RECENTLY PATENTED INVENTIONS.

Bicycle Appliances.

BICYCLE-HOLDER.—CHARLES B. DURFEE and FRANK M. WILLIAMS, Belleville, N. Y. The purpose of this invention is to provide a bicycle-holder which shall be simple, inexpensive, and compact. According to the invention, a vertical support is recessed to receive the tread of the wheels. To this support an arm is pivoted at one end to fold down thereon when not in use. A recessed block pivotally mounted, is adjustably secured to the arm, whereby, when the latter is swung outwardly from the support, the recessed block can be engaged with the bicycle frame to hold it against the support and above the floor.

BICYCLE-STAND.—JOHN F. BENGERT, Brooklyn, N. Y. To provide a stand which can be permanently carried on the bicycle frame without interfering with the action of the wheels, which can be used either on a road or on the floor of a building and which enables the bicycle to be raised from the ground if necessary, this inventor has devised a support consisting of a bracket attachment for the bicycle frame, a sleeve or socket held to rock upon the bracket attachment and a standard having end movement in the sleeve or socket and provided with a foot. By the arrangement described, the standard may be placed at an inclination to hold the frame in an upright position when the rider has dismounted, or the standard may be placed in a vertical position to support the frame so that its wheels will clear the ground or floor.

Electrical Inventions.

ELECTRIC-RAILWAY.—WILLIAM W. DOTY, New York city, JAMES A. MCKNIGHT, Mount Vernon, N Y., and CHARLES GRANTEN, New York city. The object of this invention is to propel cars and trains while maintaining a steady current for running the cars properly without danger of deadly overhead or rail currents. In addition to a feed wire, there are also employed a sectional working conductor and a series of circuit-controllers, one for each section of the working conductor. Each of these circuit-controllers comprises a switch made with a conducting and a non-conducting section, an electric actuating-device electrically connected to the working conductor section belonging to that controller and two circuit-closers controlled by the switch, so arranged that only one of them can engage the non-conducting portion of the switch at a time. One circuit-closer operates when the electric actuating-device is energized to connect the feed-wire with the working-conductor section belonging to the same controller. The other circuit-closer operates when the electric actuating-device is de-energized to connect the feed-wire with the working conductor-section belonging to the next controller.

ELECTRIC CUT-OUT.—HARRY A. LEWIS, Norristown, Pa. This invention provides an electric cut-out designed for use in a line-wire to relieve a building from danger of a strong or excessively charged current produced by lightning or other causes. the apparatus breaking the current automatically and diverting the current from the building. The cut-out is provided with a circuit-breaker interposed in the line wire, and with a thermostat comprising a tube fixed at one end, a wire-coil in the tube, a rod held to press the coil against the tube to heat the latter, and intermediate mechanism for connecting the tube with the circuit-breaker. A strong or excessively charged current heats the tube and causes it to act on the current-breaking devices.

FUSE-HOLDER, CIRCUIT-BREAKER, AND LIGHTNING-ARRESTER.—HARRY A. LEWIS, Norristown, Pa. To provide an improved fuse-holder, circuit breaker, and lightning-arrester arranged to protect instruments and buildings from the effects of high-voltage currents, produced by lightning, this inventor has devised means whereby the current is either passed into the earth or let out by a return wire. The device comprises a stationary contact adapted for connection with an electric circuit, a movable arm likwise adapted for connection with the circuit, a stationary insulating-block normally engaged by the movable contact and separating it from the stationary contact, and means adapted to be released by a high-tension discharge for holding the movable contact normally stationary. This contact, when released, is arranged to move first into engagement with the stationary contact, and then away therefrom.

INSULATOR.—CHARLES L. WINGARD, Walla Walla, Wash. This insulator is constructed with two duplicate sections matching to form a tubular body. Each section has its edges provided with interlocking shoulders, and has a head provided with a notch leading to the bore thereof, through which notch the conductor may be passed. The insulator may be applied after the wiring is done, or it may be first put in place and the wire then run through it, as may be most convenient. When once in place, the insulator cannot be removed accidentally.

Mechanical Devices.

STENCIL-MAKING MACHINE.—JULIUS STERNFELD, New York city. The purpose of this invention is to provide a machine for puncturing paper accurately, so as to form stencils such as those used for marking the outlines of monograms. The machine is arranged to permit the operator to form any desired number of stencils at the same time, and comprises a depending bearing mounted to turn a counterbalanced arm pivoted in the bearing, and a casing provided with a rod projecting from its upper face and with a tube projecting from its lower face. In the casing a cone-pulley is mounted, on the shaft of which an eccentric is secured, to which a needle-carrying rod is connected projecting out through the tube. On the counterbalanced arm are pulleys and below it, a driven pulley is mounted in a support. Around the pulleys an endless belt passes. Tightening-pulleys are carried by the support of the driven pulley.

ELEVATOR FOR GRANULAR MATERIAL.—APOSTOLOS MARANGOS, Marseilles, France. To provide an elevator of the type used on floats or pontoons for loading or unloading ships, this inventor has devised a construction which is not affected by the pitching of the float on which it is placed. To a mast, a boom is movably connected. A hanger is suspended from the boom to swing about a horizontal axis. In the hanger below this axis and extending crosswise thereof, a horizontal shaft is journaled. On the horizontal shaft an elevator is freely suspended, comprising a vertical screw-shaft and a casing surrounding the shaft engaging gear-wheels located on the horizontal shaft and vertical shaft. A pulley is mounted on the horizontal shaft and is connected to rotate with the gear-wheel thereon. Pulleys are also mounted to rotate about the suspension-axis of the hanger. A driving connection passes over the pulleys.

ROTARY ENGINE.—SAMUEL T. WILSON, Charleston, W. Va. This rotary engine comprises a cylinder-casing, two separable rings attached to the heads and forming an annular cylinder open at one end, an abutment projecting from the casing-head and a cylindrical piston rotating concentrically with the cylinder and having a flange at its end of greater diameter than the body and projecting longitudinally into the annular cylinder. This flange has a slot extending across its face. A piston-head fits the slot and cylinder. Extending longitudinally to the piston and through the flange is a stem attached to the head. A cam-ring surrounds the piston, and lugs attached to the stem engage the cam-ring to reciprocate the piston head when it passes the abutment.

Railway Appliances.

PNEUMATIC RAILWAY-SIGNAL.—LEWIS S. BROWN, Columbus, O. This invention is an improvement in pneumatic railway-signaling apparatus, comprising an air-pumping apparatus operated by the passage of the car-wheels and a distant air-motor operated by the air thus pumped and sounding a bell. From the air-compressing or pumping device actuated by the passing of the train, leads an air-supply pipe. A reaction wheel composed of hollow arms, having tangential openings at their outer ends and having a hollow axis connected with the air-supply pipe, is also provided. With this wheel a disk revolves, having side projecting lugs or arms. A bell surrounds the disk, and a spring-controlled striker is partly interposed in the paths of the lugs mentioned and is engaged thereby to sound the bell.

AUTOMATIC APPARATUS FOR PREVENTING COLLISIONS.—JOHANNES VERMEHREN, Hellerup, Denmark. This apparatus is designed to prevent collisions between trains, and consists of mechanism between the rails which is set in action by the train when drawn up at a station or stopping place. This mechanism actuates an appliance arranged at a distance from the stopping place in such a manner that the appliance works a brake apparatus on any train which may subsequently arrive at that point and thus stops it, independently of the engine driver and irrespective of any signal being at "danger" or at "safety." The appliance in question is placed at such a height from the track that it can engage with an arm extending from the side of the locomotive arriving at that point and thereby actuate the brakes. The appliance is brought into operative position by means of the mechanism at the stopping place, which is actuated by an entering train.

Miscellaneous Inventions.

ADJUSTABLE SPRING-BEARING.—NICOLAS DUVAL-PIHET, Paris, France. This invention provides a suspension device for the frames of light vehicles, such as bicycles, and has double springs or cushions between each member of the fork and the wheel-axle, one spring of each set being a compression spring and the other an expansion spring. Both springs are located in a single casing above the axle.

PAPER PLANT-BOX.—JOSEPH T. CRAW, Jersey City, N. J. The purpose of this invention is to provide a paper plant box in which seedlings may be grown and young plants reared. The paper-box is made from a blank comprising a series of panels of the shape of a parallelogram, one of the end panels being provided with a side flap. All of the panels are provided with rectangular flaps at their lower edges, each of the bottom flaps being provided with a diagonal slot to receive a flap when forming the box. Boxes of this square form have the advantage of economizing space, since they may be closely packed together on a growing table or in a cold frame, each box fitting directly against its neighbor.

CORNICE-LADDER.—JAMES W. ANDERSON, Philadelphia, Pa. To provide a ladder especially adapted to be hung from a cornice, which ladder shall be durable, light, and easily applied, this inventor has devised various new improvements. To the lower portion and at one side of the ladder, a horizontal platform is secured. Two fender-rails are located respectively at each side of the platform and are adjustable horizontally. The fender-rails extend laterally beyond the side of the ladder opposite the side having the platform. A guard-rail is secured to and extends transversely across the fender-rails, and has its ends projecting beyond the fender-rails and provided with transverse extensions.

BUILDING-TRUSS.—WILLIAM A. BORING, New York city. The purpose of this invention is to provide a truss for use in spaces which will not receive any other form of truss of equal bearing capacity in proportion to its weight, and which possesses great lateral strength to sustain a wind load bearing on a structure supported by the truss. The truss comprises two base-chords, an apex-chord, struts extended from the base-chords to the apex-chord and a center-beam extended longitudinally of the truss, at its base. From about the center of the struts to this beam, knees extend. From about the center of each strut to the base-chord, braces extend. The braces and knees serve to strengthen the struts in three directions.

Designs.

JAR.—JOHN SCHIES, Anderson, Ind. The leading feature of this design is the sectional configuration of the mouth of the jar, with an external outward flare in an upward direction and with an inner flared portion uniting with the rounded inner surface. The jar-body is formed with plane panels and slopes thence into union with the ornamented cylindrical neck.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for 10 cents each. Please send the name of the patentee, title of the invention, and date of this paper.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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.

(7468) S. R. M. asks: Which of two glass balls, No. 1 and 2, exactly the same size, weight and material and conditions, would be the most likely to break were they brought together at different speeds, No. 1 at one-half the speed of No. 2, all conditions except speed to be the same? A. The two glass balls will be subject to an equal breaking force at moment of collision. This is in accordance with Newton's third law of motion. Action and reaction are equal. Or, as it is stated more fully in Kent's "Pocket Book," "If a force act to change the state of a body with respect to rest or motion, the body will offer a resistance equal and directly opposed to the force," The answer then is, Both will break if the force of the blow is sufficient to break either. Yet it is a common belief among sailors that in a collision the vessel which is going faster is injured less than the one that is moving slower. This notion does not seem to be supported by the result of the recent collision of the "Bourgogne" and the "Cromartyshire." The ball No. 2, moving twice as fast as No. 1, will have four times the energy of No. 1, and could strike four times as heavy a blow upon any barrier capable of receiving it. But ball No. 1 cannot receive the full energy of No. 2, any more than an egg can receive and use up the full energy of the blow of a sledge. After the sledge has demolished the egg, it will deal a heavy blow to the surface upon which the egg lies; so ball No. 2 can overcome the energy of No. 1, and its fragments will move on in the same direction as before the collision with three-fourths of its energy remaining in them, the other fourth having been used in stopping No. 1. No. 2 can only spend against No. 1 as much energy as No. 1 possesses, and No. 1 can use against No. 2 the same amount of energy. Now if this will break one of the balls, it will break both of them, since, by the conditions of the problem, they are equally strong. This was well understood as long ago as the time of Socrates, who is reported by Plato, as asking: "Is not the striker hit with the same blow as he who is struck?"

(7469) J. W. E. says: How far can one of our large battleships be seen with aid of glass? In other words, how many miles can a battleship be seen by looking through glasses? A. The distance at sea at which a vessel may be seen with a glass depends upon the height of the vessel's upper works, as well as the height of the observer above the sea. When the heights of both vessels are from 25 to 30 feet, their upper works may be seen at 13 miles. From a masthead 100 feet above the sea the upper works of vessels may be seen 20 miles in clear weather. The smoke of steamers shows their position from 25 to 30 miles distance.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

JULY 19, 1898,

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Alarm. See Railway signal alarm.
Alkali metals from their chlorids, apparatus for producing, P. Danckwardt 607,506
Animal trap, J. Knoop 607,691
Arm rest, L. Barr 607,675
Armor plates, etc., apparatus for applying heat to surfaces of, T. J. Tresidder 607,777
Baking pan, J. Mathy 607,759
Barrel, beer, R. Piotrowski 607,661
Basket machine, W. Jackson 607,689
Bath. See Electrolytic bath.
Bath room and water heater, portable, W. H. Thiell 607,791
Beading machine, C. B. Hatfield 607,647
Bearing, antifriction, J. C. Reber 607,780
Bearing retainer, ball, W. H. Binns 607,584
Bearing, vertical shaft, O. Anderson 607,535
Beer pasteurizing apparatus, W. J. Ruff 607,770
Belting, F. W. Oliver 607,454
Bicycle, W. F. Brinton 607,500
Bicycle, A. F. Hood 607,648
Bicycle, L. F. Parks 607,606
Bicycle attachment, G. H. Pacaud 607,455
Bicycle chain, L. C. Krummel 607,752
Bicycle, chainless, W. T. Shryock 607,710
Bicycle driving gear, L. W. Noyes 607,522
Bicycle equalizing appliance, A. I. Thayer 607,667
Bicycle gear, D. W. Guiles 607,658
Bicycle holder, L. L. Martin 607,545
Bicycle hub and bearing, J. Baker 607,727
Bicycle package carrier, J. M. Erwin 607,752
Bicycle parcel carrier, O. W. Schaum 607,487
Bicycle power mechanism, C. T. Umsted 607,582
Bicycle saddle, J. A. Hunt 607,565
Bicycle support, A. I. Gallaway 607,795
Bicycle support, Welch & Burkhart 607,779
Bicycles, etc., tool box for, Deitsch & Dorn 607,599
Board. See Bulletin board.
Board clamp, W. Jordan 607,567
Boiler furnace, steam, E. J. Elms 607,738
Books, papers, etc., appliance for supporting, H. B. Watson 607,496
Bouquet holder, P. Donnelly 607,636
Box. See Match box.
Box filling and transferring apparatus, F. H. Richards 607,471
Box filling and transferring machine, F. H. Richards 607,470
Box filling machine, F. H. Richards 607,469, 607,472
Brace. See Post brace.
Brake beam, L. C. Burgess 607,421
Brake operating mechanism, R. F. Walls 607,558
Brake rod connecting end, J. H. Baker 607,590
Brazing machine, D. Crowther 607,505
Brick machine, J. Sharpe 607,488
Brickmachine mould, A. Berg 607,787
Bridle pulley, J. E. Campbell 607,788
Broom handle polishing machine, H. Breckenridge 607,730
Brush machine, J. W. Hocker 607,797
Buggy top side light, Quinsler & McNear 607,705
Bulletin board, Borden & Niederstadt 607,419
Buoy, electric, E. W. G, C. Hoffmann 607,745
Burner. See Gas burner. Oil burner.
Button, F. G. Neubert 607,452
Cabinet, spice, C. M. Stevenson 607,716
Cam grooves, machine for forming irregular, J. Reece 607,628
Camera, kinetographic, F. H. Morse 607,783
Camera, roll holding, W. V. Esmond 607,428
Can. See Milk can.
Car brake lever, railway, J. H. Baker 607,595
Car coupling, P. C. Brown 607,731
Car coupling, W. K. Nolaud 607,763
Car coupling, W. W. Rudy 607,769
Car door bracket, E. A. Hill 607,511
Car, dump, T. R. McKnight 607,521
Car fender, Lawton & Macaffree 607,514
Car fender, Lewis & Courtney 607,444
Car hand strap, street, W. R. Sands 607,592
Car, ore, G. E Truax 607,785
Car signal, W. O. Abbott 607,761
Carriage wrench, E. E. Hilliker 607,436
Case. See Spectacle or eyeglass case.
Caster, ball, B. Wesselmann 607,720
Chain covering, drive, G. E. Whitney 607,786
Chair and bed, combined, J. A. Bergman 607,538
Churn, G. R. Sexsmith 607,771
Clamp. See Board clamp.
Cleaner. See Dish cleaner.
Cloth cutting machine, C. H. Crowell 607,586
Clothes rack, W. S. Downer 607,683
Clutch, W. J. Thomas 607,531
Clutch, friction, E. Turney 607,557
Coated spindle or roller, F. W. Oliver 607,453
Cock replacer, stop, Thomas & Nusser 607,492
Coffee pot, J. O. Ingle 607,542
Coking oven, L. J. Hirt 607,437
Collapsible tube for plastic and liquid materials, J. S. Taylor 607,530
Comb. See Currycomb.
Combing machine, E. Delette 607,643
Controller, T. Von Zweigbergk 607,672
Cooker, steam, M. A. Swaim 607,776
Cooking and can filling machine, corn, F. W. Smith 607,806
Cooking apparatus for canneries, automatic, F. A. Dixon 607,656
Corset waist, G. A. Schneebeli 607,639
Cot or bedstead, folding, E. H. Rimmelin 607,607
Coupling. See Car coupling. Pipe coupling. Thill coupling.
Crate or box, egg, F. H. Champlin 607,423
Crate, shipping, J. A. Reeder 607,574
Crusher and pulverizer, A. & L. E. Bandeen 607,418
Crushing machine, T. L. & T. J. Sturtevant 607,575
Cultivator, E. E. Whipple 607,632
Cup. See Oil cup.
Cupola, T. P. Byram 607,501
Currycomb, J. Carden 607,733
Curtain holder, Parish & Rudolph 607,702
Cutter head, S. J. Shimer 607,709
Damper, ventilating, R. L. Underwood 607,669
Detergent composition and making same, J. W. Sallade 607,663
Dish cleaner, Leonard & Hescox 607,515
Ditching machine, J. W. Humphreys 607,688
Door fastener, sliding, J. R. Washburn 607,495
Drawing roller shield or deflector, T. Wolstenholme 607,724
Drop press, C. F. Wieland 607,579
Drum, heating, C. M. Richardson 607,706
Dumping receptacle, E. J. Little 607,693
Ejector, sanitary, L. O. Lawrason 607,753
Electric circuit regulating switch, Davis & Wright 607,617
Electric conductor bond, S. W. Huff 607,746
Electric line switch, A. B. Du Pont 607,638
Electric machine, dynamo, A. G. Eigner 607,737
Electric machine, dynamo, W. B. Sayers 607,593
Electric regulator, J. A. Powers 607,551
Electrical apparatus, circuit arrangement for, J. Miesler 607,760
Electrical distribution system, B. G. Lamme 607,621
Electrical resistance, H. S. Chase 607,540
Electrolytic bath, P. Marino 607,646
Electromagnetic motor, A. B. McMillan 607,451
Enameled ware, manufacture of, W. F. Niedringhaus 607,625
Enameling steel, F. G. Niedringhaus 607,624
Engine. See Gas engine. Rotary engine. Steam engine. Winding and hauling engine.
Exhibitor for series pictures, F. H. Morse 607,761
Fare register, Ohmer & Tyler (reissue) 11,681
Fastening device, C. S. Morris 607,447
Faucet, self closing, Burger & Williams 607,732
Faucet, self closing, J. P. Farley 607,429
Feed bag support, T. Mulcahy 607,449
Feeder, automatic steam boiler, Downs & Johnston 607,509
Fence, F. W. Gasper 607,431
Fence, flood, S. F. Miller 607,568
Ferrocyanids, process of and apparatus for making, P. Danckwardt 607,507
Filter, H. G. McLean 607,570
Filter, air pressure, Pierce & Thayer 607,523
Filter and cooler, combined, Armstrong & Heywood 607,673
Filter and cooler, combined, E. M. Knight 607,513
Fire escape, Swyny & McDonald 607,556
Fire extinguisher, G. W. Almstead 607,562
Fire extinguisher, J. M. Miller 607,591
Flood gate, J. W. Anderson 607,534
Fly wheel, K. Chickering 607,615
Fuel, composition of matter for and process of manufacturing artificial, R. F. Strong 607,529
Furnace. See Boiler furnace. Garbage furnace. Hot air furnace. Ore roasting furnace. Portable furnace.
Furniture, E. R. Esmond 607,657
Galvanic cell, A. Heil 607,540
Game, W. Zolper 607,540
Garbage furnace, I. D. Smead 607,553
Garbage receptacle, A. Reed 607,524
Gas burner, W. Ludlow 607,755
Gas burner, heat generating, E. Herz 607,541
Gas engine, M. F. Bates 607,536
Gas engine, C. Jacobson 607,566
Gas engine, L. J. Wing 607,580
Gas engine, hydrocarbon, W. O. Worth 607,613
Gas generator, acetylene, J. A. Olson 607,701
Gas generator, acetylene, F. H. Smith 607,650
Gases in operating engines, etc., utilizing liquefiable, E. V. Roure 607,662
Gate. See Flood gate.
Gate, P. Coupal 607,682
Gate, W. A. Whitcomb 607,721
Gear tooth cutting machine, J. Reece 607,629
Gears, machine for cutting teeth on worm toothed, J. Reece 607,627
Gearing, transmission, F. Schneider 607,640

(Continued on page 78)