purposes. The candelabra is so constructed that it may be presented in the form of a single light or candlestick or may be provided with arms of any number within the compass of a given circle with or without a central candle-holding cup or candle-support.

MUSIC-LEAF TURNER.—L. POULIN, Butte, Mont. Mr. Poulin's invention has reference to improvements in music-leaf turners, and the object in view is the provision of a simple mechanism by means of which the leaves of music may be readily turned in either direction and not interfere with the playing of a musical instrument.

NOTE.—Copies of any of these patents will 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.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. MUNN & CO.

Marine Iron Works. Chicago. Catalogue free. Inquiry No. 4947.—For machinery for crushing and mashing silica.

"U. S." Metal Polish. Indianapolis. Samples free. Inquiry No. 4948.—For machinery for manufacturing barrel staves.

AUTOS.—Duryea Power Co., Reading, Pa. Inquiry No. 4949.—For makers of air pumps operated by foot power.

For bridge-reerecting engines. J. S. Mundy, Newark, N. J. Inquiry No. 4950.—For manufacturers and dealers in the "Kombi" camera.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co. Box 13, Montpelier, Vt. Inquiry No. 4951.—For a small reciprocating tool holder driven by electricity for holding wood carvers' chisels and engravers' tools.

American inventions negotiated in Europe, Felix Hambrüer, Equitable Building, Berlin, Germany. Inquiry No. 4952.—For dealers in parts for the "P. Merminne" and "M. Henley & Co." revolvers.

Edmonds-Metzel Mfg. Co., Chicago. Contract manufacturers of hardware specialties, dies, stampings, etc. Inquiry No. 4953.—For apparatus or process for recovering free carbonic acid gas from fermenting liquor.

Machine Work of every description. Jobbing and repairing. The Garvin Machine Co., 149 Varick, cor. Spring Sts., N. Y.

Inquiry No. 4954.—For a water carafe which is divided in the center by a screw and having a nickel band around it.

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

Inquiry No. 4955.—For makers of glass paper-weights in which to mount photographs.

The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan.

Inquiry No. 4956.—For makers of composition ornaments for decoration purposes.

Empire Brass Works, 106 E. 129th Street, New York, N. Y., have exceptional facilities for manufacturing any article requiring machine shop and plating room.

Inquiry No. 4957.—For makers of strawboard pressed boxes such as are on the ends of mailing tubes.

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.

Inquiry No. 4958.—For automatic machinery for making merchandise pin sicketts.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 4959.—For a second-hand boiler of about 70 h. p. capacity for heating purposes.

Inquiry No. 4960.—For makers of reversible air motors of 1/2 to 2 h. p.

Inquiry No. 4961.—For makers of small ice and refrigerating outfits.

Inquiry No. 4962.—For makers of briquette machinery.

Inquiry No. 4963.—For machines for pressing liquid and mud peat.

Inquiry No. 4964.—For manufacturers of looms for weaving rattan.

Inquiry No. 4965.—For manufacturers of core drills.

Inquiry No. 4966.—For the address of the Allen Dense Air Ice Machine Co.

Inquiry No. 4967.—For manufacturers of mica axle grease.

Inquiry No. 4968.—For a butter cutter which cuts about 40 pieces to the pound.

Inquiry No. 4969.—For machinery for making fountain pen holders and feeders of hard rubber.



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.

(9269) R. P. asks. Please inform me through the column of "Answers and Queries" in your valued paper of any solutions of a specific gravity of three times as heavy as water or over and kindly oblige reader. A. A very heavy liquid is prepared by dissolving mercuric iodide in a solution of potassium iodide in water. If the mercuric iodide is not available, it may be prepared by precipitating a strong solution of mercuric chloride with a solution of potassium iodide, avoiding an excess of potassium iodide, since it would dissolve the precipitate. When it has settled decant the liquid and dissolve the precipitate in potassium iodide as before.

(9270) H. H. asks: Would you kindly give us information on the following problem: Suppose I have in my hand a military rifle which shoots 30,000 feet per second. I stand on a flat car going at the same rate, viz., 30,000 feet per second, and shoot at a target in the front end of the car. Would the ball strike the target? If so, explain; or if not, explain. A. Your inquiry is constantly reappearing with slight change of form. It was answered in our column of "Notes and Queries" Nos. 8823 and 8862. The answer depends upon the three fundamental laws of motion first stated by Sir Isaac Newton in the seventeenth century and known by his name to the present time. The first law states that "a force produces the same effect whether the body on which it acts is at rest or in motion." For this reason the powder sends the bullet in the case you propose just as if car and gun were at rest. The ball has two motions, one with the car caused by the car, the other caused by the powder which causes it to go along the car and hit the target at the front of the car exactly as if the car had stood still. You could stand in a car and throw a ball from the rear to the front, could you not? Why not be able to shoot a bullet in the same manner?

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending December 29, 1903.

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing various inventions with their corresponding patent numbers, such as Abdominal bandage, Advertising paper holder, Aerating apparatus, Air brake system, Aluminum sulfate, Amalgamating machine, Animal shears, Animal trap, Aromatic esters, Asphalt, stone, etc., manufacture of artificial, Atomicizer, Automobile, Automobile controlling gear, Awning hook, Bag filler, Bag, etc., handle, Ritter & Halpern, Bag holder, W. Lilly, means for attaching, W. C. Williamson, Balance escapement, A. M. Lane, Ball, See Lubricating metallic ball, Bangle fastening, F. Rabone, Barrel washing machines, barrel feeding apparatus for, R. Troebler, Bat, T. H. Murnane, Bead threading machine, F. Mermet, Bearing thermostat, G. A. Wall, Bearing, velocipede, E. G. Latta, Bearing, wheel, C. T. McCre, Bedstead, Arguslight & Olson, Bedstead, door, H. B. Ruggles, Beer cooler, G. F. Hager, Belt die for brick machines, etc., endless, A. W. Willett, Binder locking device, temporary, R. B. Wilson, Block signal system, Wolf & Williams, Blower, fan, J. M. Stukes, Body brace and truss, combined, S. R. Shepard, Boiler furnace, Henry & Milton, Boilers, draft appliance for locomotive, W. B. Warren, Boilers, product for prevention of furring in, P. Bez, Bolster, J. M. & J. H. Ames, Book covering machine, Morton & Sherman, Book, diagram, M. S. Calcutt, Boot and shoe stretcher, B. A. Waggaman, Bottle, non-refillable, O. C. Berchold, Bottle, non-refillable, E. T. Curran, Bottle stopper, A. Buckman, Bottle support, nursing, B. E. Ives

Table listing various inventions with their corresponding patent numbers, such as Bottles, cans, etc., top for tooth powder, H. B. Kent, Box, W. B. Brooks, Jr., Box covering machine form block, P. S. Smith, Box label and lid holder, E. J. Mitchell, Boxes, machine for pressing necks in, P. S. Smith, Brake, D. F. Earnest, Brake block and shoe, separable, W. D. Sargent, Bread, W. S. Sargent, Bread cutter, W. H. Bussler, Bronzing machine, A. Weber, Broom, whisk, H. L. Harris, Brush, paint, J. P. Kneuhmann, Bucket dumping apparatus, H. K. McCaughey, Bucket suspension device, J. H. Hayward, Buckets, suspension device for two rope, H. L. Reynolds, Building block molding machine, J. B. Cotton, Bullet mold, J. W. Anderson, Bundle carrier, P. E. Le Fevre, Button and tie holder, combined, E. Stempel, Button, collar, F. G. Neuberth, Button, linen, H. Kirchhoff, Cableway, T. S. Miller, Calculating and recording machine, C. D. Baird, Calculating instrument, H. N. Pierce, Calculating machine, H. Kaussen, Calculating, printing, or analogous machine attachment, A. R. Boynton, Camera shutter, I. M. Macy, Can, R. E. Pearce, Cans, etc., machine for operating on, C. H. Hanford, Candy making apparatus, rock, T. Suzuki, Candy pulling machine, C. D. Frankinson, Car bolster, S. P. Bush, Car construction, D. C. Courtney, Car coupling, B. A. Hermanson, Car coupling, P. S. Dugan, Car coupling, F. Lehmann, Car door, grain, R. G. Jenckes, Car drop doors and operating mechanism, D. C. Courtney, Car, dump, J. D. McGrath, Car fender, self-adjusting, A. O. Lamson, Car, railway, C. Vanderbilt, Car reflector, D. F. Cargill, Car, sand, A. F. McConnell, Car seat, F. Fasse, Car, side dumping, R. H. Hornbrook, Car switch-operating apparatus, tramway or other, A. King, Car wheel, G. S. Kyle, Car window lock, C. Graham, Carpet sweeper, G. L. Keenstierna, Carrier, See Bundle carrier, Cash register, T. Carney, Cash register, J. P. Cleal, Cash register, W. H. Muzzy, Cash register, H. S. Cross, Casting, H. H. Franklin, Cement shingle, G. C. Zwerck, Cement shingles, machine for making, G. C. Zwerck, Centrifugal machine, M. H. Barker, Charring and dry distillation of organic substances, apparatus for continual, H. C. Aminoff, Check perforating and printing machine, G. P. Robertson, Chemical mixer, G. Stevens, Chimney, C. Weber, Chlorination barrel, W. J. Armbruster, Chuck, drill, W. G. Middleton, Churn washer fan attachment, A. F. Moody, Churn operating mechanism, I. W. Beeler, Cigar branding machine, I. Liberman, Circuit changing apparatus, W. Meyer, Cisterns or the like, means for constructing, Skinner & Lindsey, Clamp collar, D. M. Lester, Clasp for garters, etc., C. E. Schaffner, Cleaning machine, D. A. Kennedy, Clevises, etc., pin locking mechanism for, H. A. Bergom, Clipper, hair, J. K. Priest, Clock, M. Wortmann, Clock striking mechanism, A. C. Schuman, Closet seat collapsible protecting device, I. Franken, Closets, etc., siphon reservoir for toilet, A. M. Morrison, Cloth holder, L. S. Wintrobtham, Coal loading apparatus, C. Allison, Cock, safety gas, H. J. Doll, Coffee pot, T. B. Ferguson, Coffin guide, W. Koepfer, Coke lorry, G. D. MacDougall, Collar fastener, horse, J. R. Rose, Comb, Richardson & Wright, Compound engine, A. J. Poet, Condiment holder, J. B. Williamson, Conveyor and elevator, endless, Coffin & Lewis, Conveyor controlling system, A. C. Eastwood, Cooking attachment, muffler, J. H. Fox, Cooking utensils, inner containing vessel for, A. Siebelist, Cooler, See Beer cooler, Copy holder, Shober & Reno, Copy pad, T. B. Ferguson, Couch, J. B. Haratman, Counting and indicating machine, W. Ackerman, Cream separator and churn, combined, J. A. Rosback, Crutch, Hammond & Bridgewater, Cultivator tooth mounting, F. Bateman, Cupboard extension, J. H. Waite, Curtain bracket, combination lace and roller, J. Yonker, Curtain fixture, A. L. Foy, Curtain or canopy, J. A. Chariton, Curtain pole bracket, Zimmerman & Lindewirth, Cutlery polishing machine, W. C. & J. B. Mallinson, Dead, preserving the, J. Karwowski, Detector bar clip and link, T. G. Stiles, Dish washing machine, H. H. Jones, Disinfecting apparatus, F. C. Nye, Display front for boxes, F. Davis, Display holder for ladies' hats, F. P. Rabin, Dissolving organic or inorganic substances, C. H. Rupperts, Distilling apparatus, J. Stocker, Door and hanger therefor, pocket ball bearing, J. K. Thoma, Door opening device, O. M. Edwards, Door stop, A. A. Terry, Dress clip, T. Morton, Driers, filling or emptying apparatus for vacuum, E. Passburg, Driving apparatus, A. E. Norris, Eye and making same, blue anthraquinone, Hepp & Hermann, Eye, trisazo, Israel & Kothe, Eggs, composition of ingredients for improving storage, B. Prikryl, Electric circuit regulating device, M. H. Baker, Electric circuits, constant power factor regulator for, M. H. Baker, Electric circuits, regulating, M. H. Baker, Electric generator for intermittent currents, M. P. Ryder, Electric generator, turbine, Porter & Carrier, Electric meter, L. Gutmann, Electric switch, I. G. Waterman, Electricity for sectional circuits, bar for collecting, H. Bolter, Elevator, A. & T. E. Winiarski, Elevator, A. R. Wilfey, Elevator signaling apparatus, J. McLean, Engine cooling apparatus, internal combustion, G. McCadden, Engine lubricator filler, steam, A. M. Crowl, Engine piston, steam, J. Swan, Engines, feeding and igniting device for explosive, W. Remington, Evaporative cooler or condenser, W. H. Miller, Expansion joint, R. E. Vail, Explosion chambers, apparatus for loading, F. Anschutz, Explosion chambers, device for cleaning, F. Anschutz