

RECENTLY PATENTED INVENTIONS.
Engineering.

ROTARY ENGINE.—William S. Sutton, Belvidere, Ill. This rotary engine comprises a casing, a shaft extended through the casing, pistons mounted on the shaft, but isolated one from the other, each piston comprising a cylinder or hub portion and a radial wing, an abutment wheel for each piston, each abutment wheel consisting of a hub portion having inlet and outlet ports and radial blades, means for controlling the admission of steam through the ports, disks mounted on the hub portions of the abutment wheels, the disks being provided with radial slots, dogs pivoted in the casing, there being two dogs for each disk, the dogs having fingers to engage in the slots of the disks and means for moving the dogs into and out of engagement with the disks.

ROTARY ENGINE.—Thomas C. Luce, Richmond, Mass. This rotary engine comprises a cylinder, semi-circular in cross-section, a slide-valve for governing admission of steam, a regulating valve movable with and adjustable relatively to the slide-valve, an abutment movable in the cylinder, a semi-circular piston in the cylinder, comprising a center block and side pieces, segmental packing strips between the side pieces and adapted to engage against the sides of the cylinder, springs for forcing the segmental packing-strips outward, a packing-strip made in two sections and arranged between the side pieces at the end of the piston, a spring exerting longitudinal pressure on the sections and a spring for forcing the sections outward.

ROTARY ENGINE.—Augustine N. Gilbert, Berlin, N. H. This improvement in rotary engines consists essentially in two parallel shafts having cylinders or drums placed thereon and connected by a chain passing over the same. To the chain are attached bars extending parallel with the direction of the drums and forming piston heads. This chain and the drums are surrounded by a casing which forms the cylinder, and the device is provided with suitable inlet and exhaust ports and valves and with devices for moving the abutment plates.

ENGINE CONTROLLING DEVICE.—Alexander P. Loper, Stonington, Conn. The purpose of this invention is to provide an engine controller especially designed for use on steamers to enable the pilot to stop, start or reverse the engines and to run them at any desired speed. The invention consists of an auxiliary cylinder containing a piston connected with the throttle-valve and with the reversing gear of the engine for actuating both simultaneously, and a valve directly under the control of the pilot and connected with a supply and with the ends of the auxiliary cylinders to shift the piston therein in the desired direction.

Mechanical Devices.

PULVERIZING ATTACHMENT FOR CULTIVATORS.—Gilbert G. Gilbertson, West Mitchell, Ia. In this pulverizing attachment for cultivators and like implements, are provided a head, tines carried thereby and means for adjustably connecting the head with the beam of the implement. A clamp comprising cross bars is connected at one end to the cultivator handles and a hanger is connected to and enters the tine portion of the attachment. A clamping screw passes through the bars of the clamp and secures the hanger. This attachment is designed to level the ridges left by the cultivator teeth or blades, and to gather rubbish and weeds and leave them exposed at the top of the ground without clogging the machine.

VEHICLE BRAKE.—René Marie Artus, Vicomte de Chivré, Gonneville, par Saint Pierre-Eglise, Département de la Manche, France. The principle of this invention is the application of a pull on a flexible connection adapted for frictional contact with the shaft, wheel, hub or other rotating part of the vehicle. The flexible connection is operatively connected to the brake proper and the friction between the connection and the rotatable part produces a tension on the connection and this tension is made use of in applying the brake. The principle may be applied to all kinds of vehicles.

COIN-CONTROLLED APPARATUS FOR DISPENSING LIQUIDS.—William P. Hackett, Winchester, Ky. This apparatus consists of a faucet, a cylinder with piston and rod connected to and operating the faucet, a compressed-air valve connected to the cylinder, a coin carrier operating the air valve, a liquid receiving and weighing device and a discharge air-valve controlling the escape of air from the cylinder, the discharge valve being opened by the movement of the liquid receiving device. By inserting a coin into the apparatus, a certain amount of liquid is dispensed.

FARE REGISTER OPERATING MECHANISM.—Charles Bernstein, New York City. In this device a railing on the platform of a car embraces one of a pair of doors for the car, and a swinging section for the platform is located within the space embraced by the railing. A draw-rod has connection with the swinging section and a rock shaft is operated by the draw-rod. A finger extended from the rock shaft is adapted to operate the lever of the fare-register. The passenger, when boarding the car, will thus actuate the mechanism to ring up and register a fare to be collected after he has entered the car.

PROCESS OF AND APPARATUS FOR CONTINUOUSLY FILTERING AND PRESSING GARBAGE.—Charles Edgerton, Philadelphia, Pa. This process of continuously filtering the liquids from the solids in the treatment of garbage consists in distributing the slushy material in a layer upon a traveling diaphragm, and applying a hot, gaseous pressure to the upper side of the layer while it is in transit. The filtering and pressing apparatus comprises a casing, an endless filtering belt and means for closing its edges against the sides of the casing, crushing rolls at the end of the belt, a subjacent belt extending under and beyond the first named belt and having a fibrous covering and a series of parallel rollers arranged above the first named series and carrying an endless metal slatted belt, a frame for supporting the upper adjustable series of rolls being pivoted at one end and made adjustable at the other.

CAR FENDER.—Isaac Macowsky, New York City. The object of this invention is to construct

a car fender which can be lowered to the ground by the use of the ordinary brake-shaft. The connection between the fender and the brake-shaft is such that the fender may be lowered in advance of the application of the brakes, at the same time not interfering in the slightest with the operation of the brakes. To this end a pivoted fender, having a yielding support, is connected to the brake shaft, a drum being mounted to rotate and having a chain leading to the fender and frictional connections from the drum to the brake-shaft whereby the fender is depressed when the brake is applied. Means are provided enabling the fender to rise automatically from the track when the brakes are removed.

Miscellaneous Inventions.

SELF-CLOSING UMBRELLA.—Frank E. Stover, Luray, Va. In this umbrella the ribs and stretchers are connected with a runner having in its upper face seats in which the lower ends of the stretchers loosely rest. Coil springs are secured to the stretchers and to the upper portion of the runner whereby the springs serve to hold the stretchers to the runner and also to force the runner downward when released from its locking device. The usual tie-wire may be dispensed with, and the stretchers may be held in the runner by the action of the springs only.

CIGARETTE WRAPPER.—Carl Hermann Mehner, Berlin, Germany. This cigar or cigarette wrapper consists of a thin metal film, coated with a suitable innocuous substance which will induce such an action of capillarity with the metal as to prevent the transformation of the melted film into large drops.

STAKE FOR PLANTS AND TREES.—Theron N. Parker, Brooklyn, N. Y. This invention consists principally of a support made in tiers vertically adjustable one on the other, each tier having legs and a rim, the legs of one tier being slidably connected with the legs of the preceding tier. The invention further consists of a support made in sections, each formed with a leg terminating in an eye and a rim part, the free end of the latter being formed with a pin adapted to engage the eye of the adjacent section.

THAWING APPARATUS.—David Phillips, Pony, Montana. The thawing device provided for in this invention comprises an air-heater, a suction-fan for drawing air from the heater, a flexible pipe receiving the discharge from the fan, a discharge pipe having connection with the flexible pipe, nozzles on the discharge pipe, a sleeve in which the discharge pipe is axially and longitudinally adjustable, a plate having bearings in which trunnions on the sleeve engage, a block, a socket-plate on the block and with which the first-named plate engages, and a bolt passing from the first-named plate through the socket plate and through the block.

KNOCK-DOWN HOUSE.—Peter A. Tofft, New York City. This invention embodies an improvement in that class of houses intended to be readily taken apart and moved from place to place. The house is in general of a hemispherical shape and consists of vertical ribs extending from the base toward the apex and provided with grooves in their edges, and of plates which slide within these grooves and overlap one another. The parts are all divisible into small sections so that they may be readily transported.

CHAIN-LINK.—William H. Griffith, New York City. This bent-wire link has a terminal eye at one end, a loop, a bight or coil corresponding in size to and coinciding with the terminal eye and forming a duplex eye with parallel folds, a transverse wrap below the coinciding eye and bight, the link having the end eye extended and below the transverse wrap and held within its embrace.

JAR AND TEMPORARY CLOSURE THEREFOR.—Julian P. Lyon, Detroit, Mich. This invention provides for a jar which may be held closed by the pressure of the atmosphere rather than by the pressure of a clamp, although the latter is used in the first stage of preserving. A fastener is furnished consisting of resilient wire, having its end portions bent downward and inward to engage under the shoulder of an enlargement of the jar. A downwardly extending central portion of the wire presses against the top of the cover. When the contents of the jar begin to boil, the steam forces the cover up to an extent sufficient to permit the escape of steam. The vacuum thus produced causes the cover to be atmospherically pressed down, thus hermetically sealing the jar. The fastening is then removed.

Designs.

SHOE POLISHER FRAME.—Edward R. List, Odin, Ill. This design consists of a main or body portion having its middle portion and the depending ends and the upper projection extending in the direction of the length of the middle portion and having a handle-like formation at one end and a knob-like projection at the other end. The middle portion is curved or arched from end to end on both sides, and the ends drop from the middle and have their inner faces formed on curves merging in the curved under sides of the middle portion.

BOTTLE CAP.—Herman Tappan, New York City. The leading feature of this design consists in a spiral rib forming the lower or base portion of the cap, the rib terminating at the lower end of a cylinder crowned by a head, the side of which bulges out, the top thereof being arched.

JARDINIÈRE.—William M. Green, New York City. The essential characteristic of this jardinière consists in a semi-oval body comprising a top band and a bottom drop ornament. The band and ornament are apparently connected by a series of ribs and a bowl visible at the spaces between the ribs. The legs have flat sides, are fitted to the exterior of the body, are inwardly curved between their lower ends and the body and are outwardly curved at their lower extremities. The body is decorated with festooned chains. A platform is located between the legs.

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Notes & Queries

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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.
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Minerals sent for examination should be distinctly marked or labeled.

(7442) O. S. asks: 1. If a flagpole about forty feet high, made of 2-inch gas pipes, would extend too far above a house of about twenty feet in height to be a good lightning conductor, and how far away from the house should it be placed? A. If you wish such a flagpole as this, it can be made to do duty as a lightning rod also by carrying its lower end down to a permanently wet soil and connecting it to the house by heavy iron wires. These should extend to all parts of the roof and over chimneys and gables. The pole should be as close to the house as possible. 2. Would two conductors of this kind, one each end of the house, connected at their upper ends by a heavy copper wire running from one to the other, be a safer and better conductor? A. Two rods at opposite ends of house are better than one. Use iron wire about one-eighth inch in thickness. 3. Would there be any danger of the shock killing a person in the house or stock in a barn in case the conductors were struck by lightning? A. There would not be so much danger as there would be if the house without a rod were struck. The 2-inch pipe is very much heavier than is desirable for a lightning rod. A half-inch pipe is large enough.

(7443) W. T. E. asks: Will you please answer me through your Notes and Queries and give me a good formula for a metal or eikonogen single solution developer for instantaneous and time exposure, and oblige? A. We refer you to formulas in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 1050, 1107, 1152 and 1162. Price 10 cents each by mail.

(7444) L. F. T. asks: How many pounds of No. 18 single cotton-covered wire will I have to use in order to get an 8 inch spark, using 12 gage wire for primary and 20 amperes at 50 volts; also, how many pounds for 12 inch spark, using same current? A. You should not use a wire coarser than No. 36 in a secondary coil for 8 or 12 inch sparks. The current you propose using is much too heavy. No. 12 wire will not carry it without overheating in the coil. A quarter of this current in a good coil will give you a 12 to 15 inch spark. We have no data for these very large coils. The manufacturers of the best coils regard their data as trade secrets. They are not given in any work which we have at hand. A good coil, giving a 6 inch spark, was described in SUPPLEMENT, No. 1124. Price 10 cents by mail. A new book, "Radiography," by Bottone, gives much information regarding making coils. Price \$1 by mail. If you follow these instructions, but double the carrying capacity of the primary by using wire with twice the cross section, you can then wind secondary for the longer spark. All large coils are made in the manner described in the works referred to above.

(7445) F. C. V. asks: 1. Should the spools, bearing plates and hub of a dynamo be brass? A. Those parts should be made of brass, in which it is not desirable to have magnetism developed. Those which you mention are such. 2. Can the alternator be turned into a continuous current? If so, please tell me how, or refer me to any of your former papers, since we have kept on file all the SCIENTIFIC AMERICANS and SUPPLEMENTS from the first issue until the present. A. No. This machine is not intended for a continuous current machine. 3. Can the alternator be turned into a motor? A. No. 4. How strong a battery will be required to excite the field magnets? A. Four to six cells.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

MAY 24, 1898,

AND EACH BEARING THAT DATE.

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

Accumulator plate, I. Roeler.....	604,418
Acid alkyl esters, making orthosulfaminobenzoic, B. R. Seifert.....	604,503
A adhesive compound and producing same, C. M. Higgins.....	604,584
Alimentary products, producing, J. H. Kellogg.....	604,493
Alloying iron and hydrogen, process of and apparatus for, G. W. Gesner.....	604,580
Arch stone, O. Forster.....	604,658
Automatic gate, J. C. Laporte.....	604,402
Ax safety guard, W. L. Marble.....	604,624
Ballo ball, W. J. M. Leary.....	604,630
Basket making machine, T. Crebbin.....	604,657
Bearings, ball retainer for antifriction, H. B. Keiper.....	604,678
Bed comfortable, device for supporting and stretching, Palmer & Mercer.....	604,414
Bicycle, L. Roden.....	604,639
Bicycle, R. C. Connelley.....	604,710
Bicycle brake, C. P. Burner.....	604,262
Bicycle brake, P. Krebs.....	604,567
Bicycle handle, M. Wallis.....	604,444
Bicycle handle, collapsible and adjustable, W. H. Cook.....	604,371
Bicycle lock, A. T. O'Neil.....	604,596
Bicycle locking device, J. C. Barr.....	604,452
Bicycle pump, automatic, W. Metcalf.....	604,625
Bicycle seat, supplemental, W. E. Mayo.....	604,699
Binder and lock, temporary, H. E. Dade.....	604,561
Bismut, oxidized, producing, J. Schmidt.....	604,571
Blackboard, Schneider & Branner.....	604,422
Boiler flue cleaner, steam, H. J. Johnson.....	604,397
Bolster, metal, C. E. Bauer.....	604,556
Bolt protector, stay, F. J. Coins.....	604,368
Book, account, J. Eichert.....	604,521
Book, blank, T. Elliott.....	604,522
Bottle closure, P. H. Morath.....	604,629
Bottle, non-refillable, J. H. McDonald.....	604,497
Bottle stopper, W. Walker.....	604,443
Bottles, device for preventing fraudulent refilling of, M. Rosenberg.....	604,545
Box or can, A. R. Ferguson.....	604,492
Brake beam, Burgess.....	604,458
Breaking machine, M. F. Williams.....	604,485
Brush, electric, E. M. Hellwig.....	604,471
Bucket, automatic dumping, W. F. Smith.....	604,433
Building blocks, child's, C. S. Burton.....	604,708
Button and neckwear retainer, collar, J. Acron.....	604,571
Buttonhole casing, A. M. Hirsch.....	604,470
Cabinet, kitchen, H. W. Boynton.....	604,454
Calendar, perpetual, O. H. Anson.....	604,649
Cans, combined body blank and connecting strip for packing, H. C. Hunter.....	604,394
Car bolster, C. E. Bauer.....	604,555
Car bolster, T. M. Gallagher.....	604,439
Car buffer, H. F. Ball.....	604,451
Car buffer, A. M. Waitt.....	604,442
Car coupling, M. A. Knowles.....	604,586
Car coupling, C. H. Smith.....	604,505
Car draught beam, T. W. Saling.....	604,421
Car fender, L. J. H. Taylor.....	604,421
Car, funeral, J. Burns.....	604,602
Car journal box, rail way, W. N. Marks.....	604,539
Cars, means for preventing derailment of railway, M. E. Beasley.....	604,513
Cardboard scoring machine, C. W. Hobbs.....	604,530
Carpet fastener, J. S. Gardine.....	604,528
Caster, R. L. Dorsey.....	604,520
Caster, ball, K. A. Klose.....	604,400
Chain cleaning attachment, R. W. Sise.....	604,429
Chair fan attachment, rocking, R. M. Copenhaver.....	604,519
Chisel holder, J. J. Flyckt.....	604,476
Cigar machine, O. Wartmann.....	604,445
Cigarette former, W. S. Mallard.....	604,623
Circuit breaker, magnetic, D. M. Moore.....	604,682
Circuit interrupter, D. M. Moore.....	604,688
Circuit interrupting mechanism, D. M. Moore.....	604,687
Cleaner. See Sifter flue cleaner. Dish cleaner. Flue cleaner. Railway track cleaner.	
Clock, electric, W. Whitehead.....	604,508
Clock, secondary electric, A. D. Blodgett.....	604,453
Cloth superposing machine, H. E. Couzineau.....	604,605
Clothes drier, W. E. Shields.....	604,428
Clothes rack, drier, H. P. Tabor.....	604,490
Cock box, stop, Lobdell & Talcott.....	604,622
Coin controlled apparatus guard, Mayer & Pomeroy.....	604,407
Coin delivery apparatus, E. J. Brandt.....	604,600
Contribution boxes, device for collecting contents of, G. Fuchs.....	604,527
Cork cutting machine, H. Weinz.....	604,705
Corn husker, G. S. Gunderson.....	604,528
Corn husker, adjustable, W. F. Lillie.....	604,476
Cotton elevator, cleaner and feeder, J. W. Seifert.....	604,426
Cradle and child's carriage, combined motor, C. F. Nelson.....	604,498
Curtain fixture, A. C. Fischer.....	604,656
Cutout, automatic resetting fusible, Holmes & Heath.....	604,616
Cutter head, H. M. Wilcox.....	604,707
Cutting machine, A. Palm.....	604,413
Cycle frame, means for making, F. A. Ellis.....	604,490
Cycle umbrella holder, A. T. Woodward.....	604,674
Cyclist's brace and back support, W. C. Humphrey.....	604,677
Deodorizing and purifying petroleum oil, J. Bragg.....	604,515
Dish cleaner, Parr & Evans.....	604,634
Disinfecting apparatus, J. Eyttes.....	604,562
Distilling apparatus, water, J. Stretch.....	604,550
Door fastening, screen, E. J. Hagan.....	604,468
Doubling and twisting machine stop mechanism, A. M. Fricke.....	604,500
Doubling shears, F. Doune.....	604,374
Dredging apparatus, A. McDougall.....	604,628
Drier. See Clothes drier.	
Drill. See Railway track drill.	
Dynamo driving mechanism, P. W. Alexander.....	604,511
Eggs, cleaning and drying, J. A. Kunkel.....	604,524
Electric heater, E. E. Gold.....	604,385
Electric lighting apparatus, D. M. Moore.....	604,684
Electric lighting systems, interrupter for, D. M. Moore.....	604,681
Electric meter, T. Duncan.....	604,459
Electric light, device for kerosene or other burner, S. M. Meyer.....	604,626
Elevator. See Cotton elevator.	
Elevator safety device, H. Baum.....	604,557
Elevator safety device, F. M. Bell.....	604,360
Engine. See Rock drill engine. Rotary engine. Steam engine. Traction engine.	
Envelope, H. Steven.....	604,643
Envelope, C. P. Monfort.....	604,686
Envelope, E. V. D. Rousseau.....	604,419
Extractor. See Oil extractor.	
Eye-glass nose guard, G. W. Wells.....	604,448
Eye-glass nose guard, J. B. Moran.....	604,510
Fabric turning machine, tubular, R. Barris.....	604,482
Fastener, E. N. Parker.....	604,542
Fastener, W. S. Richardson.....	604,617
Fastening device, W. T. Messinger.....	604,408
Fence post, G. A. Diekmann.....	604,458
Fence stays, machine for crimping wire, C. K. Jones.....	604,647
Fences, met a fabric for wire, J. R. Jones.....	604,398
Filter, W. W. Wilson.....	604,573
Filter, gasoline, C. S. White.....	604,450
Filter, oil, J. B. Raab.....	604,568
Filter, water, C. F. Hitchcock.....	604,615
Firearm, breech loading, P. Casmore.....	604,438
Fire extinguishing and disinfectant distributing apparatus, Thompson & Nuhring.....	604,439
Fire kindler, W. R. E. Tharp.....	604,438
Flue cleaner, steam, J. T. Thompson.....	604,551
Food, apparatus for treating or sterilizing canned, F. W. Smith.....	604,642
Furnace. See Hot air furnace. Plumber's furnace.	
Furnaces, device for admitting air to, R. Goll.....	604,385
Gage glass mounting, A. Vile.....	604,441
Game apparatus, C. B. Aske.....	604,530
Game device, A. Lang.....	604,401
Gas, apparatus for using liquefied or compressed, J. B. Fournier.....	604,659
Gas fixture, safety, A. N. Hoxie.....	604,617
Gas generating apparatus, acetylene, G. De Roussey de Sales.....	604,667
Gas manufacturing apparatus, H. C. Shields.....	604,427
Gas vending apparatus, automatic, Mayer & Pomeroy.....	604,406
Gate. See Automatic gate. Nursery gate.	
Gearing, H. B. Keiper.....	604,534
Generator. See Steam generator.	
Gold bearing sand, apparatus for concentrating, A. McDougall.....	604,627
Gold flakes from sand, machine for separating fine, J. N. Marion.....	604,566
Gold saver, hour, Chaloner & Lichtenberger.....	604,653

(Continued on page 365)