retreating, followed by its active enemy which merely desired to use it as depository for its eggs.

In almost every town in California the singular industry described is carried on, and its effect in Pasadena has been to materially diminish the supply of tarantulas, the places where they were once common knowing them no more.

The Recent Eruptive Period of Vesuvius—Simultaneous Formation of Two Nitrated Salts in the Crater.*

The eruptive period of Vesuvius commenced on the 3d of July, 1895. It continued with uniform phenomena until September 3, 1899, when the lava ceased to flow by the lateral fissure. From that time the crater, which was then 656 feet deep, began to fill up again. On April 24, 1900, it was only 260 feet deep, and contained a magma of bases rich in aeriform products. A period of a month of extreme activity ensued. There was no emission of lava, but the explosions within the crater were intensely violent, especially from May 4 to May 14, the maximum occurring on the 9th of May. They could be distinctly heard throughout all Campania Felicia. The crater was enlarged by 13 or 16 feet in diameter. At the end it measured 537 feet from southwest to northeast and 590 feet from east to west. The circumference was 1,771 feet. The flames were abundant, due to the emission of the vapors of sulphur and hydrogen sulphide. The greatest height attained by the bombs and scoriæ was 1,761 feet from the bottom of the crater.

On the 9th of May a bowlder measuring about twelve cubic meters was thrown out, which weighed approximately thirty tons. This was the greatest ejected, and took about 17 seconds in passing over the whole trajectory, falling on the ground with a velocity of about 262 feet a second. The vis viva of the vapors which had propelled it was estimated at 607,995 horse power.

The quantity of solid matter thrown from the crater during the explosive period (April and May) was about half a million of cubic meters. These emissions increased the height of Vesuvius by 33 feet. The highest point previously was 4,221 feet above the level of the sea; now it is 4,273 feet.

I remained on the mountain for three consecutive days, the 11th, 12th and 13th of May. On the 13th, in the morning, there was a copious emission of vapors; toward noon the explosions were resumed, and soon reached a point of extreme intensity. From my position near the border of the crater I was observing the action closely, when I was startled by a formidable explosion, which rained about me a shower of myriads of stones and incandescent scoriæ. I escaped as by miracle. Among the most important phenomena was the complete envelopment of the crater with flames and the multitude of bombs bursting violently in their course through the air. It was a marvelous spectacle. Around me were lapilli, covered with sal ammoniac and scoriæ, with a lustrous patina of metallic appearance, formed of ferric nitrite.

As is known, M. O. Silvestri, stimulated by the experiments of Henri Sainte-Claire Deville, undertook observations on the lavas of Etna, for the purpose of investigating volcanic theories, especially relating to the influence of chemical dissociations, and that he reached very satisfactory conclusions with respect to the genesis of certain nitrated compounds formed within volcanoes.

Thus, by passing a current of chlorhydric acid over reheated iron-bearing silicates, Silvestri obtained water, free silica and ferric chlorides. On heating these chlorides in a current of ammonia there were disengaged besides hydrogen and ammonium chloride, chlorhydric acid and ferric nitrite. Finally, in causing the reaction together, on the reheated lava, of chlorhydric acid and ammonia (or ammonium chloride), pure hydrogen, chlorhydric acid and ferric nitrite were obtained with separation of sal ammoniac (ammonium chloride).

Without ignoring the great difference between the operations of nature and those of our laboratories, I have no hesitation, in view of my observation of a true isochronism in the production of ammonium chloride and of ferric nitrite in the crater of Vesuvius, in holding, according to the experimental results I have cited, that there exists an intimate genetic connection between these two nitrated compounds of volcanic origin.

* R. V. Matteucci in a paper presented at the Académié des Sciences.

The Current Supplement.

The current SUPPLEMENT, No. 1317, contains many articles of interest along many lines. The first page is occupied by an engraving showing the removal of Moreau-Vauthier's statue "La Parisienne" from the monumental gateway of the late Paris Exposition. "The Foothills of Colorado" is by H. A. Crafts. "The Canals of Mars" is by Miss M. A. Orr. "Information Concerning the Angora Goat" is accompanied by several illustrations. "Snow Upon Railways" describes the systems in vogue on the Trans-Siberian Railway. "American Engineering Progress" is continued.

Contents.

(Illustrated articles are marked with an asterisk.)

RECENTLY PATENTED INVENTIONS.

Electrical Apparatus.

COIN-CONTROLLED TELEPHONE.—JULIO E. CORDOVEZ, Panama, Colombia. The characteristic features of this telephone apparatus are a support for the receiver, which support automatically changes its position as the receiver rests thereon or not; a movable coin-support; a circuit designed to be closed by the movement of the coin-support; and a movable coin-retainer operatively connected with the receiver-support and arranged to keep the coin upon the coin-support and to release the coin when the receiver is put back on its support. Thus the introduction of a coin of a certain value is necessary in order to close the speaking-circuit.

ELECTRICAL DEVICE FOR ALTERNATING CURRENTS.—ALBERT NODON, Paris, France. The inventor has discovered that an electrolyte formed of a solution of phosphoric acid to which ammonia may be added and in which are plunged two electrodes, the one of graphite or plumbago, and the other of an alloy of zinc and aluminium, has the property of arresting one of the phases of an alternating current but of permitting the other phase to pass freely. In order continuously to convert the two alternate phases it is necessary merely to arrange two similar couples in parallel, having their electrodes disposed in reverse order. By experiment, it has been found that two similar couples thus arranged can convert alternating currents having a mean electromotive force of 200 volts.

TELEPHONE-RECEIVER HOLDER.—GEORGE S. MEYER, Newburg, N. Y. It has been the object of the inventor to provide a simple device by means of which the receiver will be supported in listening position near the transmitter, so that the hands may be left free to take notes. The arrangement consists of a bar in engagement with and projecting from the transmitter-arm in such a position that the receiver is in proper position for use.

Mechanical Devices.

BALING-PRESS.—ALBERT L. TREESE, Jennings, Oklahoma Territory. With this improvement, the bale formed in an ordinary cotton-press receives a final compression. Mr. Treese prefers to employ his invention as an attachment to a cotton-press. The complete apparatus comprises rotatable baling-chambers which are alternately filled with cotton. A plunger operates in conjunction with one of the chambers at a time to compress the cotton against a platen. A removable follower is designed to be carried by the plunger; and in conjunction with the removable follower a frame is employed, carrying a number of platens to compress the cotton. At one side of the platen a hydraulic device is arranged which can be connected with the removable follower to compress the material finally.

DUMPING-WAGON.—THOMAS WRIGHT, Jersey City, N. J. This invention relates to a class of dumping-wagons which discharge the load by tilting the wagon-body rearwardly. The object of the invention is to provide a dumping-wagon of novel construction which is better adapted for the discharge of the load and the replacement of the tilted body than wagons of its class as heretofore constructed, and which will also permit the ready removal of the wagon-body for the reception of a load and for its subsequent replacement on the running-gear of the wagon.

APPARATUS FOR PRODUCING MOLDS FOR CAST-IRON PIPES.—ERNST FORSTER, 43 Sagoreduiji-Prospect, St. Petersburg, Russia. This invention is designed to produce at one operation any number of molds for tubes, pipes, and other articles of regular form and considerable length. The castings made from such molds are perfectly seamless; the molds are not divided either longitudinally or transversely. The time required for making a mold for sixteen pipes does not exceed twenty minutes, it is claimed. The efficiency of the apparatus is, therefore, evident. Further merits are the great exactness and accuracy, and the omission of mold boxes inclosing the molds, thus allowing the molds to dry properly.

MERRY-GO-ROUND.—WILLIAM F. MANGELS, Coney Island, Brooklyn, New York city. The merry-go-round is of that type having a crank-shaft for imparting movement to the seats. The object of the inventor is to provide improvements in the construction of such merry-go-rounds whereby the driving-gear for the crank-shaft is completely relieved of the weight of the revoluble frame. Consequently, undue strain is avoided and the frame is supported independently of the gearing to insure an easy running of the machine with comparatively little power.

TWINE-HOLDER AND CUTTER.—RAYMOND D. WEAKLEY, St. Louis, Mo. The device holds the twine in a suitable carrier. Cutting-blades are brought into action at any time after the twine-carrier has been brought to a position within a casing. The movement of the twine-carrier within the casing is accomplished by the operation of a movable knife. When the twine has been cut, the movable knife is relieved from pressure, and the twine-carrier is automatically carried to its normal position.

MACHINE FOR SETTING CALKS IN BOOTS AND SHOES.—CHARLES R. JOHNSTON, Eureka, Cal. The invention provides a simply-constructed durable machine for calking boots and shoes. The improvements made by the inventor have perfected the construction and increased the efficiency of operation.

CASH-DRAWER.—JULIUS OHMEN, Manhattan, New York city. The cash-drawer comprises a money-receptacle having two locking devices, both controlled by the drawer-knob. One locking device serves to lock the money-receptacle to the drawer, and the other locking device serves to lock the receptacle to a stationary part. An alarm is actuated by the drawer. Mechanism is controlled by the last-mentioned locking device to throw the alarm in or out of action according to the position of the locking devices. The alarm is given when any person not familiar with the construction of the drawer seeks to steal the money.

LATHE-DOG.—PHILIP SCHWICKART, Brooklyn, New York city. The lathe-dog comprises a body having V-shaped members. On one of the members is an extension formed with a number of recesses located one above the other. A clamping-bar has its fulcrum in one of the recesses. On the free end of the clamping-bar an adjustable bolt is pivoted, engaging a flange on the other body member. Pivoted on the clamping-bar between the fulcrum and bolt is a clamping-block, having concave sides located at different distances from the pivot of the block. Eight different adjustments can be made, thus adapting the lathe-dog for objects of different diameters.

CURRENT-WHEEL.—EVER PETERSON, Spokane, Wash. The water-wheel comprises a supporting-shaft to which a shell is attached. Spokes pass through the wall of the shell and are secured at their ends to the ends of the shell. Blades are attached to the spokes. Forward of the shell is a tapered casing. As the current strikes the taper it is divided and thrown out to strike the several blades simultaneously; thus the eddies of the stream will be overcome and greater power obtained.

Vehicles and Their Accessories.

BICYCLE-SUPPORT.—EBEN MILLER, Fredericton, New Brunswick, Canada. The bicycle-support comprises essentially a supporting frame on which a rack-bar is movable. Gear-wheels engage the rack-bar. On the gear-wheels supporting-legs are carried, by the movement of which a wheel-engaging device is operated. The supporting-device is simple in its construction and can be very easily adjusted.

WHEEL.—OTTO TEIGEN, Lowry, Minn. The purpose of this invention is to provide a vehicle-wheel which will yieldingly support its load. To this end the invention embodies a wheel with its rim and hub connected by longitudinally-extensible and contractible spokes hinged in place and provided with springs which have their ends respectively connected with the hub and rim.

SPEED-GEAR.—SEDGWICK M. WADE, Andover, Ohio. This invention is a means for transmitting motion and for varying the speed and direction of motor-vehicles. The gearing comprises two worms driven in the same direction. Between the worms is a double-bevel worm-wheel movable to engage either worm. A spur worm-wheel is movable to engage one of the worm-wheels, and a crown worm-wheel is movable to engage one of the worms.

Railway Appliances.

TIE.—HIRAM STOUT, Kingman, Kans. The railway-tie comprises a pair of hollow stringer-blocks made of clay, to which blocks a tie-bar is bolted. Wooden chairs receive the rails and are interposed between the blocks and rails and have recesses at their under sides to receive the ends of the tie-bar. The chairs form cushions for taking up the vibration and also prevent wear on the clay blocks.

CONVERTIBLE FREIGHT-CAR.—OSCAR B. CRITCHLOW, Leadville, Colo. The car is so constructed that it can be conveniently converted from an ordinary flat-bottom box-car for carrying freight to a hopper-bottom box-car for carrying grain. The floor for the car-body is made in sections arranged to extend either in a horizontal position on the floor-supporting timbers, or to hang with their outer ends on the supports and extend from the car-body inward and downward to the floor-members at or near the middle of the car. A conveyer-casing has a conveyer-screw at the middle of the car into which the floor-sections discharge. Slides for closing the casing are controlled from the outside of the car.

LOADING DEVICE FOR RAILWAY-CARS.—WILLIAM P. PORTER, East Jordan, Mich. By means of this apparatus railway-cars can be loaded without being side-tracked. The machine employed comprises a platform on which a motor is carried. A transverse shaft is geared with the motor. With the transverse shaft longitudinal shafts at the sides of the platform are respectively geared. Keepers are carried at the sides of the platform. In the keepers, uprights are slidably mounted, which uprights carry racks engaged by pinions on the longitudinal shafts.

Miscellaneous Inventions.

SUPPORT FOR BUCKETS.—JOHN LOWE, Arlington, Kans. The bucket is to be used in milking, and for that purpose is provided with supporting devices which can be attached to the knees of the milker, so as to leave both hands free. When the bucket is not in use the supporting devices can be carried close to the side of the bucket.

ARTIFICIAL TOOTH.—WILLIAM K. SLATER, East Tennessee National Bank Building, Knoxville, Tenn. The invention comprehends the formation of artificial teeth in which keepers are baked projecting above the gum ends of the teeth in the direction of the longitudinal axes of the teeth, and are arranged by means of loops or bent ends for secure attachment to a retaining wire. These keepers are located in those portions of the teeth where there is the greatest body of porcelain. The teeth depend almost entirely upon the wire for their attachment to the plate.

WATER-DISTILLING APPARATUS.—DICKINSON L. ROSE, Mankato, Minn. The apparatus is specially adapted for domestic use. The construction comprises a vertical boiler which is open at the top. A condenser is located above the boiler, and a water-reservoir exterior to the boiler. The water-reservoir has an upward extension composed of double walls, separated by a space for receiving the water of condensation, both walls surrounding the boiler, and the outer one being attached to the condenser and forming the outer side of the condensing space above the boiler. The apparatus removes volatile and mineral matter, and effects rapid condensation and aeration.

NUT-LOCK.—SAMUEL S. JAMISON, Saltsburg, Pa. When once applied, the bolt and nut will be locked together without the possibility of being loosened accidentally. To secure this end the inventor employs a nut having a tapered hole provided with a series of independent angular projections. The angular edges are sunk in the bolt end and allow the metal of the bolt to spread into the angular recesses between the angular projections.

PULP-STRAINER.—JAMES W. PACKER, Glens Falls, N. Y. The pulp-strainer for paper-making comprises a fixed support, a diaphragm to which a plunger is secured, and a cam for operating the plunger. An arm

or bar projects from the support and is connected with the plunger. A spring exerts pressure on the arm or bar. The plunger properly actuates its part of the diaphragm to draw off the fibers through the openings in a screen into a suction-box, the material flowing by its gravity into a receiving-box and over a gate. The provision of a single outlet for two or more suction chambers having a number of screen-plates brings the pulp into a separate compartment in the receiving-box, so that the operator has full control of the pulp, regardless of the number of suction-chambers in the machine.

ADJUSTABLE GUN-STOCK. — Joseph N. Zoller, St. Matthews, Ky. This attachment for gun-stocks enables one gun to be used for various purposes. An adjusting head is pivoted in the stock and attached to the grip. The head is provided with peripheral teeth, between the spaces of which a bolt held to slide in the stock can be projected.

WASH-TUB ATTACHMENT. — Otto Schweitzer, Paterson, N. J. The inventor has provided a wash-tub with a movable partition enabling the wash-tub to be used as a bathtub. On the upper edge of the partition, levers are mounted. A plate is pivoted on one lever and has sliding connections with the other lever. A screw is carried on the partitions and works with the inner ends of the levers.

STOOL.—John M. Burdum, Batavia, Ill. This stool is to be used in boot and shoe stores and comprises a seat for the salesman and a rest for the foot of the person on whom a shoe is to be fitted.

CRUCIBLE.—Porter W. Shimer, Easton, Pa. The crucible is to be used for fusing or highly heating metal or other material in an atmosphere of any gas. The crucible is provided with a hollow stopper seated on a rubber gasket and having means for cooling the stopper and crucible and circulating air.

WEATHER-STRIP. — William L. Smith, Homer E. Ashcraft and William O. Jamison, Seymour, Iowa. This weather-strip can be attached to any door. When the door is closed a member of the weather-strip is firmly in engagement with a threshold-strip. As the door is opened, a protective member of the weather-strip is automatically carried up to engagement with the body of the weather-strip; as the door is closed the protective member of the weather-strip is automatically brought into engagement with the threshold-strip and lodged in protective position.

GAME.—John G. Floyd, Mastic, N. Y. The apparatus employed in this game comprises a course, defined at its ends by goals. In this course a ball is to be placed. Players arranged in opposing teams are to have for their object to protect their respective goals and to prevent their opponents' forcing a ball past the goal. The apparatus can be quickly set up in a room or on a lawn.

SPACE-BAR FOR LINOTYPE MACHINES. —David A. Hensley, Vicksburg, Miss. The improved space-bar consists essentially of two parts or wedges, the upper one of which may be termed a stationary member inasmuch as it is held against upward movement in the ordinary manner, while the lower part may be termed the movable member, as it is driven by the usual or any improved mechanism for the purpose of expanding the space-bar. The operation of the improved space-bar is the same as that of ordinary space-bars. Superior results are obtained, however, owing particularly to the fact that a shield is employed of substantially the same outline as the movable member, which shield is of uniform thickness instead of being wedge-shaped as in other constructions. It is impossible for either the movable wedge or the shield to spring away from the stationary wedge or to move transversely or edgewise.

CALENDAR. — Arthur A. Sparks, San Francisco, Cal. The calendar relates to that class in which a device is provided for indicating at a glance the day of the week and the month. Each one of the date-spaces has a holder or fastening device. An indicator can be secured to any of the fastening devices. To prevent accidental loss of the indicator, an elastic string or cord is employed.

STOVE.—Samuel W. Jackson, Selma, Cal. From the top plate of the stove a combustion-chamber, and an inner or suplementary combustion chamber, are hung. A stand-pipe extends up from the bottom wall of the outer combustion chamber into the inner combustion chamber. Fuel is economized; and the draft is controlled in a simple, novel manner.

Designs.

GARMENT-HOOK. — William H. Goss, Stonington, Me. The hook comprises two upwardly-curved members and an upwardly and downwardly curved member.

DISPLAY SAMPLE-TUBE. — Charles F. Price, Richmond Hill, Queens, N. Y. The leading feature of the design consists of a glass tube closed at one end, and decorated at the other end with a cap which extends for some distance along the body.

PLAITING-BLADE.—David Kisch, Manhattan, N. Y. The blade comprises a number of transversely disposed parallel tongues beveled on one face and convexed.

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.

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Motor Vehicles, Duryea Power Co., Reading, Penn.

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WATER WHEELS. Alcott & Co., Mt. Holly, N. J.

Inquiry No. 235.—For can manufacturers.

Yankee Notions. Waterbury Button Co., Waterb'y, Ct.

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Machine chain of all kinds. A. H. Bliss & Co. North Attleboro, Mass.

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Inquiry No. 249.—For machinery for welding ends of old flues.

Inquiry No. 250.—For improved brush machinery.

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Inquiry No. 260.—For manufacturer of the "Holroyd" killer.

Inquiry No. 261.—For blank aluminium business cards.

Inquiry No. 262.—For German silver wire.

Inquiry No. 263.—For manufacturers of dry batteries.

Inquiry No. 264.—For manufacturers of tinfoil.

Inquiry No. 265.—For electric supply houses.

Inquiry No. 266.—For manufacturers of machinery for cutting and shaping pumice stone in regular squares and ovals.

Inquiry No. 267.—For the manufacturer of a scale patented by Bachelor & Waterman, of Philadelphia; the scale working without weights.

Inquiry No. 268.—For manufacturers of washing machines, dish washers, boot-polishing machines, etc.

Inquiry No. 269.—For manufacturers of small billiard and pool tables with accessories for same, such as balls, cushions, cues, etc.

Inquiry No. 270.—For manufacturers of gas fixtures, meters and supplies.

Inquiry No. 271.—For manufacturers of double crank axle forgings from 1½ to 3 inches throw or 3 to 6 inches stroke.

Inquiry No. 272.—For manufacturers of electric welding machinery.

Inquiry No. 273.—For manufacturers of non-corrosive metal in sheets of No. 14 and No. 16 gages, capable of being bent at right angles and stiff as cold rolled steel; price not to exceed half the cost of brass or copper.

Inquiry No. 274.—For manufacturers of small, rotary engines of moderate horse power.

Inquiry No. 275.—For manufacturers of walking-cane ferrules.

Inquiry No. 276.—For parties willing to make a domestic garbage burner.

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Inquiry No. 278.—For manufacturers of small spring motors for running fans.

Inquiry No. 279.—For manufacturers of compressed air riveting tools for bridge work.

Inquiry No. 280.—For manufacturer of boiler water-tubes with a circulating pipe inside, of copper and brass for model boilers and steel for larger ones.

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Inquiry No. 291.—For manufacturers of light perforating machines, capable of perforating thin sheet copper and aluminium with about 100 holes to the square inch.

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Inquiry No. 294.—For manufacturers or dealers in small locomotives.

Inquiry No. 295.—For manufacturers of felt cloth used for absorbing oil in machinery, ink in stamp pads, etc.

Inquiry No. 296.—For manufacturers of a gas water-heating apparatus to be used in a gymnasium bathroom.

Inquiry No. 297.—For parties to make a 3-piece metal novelty.

Inquiry No. 298.—For manufacturers of creamery supplies, condensing and sterilizing apparatus.

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.

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Scientific American Supplements referred to may be had at the office. Price 10 cents each.

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Minerals sent for examination should be distinctly marked or labeled.

(8143) J. W. B. writes: 1. I desire to make a helix to magnetize a ⅞-inch bar of octagon steel. How long and how many turns of wire, and of what size wire shall I make it? I get current from a dynamo. A. The statement that the current is from a dynamo gives no clew to its voltage, which must be known before a coil can be constructed to magnetize a magnet. However, proceed as follows: Wind a coil of No. 12 cotton-covered wire of a size that the bar will slip easily through the coil. Any insulated wire will do as well, if magnet wire is not at hand. Make perhaps 100 turns, number not important. Connect this in series with a lamp. Turn on the current, and pass the bar back and forth through the coil. Continue this till by experiment the bar is not made any stronger by further treatment. If the lamp is an arc lamp, the work will soon be done; if it is an incandescent lamp, longer will be required. The flow of the amperes around the bar magnetizes it. The process is very simple. 2. Can I make good bar and U magnets, using steel ends and wrought-iron center? A. Yes; the iron neither helps nor hinders the magnetism.

NEW BOOKS, ETC.

The Scientific American Cyclopedia of Recipes, Notes and Queries. Edited by Albert A. Hopkins. Sixteenth Revised Edition. New York: Munn & Company. 1901. Large 8vo. Pp. 790. Cloth, $5; sheep, $6. Appendix sold separately for $1.

The first edition of this book appeared in 1891, and within the past decade it has gone through sixteen editions (including the present)—a fact which, alone, is sufficient to attest the great value of the work as a book of reference, solving the difficulties of all classes, from the chemist and technologist, the manufacturer and artisan, down to the housewife and the cook in the kitchen. It is by far the most compendious work of the sort ever attempted, comprising upward of 15,000 recipes and formulæ, and usually embracing minute directions for carrying out the processes. The titles are arranged alphabetically, thus facilitating consultation. The book is well and clearly printed on good paper and is strongly and substantially bound.—National Druggist.

INDEX OF INVENTIONS

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

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Air brake, W. S. Palmer 670,245
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Anchor, pivoted, W. L. Byers 670,368
Anti-rattler and shaft supporter, combined, J. A. Minturn 670,105
Applicator, H. H. Groth 670,015
Apron, self-feeding, T. V. Payne 670,109
Automobile running gear, W. Van Wagoner 670,121
Automobile starting mechanism, H. Wilcke. 670,189
Azimuth instrument, J. S. Negus 670,242
Bag. See Self-closing bag.
Bag, J. J. Lawler 670,360
Bailing machine, Kirshman & Medlin 670,406
Baling press, W. H. Gray 670,175
Baling press knotter, T. Kirshman 670,407
Baling press knotter, L. M. Medlin 670,410
Banjo harp attachment, A. A. Farland 670,049
Bank or toy money box, savings, Gilmore & Haupt 670,226
Barrel closure, C. H. Driver 670,341
Barrel head, J. Martin 670,158
Bath. See Heat bath.
Bearing, ball, J. W. Dickinson, Jr 670,313
Bed couch, G. E. Bedell 670,305
Bedstead, sofa, B. F. Fortiner 670,073
Beet flume stone catcher, E. F. Dyer 670,015
Belt guide, shiftable, J. Warrington 670,124
Bicycle, motor, E. Y. White 670,010
Bicycle support, H. Burnet 670,367
Bicycle support, folding, J. F. Williams 670,125
Bits to driving bits, device for attaching overcheck, L. K. Raymond 670,248
Boat detaching apparatus, F. S. Pett 670,293
Book, manifolding, E. B. Williams 670,217
Book, manifolding sales, Cosby & Wirth 670,147
Boring machine, G. C. McClellan 670,003
Bottle, C. F. True 670,008
Bottle rotating machine, C. A. Greiner 670,228
Bottle, non-refillable, F. C. J. Besch, Sr 670,220
Bottle, non-refillable, R. McCord 670,241
Bottle stopper, H. Finley 670,356
Bottles, means for preventing refilling of, Bizouarne & Kugler 670,267
Bottling machine, J. H. Champ 670,395
Brick drying oven, G. E. Link 669,994
Broiling or toasting device, B. J. Karrer 670,025
Brush, hat, J. L. G. Dykes 670,016
Brush holder, W. E. Van Ame 670,069
Buckle machine, T. P. Hartshorn 670,230
Building material, producing, E. C. Brice. 669,977
Bunsen burner, G. Tresenreuter 670,253
Butter, collar, A. Weber 670,045
Button, fabric covered, F. W. Ludington 669,996
Calculating machine returning device, W. Heinitz 670,075
Camera, folding panoramic, D. H. Houston 670,154
Camera, folding panoramic photographic, D. H. Houston 670,233
Camera, magazine, J. Adler 669,971
Camp fire utensil holder, C. E. Bond 670,144
Can bodies, machine for forming sheet metal, M. Jensen 670,390
Can filling machine, E. Manula 670,182
Can opening keys, machine for manufacturing, Zimmerman & Wirth 670,168
Cane unloading machine, W. C. Gregg 670,176
Car brake, freight operating, W. H. Sauvage 670,377
Car coupling, F. R. Moore et al 670,055
Car couplings, spring protecting device for railway, W. Thornburgh 670,256
Car door guiding bracket, H. C. Williamson et al 670,143
Car, dumping, C. Barrett 670,171
Car for stock or other freight, H. A. Turner 670,400
Car, ore, G. E. Woodbury 670,092
Car roof, C. D. Pettis 670,294
Car sand box, A. W. Ham 670,103
Car seat, H. Witte 670,190
Cars, contact shoe lifting apparatus for electric, J. S. Morison 670,375
Carrier track, R. Miller 670,207
Case. See Show case.
Casein products, producing, J. A. Just 670,372
Cash register, E. W. Applegate 670,191
Cement for ships' bottoms, A. Johannsen 669,993
Chain, conveyer, E. T. Bucknam 669,979
Chain, drive, C. W. Levalley 670,285
Chain grate furnace, F. R. Tibbitts 670,257
Change making machine, H. H. Fox 670,173
Chip breaker, W. L. Crouch 670,270
Chuck, lathe, A. Swasey 670,213
Chuck, scroll, L. E. Whiton 670,263
Churn, R. Roberts 670,298
Chute, M. E. Mogg 670,054
Cigar lighter, electric, A. B. Kittson 670,026
Cigar retainer, finger, E. R. Jump 670,023
Cigarette machine, E. Georgii 670,133
Cigarette machine, H. E. Grabau 670,318
Cigarette making machine, E. B. Mann 669,998
Clay press cutting device, W. Moebius 670,289
Clothes drier, O. A. Gerr 670,102
Clothes line clothes retainer, M. S. Cross 670,397
Clothes pin, T. G. Bering 670,306
Clutch, P. I. Merkoolyeff 670,205
Clutch, E. P. Schmitt 670,036
Clutch, friction, R. Willetts 670,264
Coffee pot, automatic fountain, J. F. Normile 670,004
Collar stuffing machine, horse, O. Jones 670,051
Colter clamp, E. M. Heylman 670,231
Comb finishing machine, Meihsner & Aumann 670,030, 670,031
Commutator brush holder, W. D. Pomeroy 670,059
Concrete mixer, H. Campbell 670,222
Conveyer, A. D. Jansen 670,155
Coop, poultry, T. P. Mohr 670,325
Cork tapering machine, H. G. Shannon 670,253
Cream separator, Peckham & Silvius 670,033
Crucible shaker, J. Illingworth 670,279
Culinary article, H. N. Van Tuyl 670,120
Cultivator, D. E. Barton 670,093
Cup. See Egg cup.
Curb and gutter, combined, S. B. Morss 670,001
Curry comb, V. Slater, Sr 670,254
Curtain and window blind support, Alter & Anchors 670,170
Curtain fixture, W. T. & S. G. Miller 670,208
Curtain rod threader, C. Freund 670,342
Cut off, R. Ryan 670,250
Cutter head, S. J. Shiner 670,331
Delivering device, adjustable material, J. B. Dobson 670,014
Developing tray, A. B. Sheppard 670,165
Dipping machine, J. A. Jena 670,344

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