

## RECENTLY PATENTED INVENTIONS.

## Railway Appliances.

**CAR BRAKE.**—William F. Gibbs, Auburn, N. Y. This invention provides a simple form of brake mechanism especially designed for use on street cars, to afford the necessary power and occupy but little space. The brake shoes are suspended adjacent to the wheels, and pairs of levers on opposite sides have movable and connected fulcrums, adjustable rods connecting the lower ends of the levers with the brake shoes. While a crank shaft journaled beneath the car has disks at each end from which arms extend oppositely to the free ends of the levers. The mechanism is readily adjusted so that the shoes will always bear evenly upon both the front and rear wheels.

**CAR WINDOW GUARD.**—Edward B. Loomis, Memphis, Tenn. This is a dust and cinder protector of such simple construction that it can be carried in the pocket or valise of every passenger, and quickly and easily set up in position to serve its purpose as desired. It consists of a sectional folding stick having prongs at its ends, buttons on its face, and a hook and pin at its joint, in combination with a sectional folding deflector wing having keyhole-shaped apertures in each section and eyelets for protecting the apertures. The stick folds like a measuring rule and the deflector wing like a book.

## Electrical.

**COMPOSITE CONDUCTOR.**—Charles A. Mezger, Brooklyn, N. Y. This conductor is composed of a series of conductor mediums that are tubular, a solid cylindrical center conductor, with annular insulations interposed between adjacent conductors that are graded for length at the ends, the longest being central and all the ends externally threaded to engage with a composite coupling. The invention provides novel means for the branching of lateral conductors from main lines, producing angular variations from straight lines of conductor mediums, or coupling together two or more composite conductor sections and effectually insulating each conductor from an adjacent conductor.

**LAMP OR CONDUCTOR SUPPORT.**—Charles Bell, Stroudsburg, Pa. This device consists of an eyebolt or clip provided with a threaded shank and an insulator formed of two parts, having rectangular notches in the lower part for receiving the inwardly bent ends of the hanger, the upper portion having recesses which will permit of the removal of the hanger from the insulating support after the lower half has been let down by unscrewing the supporting nut. The clip is formed of two similar oppositely arranged arms connected by the pivot, the lower ends of the arms bent into a circular curve and cut away, so that they overlap each other, forming a complete eye when they are closed.

**STOP MOTION FOR KNITTING MACHINES.**—Albin Beyer, Brooklyn, N. Y. An electric circuit closer is, by this invention, attached to a revolving spool carrier and controls an electro-magnet, while a spring-pressed clutch pulley and brake mechanism are arranged on the main driving shaft of the knitting machine and controlled from the electro-magnets, the devices being arranged in such a manner that when the clutch is opened the brake is applied, and vice versa. There is also a thread compensating device arranged on a revoluble spool carrier and actuated shortly after the circuit closer has closed the circuit.

## Mechanical.

**LATH BOLTER.**—John H. Peterson, Portland, Oregon. This is a machine of simple and durable construction, designed to be very effective in operation. It has live top rolls and two live bottom feed rolls in front of the saws, and one live spreader roll behind the saws, whereby the laths are prevented from throwing back cants after they have passed through the saws. By employing novel eccentric boxes lead can be given to the top feed roll, so as to hold square-edged lumber up hard against the guide.

**FLUE STOPPER.**—Joseph A. Brown, Riverhead, N. Y. This device consists of a body section to which bow springs are pivoted at right angles to each other, the springs being foldable down upon the body when not in use and carried upward to cross one another when required for service. When the device is forced into a flue opening the springs bind against its sides and effectually hold the body in position as a covering for the opening.

**FLUE CLEANER.**—Walter Pharr, Barnum, Texas. A hollow tubular stock open at both ends is mounted on a handle rod which is longitudinally movable and protrudes at one end, while its opposite end has spring arms flared at their outer ends, but compressed by the walls of the stock when drawn in. By holding the stock and pushing the handle rod forward the spring arms adjust and the cleaner head expands to fit the flue, being held in such position by a latch, but when the handle rod is drawn backward into the stock the spring arms are compressed. The head consists of segmental serrated sections and scraper sections held on the spring arms.

## Mining, Etc.

**ORE CONCENTRATOR.**—H. F. Hicks, Ashland, Oregon. An open ended cylinder is, by this invention, provided with a series of internal flanges, which are highest in the middle of the cylinder and diminish in height toward the end, and a feed flume is arranged to deliver centrally within the cylinder. The construction is simple and economical, and this form of concentrator is especially adapted for separating the refractory metallic particles and sulphurets from the tailings of gold or silver extracting mills.

## Agricultural.

**GUIDE MARKER FOR CORN PLANTERS.**—Herrman A. Behrns, Orchard, Iowa. This is a very simple and inexpensive device, which may be applied

to any corn planter, and which may be quickly and conveniently shifted to mark either at the right or left of the implement, and it may also be further shifted so it will not touch the ground at either side, thus permitting the planter to be readily turned when desired.

## Miscellaneous.

**HOT AIR FURNACE.**—John W. Frizzell, Brainerd, Minn. In the upper end of the casing is a hot air chamber, and in its lower end a cold air chamber, vertical pipes connecting the two chambers, between which is the fire pot, having a closed ash pit, there being a downward draught around the pipes and sides of the fire pot. The construction is such that the energy of the fuel is utilized to its fullest extent for heating the air, the draught being conveniently regulated to insure proper combustion, and there being also a damper to control the outlet for the smoke and gases.

**STAINED WINDOW GLASS.**—Arthur R. Carter and Henry C. Hughes, London, England. The improvements provided by this invention in the making of stained glass panels dispense with the usual leaden frames in which the pieces of glass have heretofore been fixed, and comprise the juxtaposing and welding together by heat of the contiguous edges of variously colored pieces of glass between thin sheets of platinum within a marginal frame, painting on the mosaic with vitrifiable enamel colors and again firing to fix the colors, then applying upon and welding by heat to the artistically treated surface a covering sheet of white glass. The welding of the component parts and of the mosaic to the covering is performed in an ordinary muffle.

**DOOR HANGER.**—August G. Dahmer, Alameda, Cal. This is an improvement in sliding door hangers, whereby the door may be readily raised or lowered as desired, a single track only being necessary for the hangers to slide on. The suspension frame has an inclined frame at its bottom, and a wedge block travels in engagement with the plane and the shoulder of the hanger, there being an adjusting screw to regulate the movement of the wedge block to raise and lower the suspension frame.

**BOB SLED.**—Robert Douglass, Tara, Canada. The kind of sleds used in logging are especially the object of this improvement, the sleds being thereby so connected that they may be quickly adjusted to hold them a desired distance apart, means being also provided to enable the sleds to be quickly backed or hauled to any desired position and to conform to the irregularities of the ground. The forward bob sled is swivel connected with the rear bob sled, and the latter is flexibly connected with the reach, so that the sleds may be brought into almost any required position without straining them. A convenient means of binding the load to the sleds is also provided.

**PIANO.**—Anders Holmstrom, New York City. This improvement permits of shifting the key board and at the same time making proper connection between the fixed actions and the shifted keys. Combined with a key board having straight keys is a damper lever arranged out of alignment with the corresponding key, a bar pivoted to the lever permitting it to swing sidewise to bring the free end of the bar over the end of the corresponding key, means being provided for fastening the bar in place on the lever after it is adjusted relative to the key board.

**SLIP HOLDER.**—Samuel J. Kelso, Detroit, Mich. This is an improved device to hold salesmen's entry slips and similar articles, and consists of a case or holder which may be conveniently carried about, to receive entry slips, bills, etc., holding them so that they will not be scattered and in a manner to be easily written upon, either when the holder is in the hand or laid upon a support. The case is open-topped and has cross strips across its face, a spring-pressed follower pushing the slips outward, while side flanges of the holder embrace the top and bottom of the case.

**LETTER BOX.**—William H. Sheffield, Brooklyn, N. Y. For letter boxes such as are placed side by side and are usually packed into a small space, this invention provides a hinge by means of which the door of the box may be hung from the inside, so that the door may be very nicely finished without exposing the hinge, the hinge being so made that it will not strike the side partition of the box, while it will be very strong and will act as a brace when the door is open.

**RUBBER SHOE.**—Samuel W. Powell and John W. Marshall, Richmond, Mo. This shoe has at its heel a pocket open at its upper end, in which is held an elastic strip fastened at the base of the pocket, there being a fastening device on the upper end of the strip adapted to engage a button or projection on the shoe over which the rubber is worn, while the elastic strip is received within the pocket of the rubber when disengaged.

**FOLDING BED.**—Hugh Stevenson, New York City. Combined with a tilting bedstead mounted on a suitable base is a cable connected with the base, and means for tightening and loosening the cable by the movement of the bedstead, the several pieces of bedding being connected at one end to the cable, which separates and lowers the bedding with the rise and fall of the bed. By this improvement the covers and bed are freely suspended when the bedstead is folded, thus permitting a full circulation of air within the bed clothing instead of its being held tightly within the casing.

**CLOTHES DRIER.**—Hugh Stevenson, New York City. This is a convenient device which may be easily placed in position in a window to form a handy support for small clothes. It consists of a main bar adapted to be secured in a support, and having circular racks and horizontally swinging arms, readily adjustable as desired.

**HAT HOLDER AND CASE.**—Hugh Stevenson, New York City. This is an improvement in hat holders for carriages and other vehicles, a hinged receptacle being provided in which a stiff hat of any kind may be readily placed and securely held, a soft hat

being carried in the case to be substituted for the stiff hat when desired. The case is secured to the roof of the carriage, from which it is swung open, being locked in place by a catch when swung upward.

**HAT PACKING CASE.**—Joseph S. Abrams and John Langsdorf, New York City. An elongated box, of which a lid forms one side wall, is provided with a series of spaced elastic carrier bows adapted to spread when a hat is inserted, forming a novel hat packing case for sample hats, holding them safely separated and protected from contact with the case walls, while affording ready access to any hat without disturbing the others. These cases are also adapted to be carried within an ordinary hat packing trunk, any case of the set being readily removed, as required, where the goods have to be exhibited.

**HAT POLISHER AND CLEANER.**—Cæsar Simis, Brooklyn, N. Y. This is a machine comprising preferably an electric motor and a rotary expandable hat holder or carrier, to fit within a wearer's hat and rotate it, the hat being thus firmly held and rapidly revolved, so that when a finishing cloth, brush, or iron, is held against the hat it will be quickly cleaned and polished. The improvement is primarily designed for use in stores, barber shops, etc., where the small amount of electric power needed may usually be readily obtained, and a boy may polish and clean a customer's hat while he is waiting.

**BUCKLE.**—Martin Logan, New York City. The two leading parts of this buckle—that is, its body and loop piece—are made to engage after the manner of a clasp, the buckle having a variety of features of novel construction, and being useful wherever a buckle can ordinarily be used for uniting two parts or pieces together, irrespective of what the parts are made of, such as woven fabric, cloth, or leather, etc.

**SPONGE CUP.**—James S. McClung, Pueblo, Col. This is a cup of simple and durable construction, to be readily applied to any form of school desk, it being so made that a sponge held in the cup may be dampened and the surplus water pressed out into a receptacle provided for such purpose. The support for the cup may also be used as a rack to hold pen holders, pencils, etc.

**FILLING SYRINGES.**—Lewis S. Riggs, Selma, Ala. This apparatus comprises a cork with a longitudinal opening enlarged at its inner end and having on the outer end a rib or bead surrounding the opening, in combination with a syringe having a bearing forming in connection with the bead a tight joint. The special cork and syringe are adapted for use together in filling the syringe from a bottle, an ordinary cork being kept in the bottle at other times.

**BAR FIXTURE.**—Alexander Brandon, New York City. This is an attaching device for the under side of a bar, a frame turning upon a depending bolt or rod, and receptacles being removably bolted to the outer edges of the frame. The receptacles may contain sugar or other articles, to be concealed beneath the bar when not in use. The construction is durable and inexpensive, and the receptacles are readily removed and replaced to facilitate cleaning.

**ANIMAL TRAP.**—Henry J. Steiner, Jersey City, N. J. This trap is adapted, when sprung, to strike the animal across the neck or back, and thus hold it a prisoner. The striking arm is controlled by a coiled spring, and the trap may be set from the exterior, it not being necessary to pass the hand into the inside for this purpose. The bait lever acts as a trip lever, and the construction is strong and durable.

**DESIGN FOR A BOTTLE.**—Leopold Kahn, New York City. This design has curved stem-like figures, from which extend side branches terminating in flower-like figures falling over and upon the bottle top, numerous leaf-like figures giving an appearance of open lace work. The design relates to that variety of bottles which are inclosed in a metallic covering.

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

## NEW BOOKS AND PUBLICATIONS.

**THE OPTICAL INDICATRIX, AND THE TRANSMISSION OF LIGHT IN CRYSTALS.** By L. Fletcher. London: Henry Frowde. 1892. Pp. xii, 112. No index. Price \$3.

This tract is a reprint from a mineralogical magazine. It treats the subject mathematically and will no doubt be found of value to physicists, especially to those interested in the laws of light.

**BUSINESS LAW.** By Alonzo R. Weed. Boston: D. C. Heath & Co. 1892. Pp. 172. Price \$1.10.

This work purports to be a manual for schools and colleges and for everyday use. According to the preface, the rule of law that no one is excused because of his ignorance of the law is well established, and the knowledge of some of it is here presented. The work is very attractively printed with full-faced captions, and one section of it is devoted to questions and exercises in the subjects treated. A very satisfactory index is appended.

**THE ATLANTIC FERRY: ITS SHIPS, MEN, AND WORKING.** By Arthur J. Maginnis. London: Whittaker & Co. New York: Macmillan & Co. 1892. Pp. xviii, 304. Price \$2.

With its numerous illustrations of old-time ships, as well as of the more modern productions of the naval architect, with a record of their achievements and portraits and notes of the lives of the men identified with the great business of ocean lines, this work will be found thoroughly popular. The reprints of early advertisements and the collection of every kind of record, the numerous tables, such as those of average passages, causes of loss, and the list of records and

events up to a very recent date, give the work a statistical value hard to overrate.

**THE LOCOMOTIVE.** VOL. XII. The Hartford Steam Boiler Inspection and Insurance Co., Hartford, Conn. Pp. 194.

Considerable interesting matter accumulates in the pages of this little periodical from year to year. We believe that the present volume, which we are glad to see is provided with an index, will be of use as well as of interest. The lesson taught by it is, emphatically, greater care of our steam plant and boilers.

**GENESIS I. AND MODERN SCIENCE.** By Charles B. Warring, Ph.D. New York: Hunt & Eaton. Cincinnati: Cranston & Stowe. 1892. Pp. 245. No index. Price \$1.

Whether there is any use in discussing the supposed conflict between modern science and the Bible is a very open question. The author of the present work at all events has had the satisfaction of pointing out the changes of base taken by scientists, showing to that extent their unreliability as exponents of positive truth in all matters.

**A GERMAN SCIENCE READER.** By J. Howard Gore. Boston: D. C. Heath & Co. 1891. Pp. ix, 185. Price 80 cents.

The effort to add interest to the study of a language by combining science therewith is the motive of this reader. With quite full notes and a very satisfactory vocabulary and with the separate reading lessons, each referred to its author, the work seems to possess an unusual value. While the absence of index is noted, it is of course a class of book which really requires none.

**DIE ELEKTRICITÄT.** Von Th. Schwartz, E. Japing und A. Wilke. Wien, Pesth, Leipzig: A. Hartleben. 1892. Pp. 157. Price 50 cents.

In this short work, which is the fourth edition, the entire subject of electricity is in some shape covered. It contains a number of illustrations, has an index, and altogether is of quite a practical nature.

**FARMYARD MANURE.** By C. M. Aikman. William Blackwood & Sons, Edinburgh and London. 1892. Pp. xiii, 65. No index. Price 60 cents.

This short and practical work will be of considerable value to the farmer as giving him the modern view of the all-important question of the fertility of his fields. It gives a comparison between natural and artificial fertilizers and the best methods of dealing with the former.

**SILK DYEING, PRINTING, AND FINISHING.** By George H. Hurst. London and New York: George Bell & Sons. 1892. Pp. viii, 226, with additional pages giving samples of dyeing. Price \$2.

The practical description of the dyer's work and the production of all kinds of colors on silk are the matter of this volume, the beautiful samples appended seem to be the best recommendation of the work, as indicating what may be done by following its precepts.

**LE GAZ, ET SES APPLICATIONS.** E. De Mont-Serrat et E. Brisac. Paris: J. B. Baillière et Fils. 1892. Pp. 366. No index. Price 80 cents.

The history, technology and different applications of gas and its by-products are all somewhat briefly treated in this work. In some respects, such as its summary of the photometry of gas, it will be found of decided value.

**EXPERIMENTS WITH ALTERNATE CURRENTS OF HIGH POTENTIAL AND HIGH FREQUENCY.** By Nikola Tesla. New York: The W. J. Johnson Company, Limited. 1892. Pp. ix, 146. No index. Price \$1.

This book is a reprint of a lecture delivered before the Institution of Electrical Engineers in London, preceded by a brief biography of the author. The illustrations, which are engravings, are rather a relief after some of the reproductions of Tesla's work which have hitherto been published. A portrait of the author, with facsimile of his autograph, serves as frontispiece.

**BLOWPIPE ANALYSIS.** By J. Landauer. Authorized English edition. By James Taylor. London and New York: Macmillan & Co. 1892. Pp. xiv. Price \$1.75.

The compactness of this work and its tabular statements of blowpipe work and systematic causes of analysis will give it a place in the scientific field. The author adopts the aluminum plate which was so strongly advocated by Ross, and the more recent refinements of the work naturally find a place in it.

**MANUAL OF SCREW CUTTING.** By William Simpson. Boston: S. Woodberry & Co. 1892. Pp. 40. No index. Price 30 cents.

The value of this very brief manual seems to be attested to by the fact that this is the fifth edition, and its practical precepts will assure it a further acceptance by the public.

**THEORIE DU NAVIRE.** Par J. Pollard et A. Dubebout. Tome III. Paris: Gauthier Villars et Fils. 1892. Pp. i, 523. No index.

This third volume of the exhaustive treatise on naval architecture is devoted to the mathematics of the subject, especially as regards wave motion and the resistance of the water to the propulsion of the ships. The differential calculus is used as required and the subject is treated with every refinement of analysis. The paper and printing are beyond all criticism, the reproduction being in a mechanical sense a most elegant example of the publisher's art.

**THEORETICAL MECHANICS.** By J. Spencer. London: Percival & Co. 1892. Pp. viii, 243. No index. Price 80 cents.

This is a class book for the elementary stage of the English Science and Art Department. Being written for a limited and sharply defined field, its scope appears somewhat contracted. It is well printed and illustrated, however, and naturally possesses a value of its own.

**LE POIL DES ANIMAUX ET LES FOURMURES.** Lacroix-Danliad. Paris: J. B. Baillière et Fils. 1892. Pp. 419. No index. Price 80 cents.

An excellent illustration of the thorough French treatment of a subject as afforded by this book, which is really a monograph, and which treats of furs and skins of animals from every point of view. It is especially commendable from the illustrations, which in their sketchy French style are peculiarly effective. Many of them refer to the animals themselves and make a most attractive portion of the work.

The Californian Illustrated Magazine for July has over a hundred pages of excellent reading matter, and many attractive illustrations. Most noticeable of the general articles is one on "The Florence of the English Poets," and one on "Pompeii," with many recent photographs. First in interest, however, is a paper entitled "In the Yosemite," illustrated from paintings and photographs, while the descriptions of the Pasadena Southern California Mountain Railroad and the Schools of San Francisco, both amply illustrated, also contribute to the making of a highly interesting number. The magazine is published by the Californian Publishing Company, San Francisco. Price \$3 a year.

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## SCIENTIFIC AMERICAN BUILDING EDITION.

JULY NUMBER.—(No. 81.)

### TABLE OF CONTENTS.

1. Handsome plate in colors of a residence recently erected at Yonkers, N. Y. Perspective views, floor plans, etc. Messrs. Rossiter & Wright, architects, New York. An excellent design.
2. Plate in colors of a residence erected at Marina Heights, Black Rock, Conn. Perspective elevations and floor plans. Cost \$7,000 complete. Henry Lambert, architect, Bridgeport, Conn.
3. Perspective view and floor plans of a brick house at Chambersburg Pa., recently designed and built at a cost of \$2,500.
4. A cottage near Orange, N. J., from plans prepared by Munn & Co., architects, New York. Cost \$7,000 complete. Perspective view and floor plans.
5. A residence at Portland, Me., erected at a cost of \$5,575 complete. Floor plans and perspective elevation.
6. A residence at Bensonhurst, Long Island. Cost \$9,800 complete. Messrs. Parfit Bros., architects, Brooklyn, N. Y. Two perspective elevations and floor plans.
7. Perspective elevations and interior views of the American Yacht Club House, at Milton Point near Rye, N. Y. A handsome building of the Queen Anne style. Messrs. E. A. Sargent & Co., architects, New York.
8. A dwelling at Upper Montclair, N. J., erected at a cost of \$7,000 complete. Messrs. Munn & Co., architects, New York. Perspective and floor plans.
9. A cottage at Babylon, Long Island, N. Y., erected at a cost of \$3,700 complete. Plans and perspective elevation.
10. Sketch of an Australian bush home. Cost from \$1,200 to \$1,500. A simple and economical design for a summer house.
11. Miscellaneous contents: Electrical cotton gin.—Aluminum.—The efflorescence on brickwork.—Leaf photography.—Car roofing.—Superior steel furnaces, illustrated.—How to stain wood yellow and gray.—Ink for writing on glass or porcelain.—An improved wood-working machine, illustrated.—An improved revolving chimney top, illustrated.—Elevators in the amphitheater of Rome.—An improved hot water heater, illustrated.—Natural wood grille and screen work, illustrated.—Galvanized eaves troughs and conductors, illustrated.—Sliding blind patents.

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## 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.

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## Notes & Queries

### HINTS TO CORRESPONDENTS.

**Names and Address** must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. **References** to former articles or answers should give date of paper and page or number of question. **Inquiries** not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn. **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.

(4451) F. W. D. asks: The relative durability of yellow poplar, white pine and hemlock, used as lap siding, also how long can yellow poplar be exposed to the weather before it commences to decay? A. White pine is the best for building purposes under all conditions and for siding is far superior to poplar or hemlock, which curls and disintegrates by exposure to the weather, and will decay by the action of moist air much quicker than pine.

(4452) R. N. C., being an amateur photographer, asks advice in regard to whether he shall sell his prints. A. If you take photographs for the love of the thing or, in other words, if you are an amateur, do not commence to bother for the results of your work. If friends particularly want copies, and you cannot afford to give them away, lend your negative to some struggling professional in your neighborhood, and refer them to him. You will thus be helping the profession without doing anything to interfere with it or injure it in any way.

(4453) J. L. W. asks: 1. Would an iron rod connected with the iron cresting on peak of a house and carried into the ground protect a house from lightning? A. A lightning rod erected in the manner proposed and merely inserted in a hole in the ground would be worse than nothing, but if you were to dig a trench in earth that is constantly moist, put in a layer of coke and then lay your rod along the coke bed for 3 or 8 feet, cover the rod with coke and fill up the trench, you would have a lightning rod that would be serviceable. 2. Would it hurt a boiler to allow the steam to blow out all the water and sediment after the fire was drawn? A. It depends something upon the construction of the boiler. If the boiler were one in which rapid cooling would cause irregular expansion and consequent severe strain, of course it would be injured by the treatment suggested.

(4454) F. A. L. asks how the storage batteries which I see moved about as dry batteries are made so they can be handled so, and if they could be recharged from gravity batteries? A. Storage batteries can be readily moved about after the electrolytic liquid is removed. After they are put in place the same liquid or a liquid of the same specific gravity should be placed in the cells. We know of no dry secondary battery.

## INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

July 5, 1892,

AND EACH BEARING THAT DATE.

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

Adding machine, S. A. Potter..... 478,361  
Adhesive, J. W. Frank..... 478,229  
Advertising sign, illuminated, C. R. McGimsey..... 478,204  
Album case, W. Berger..... 478,330  
Ammonia distilling apparatus, W. L. Rowland..... 478,407  
Ammunition for submarine guns, H. Berdan..... 478,216  
Animal training apparatus, C. C. Kelly..... 478,513  
Antiseptic quinine, J. Biegler..... 478,495  
Atomizer, E. Lockwood..... 478,118  
Balance, indicating and recording, J. H. Greenstreet..... 478,232  
Balcony, folding window, C. Thompson..... 478,177  
Ballot box, C. F. Hodson..... 478,283  
Ballot box, F. K. Plumbly..... 478,264  
Barrel dripper, C. B. Allgood..... 478,303  
Basket, F. H. Beam..... 478,411  
Bast, lump, Hahn Herber..... 478,103  
Bath. See Solar or other bath.  
Battery. See Electric battery. Secondary battery.  
Beer, method of and apparatus for carbonating, Sobaeus & Wackenhuth..... 478,176  
Belt suspending device, E. Hammesfahr..... 478,360  
Bicycle, W. C. Davis..... 478,137  
Bicycle, W. H. De Witt..... 478,415  
Bicycle, A. W. Dunn..... 478,156  
Bicycle brake, W. T. Lewis..... 478,194  
Bicycle brake, F. D. Owen..... 478,204  
Bicycle frame, F. J. Bolter..... 478,321  
Bicycle oil can, J. W. Cushman..... 478,092  
Bicycle saddle, C. W. Zimmer..... 478,184  
Bicycle saddle spring, C. H. Holdsworth..... 478,430  
Bicycle wheel, J. S. Bretz..... 478,394  
Bit stock, O. R. Alden..... 478,248  
Blind stop, W. E. MacLachlan..... 478,262  
Boiler. See Steam boiler.  
Boiler furnace, W. Hurdley..... 478,433  
Boiler furnace, J. W. Wilkinson..... 478,210  
Boiler stand, range, J. M. Young..... 478,494  
Bolt. See Door bolt.  
Book, account, W. Lushy..... 478,197  
Bottle, J. H. Synner..... 478,266  
Bottle stopper, Traube & Kattentidt..... 478,483  
Box. See Ballot box.  
Box making machine, J. C. McEwen..... 478,456  
Brailing machine pool carrier, J. E. Lee..... 478,341  
Brake, bicycle, W. C. Davis..... 478,137  
Brazing device, electrical, W. Mitchell..... 478,301  
Bread raiser and cabinet, J. Miltonberger..... 478,200  
Brewing beer, C. H. & B. O. Frings..... 478,188  
Brick and tile machine, J. Thompson..... 478,481  
Brick and tile machine, O. W. Johnson..... 478,436  
Brick or tile machine, J. C. Thum..... 478,387  
Brick and tile machine, G. C. Skinner..... 478,436  
Bridge, T. H. Kosure..... 478,438  
Buckle, F. H. La Pierre..... 478,285  
Buckle, J. A. G. Mead..... 478,120  
Burner, G. Reimann..... 478,364  
Burner. See Bunsen burner. Fuel burner. Gas burner. Smoke burner.  
Butter worker, P. L. Kimball..... 478,113  
Button, separable, C. M. Sherer..... 478,174  
Can. See Filter can.  
Canisters, machine for making metal, A. E. Bentley..... 478,9  
Car and hose coupling, combined, J. H. Carroll..... 478,400  
Car coupling, E. M. Butler..... 478,067  
Car coupling, R. F. Ludlow..... 478,445  
Car coupling, C. C. Neff..... 478,125  
Car coupling, R. Quaternas..... 478,463  
Car coupling, A. E. Woolf..... 478,402  
Car electric mine, E. A. Sperry..... 478,138  
Car lighting system, electric, Young & Moskowitz..... 478,183  
Car wheel and axle, A. & W. A. Johnston..... 478,512  
Cars, ball bearing for railway, J. E. Norwood..... 478,351  
Cars, electrical distribution for, S. Young et al..... 478,182  
Carriage, baby, A. Richards..... 478,472  
Carriage gear coupling, N. E. Newman..... 478,128  
Case. See Album case. Syringe case.  
Cash register, N. B. Wright..... 478,532  
Cash register and indicator, C. S. Lewis..... 478,164  
Cash register and indicator, C. E. Lord..... 478,196  
Casket handle, J. McCarty..... 478,168  
Chain, drive, B. Van Wier..... 478,494  
Chain, drive, Dodd & Martin..... 478,416  
Chair. See Rail chair. Railway chair. Reclining chair.  
Chair, Richards & Giese..... 478,130  
Chair, Richards & Giese..... 478,131  
Chairs and the like from being raised, protecting bank, T. S. Spivey..... 478,294  
Chimney cleaner, D. Alken..... 478,302  
Chimney thimble guard, J. T. Gendron..... 478,422  
Chopper. See Cotton chopper.  
Clasp. See Suspender clasp.  
Cloak rack, F. Wolf..... 478,386  
Clock, electric alarm, G. C. Darche..... 478,155  
Cloth, etc., machine for straightening and winding, A. R. Edwards..... 478,255  
Cloth napping machine, W. Thomas..... 478,144  
Clothes tong, Upton & Kennard..... 478,382  
Clutch treadle, A. C. Campbell..... 478,398  
Coal washer, S. Stutz..... 478,479  
Coating metal sheets, apparatus for, R. Heathfield..... 478,282  
Coke, device for opening and closing, O. Coe..... 478,444  
Coffee pot, J. W. Abbott..... 478,075  
Coin, commercial, I. T. Alvord..... 478,304  
Coin table, F. C. Lidke..... 478,165  
Coin holder, R. Lake..... 478,116  
Coin holder, J. H. Mueller..... 478,452  
Confectionery, apparatus for the manufacture of tubular articles of, C. E. Gardiner..... 478,279  
Conveying apparatus, T. S. Miller..... 478,348  
Cooker or boiler, domestic, H. C. Joerden..... 478,331  
Cooking utensil, A. Simons..... 478,217  
Cooling machine, S. Smith..... 478,378  
Cooler. See Milk cooler.  
Copying machine, C. Maine..... 478,119  
Cork extractor, R. B. Gilchrist..... 478,545  
Corn popper, portable, A. B. Olson..... 478,353  
Cotton chopper, Ellis & Sperry..... 478,158  
Cotton picker, A. Schulze..... 478,473  
Coupling. See Car coupling. Car and hose coupling. Carriage gear coupling.  
Cradle, J. H. & G. W. Meek..... 478,450  
Cravat holder, H. Lehmann..... 478,342  
Cuff holder, R. B. Gardner..... 478,101  
Cup. See Oil cup.  
Curling iron holder, G. F. McIntosh..... 478,123  
Curling tongs heater, A. W. Kent..... 478,377  
Current motor, F. Dinwiddle..... 478,316  
Cutting knife, W. E. Taft..... 478,351  
Cyclometer for velocipedes, J. Butcher..... 478,085  
Damper regulator, automatic steam, G. Newton..... 478,127  
Damper, stovepipe, L. M. Devore..... 478,414  
Deck cleaning machine, S. Lowberg..... 478,443  
Dental flask clamp, M. R. B. Creery..... 478,312  
Dental forcing, C. E. Blake, Sr..... 478,217  
Dental tool, C. P. Lennor..... 478,343  
Desk, writing, O. Kisinger..... 478,336  
Die. See Screw swaging die.  
Digger. See Potato digger.  
Distilling apparatus, H. Propp..... 478,285  
Ditching machine, J. Corneliu..... 478,408  
Divers, microtelephonic apparatus for, R. Wreder..... 478,493  
Door bolt, prison, Weary & Kramer..... 478,146  
Door check, J. H. Shaw..... 478,371  
Door check, pneumatic, G. W. Wright..... 478,372  
Door closer, automatic, J. B. Stoner..... 478,45  
Door spring, A. A. Page..... 478,354  
Door spring, J. H. Shaw..... 478,370  
Door spring, G. W. Wright..... 478,387  
Dovetailing machine, Cordesman & Chesbire..... 478,544  
Dress waist form, H. A. Brown..... 478,308  
Drier. See Tea and fruit drier.  
Drill. See Prospecting drill.  
Drum, Stoisman & Pepper..... 478,378  
Dynamo and motors, brush holder for, M. H. Hathaway..... 478,104  
Electric battery, C. F. Waldron..... 478,485  
Electric cable, W. H. Sawyer..... 478,367  
Electric circuit lighting switch, B. E. Waters..... 478,180  
Electric indicator, W. E. Degrow..... 478,274  
Electric light brackets, swing joint for, H. P. Drew..... 478,417  
Electric lighting system, Cooke & Mackay..... 478,186  
Electric machine, dynamo, C. W. Thomas..... 478,539  
Electric machine or motor, dynamo, E. A. Sperry..... 478,142  
Electric motor, B. Seeley..... 478,475  
Electrical distribution, system of, H. W. Leonard..... 478,344  
Electricity, time registering apparatus for, H. H. Pattee..... 478,237  
Elevator. See Milk elevator.

Elevator, J. R. Moss..... 478,263  
Elevator safety attachment, M. J. O'Donnell et al..... 478,169  
Elevators, carrier attachment for bucket, M. Garland..... 478,322  
Embroidering machines, fabric holding frame for, F. Hurler..... 478,192  
Engine. See Pumping engine. Rotary engine. Rotary steam engine.  
Envelope fastener, J. W. Gibboney..... 478,538  
Envelope, manufacture of, A. Schwabenberger..... 478,474  
Excavating apparatus, sewer, W. Davy..... 478,254  
Exercising apparatus, W. Madsen..... 478,166  
Explosive compound, S. Rodgers..... 478,366  
Extractor. See Cork extractor.  
Fare register, J. W. Meaker..... 478,167  
Faucet, self-closing, A. Mayer..... 478,199  
Feed mechanism, H. Janssen..... 478,511  
Feed water heater, J. De Vries..... 478,315  
Feed water heater and boiler, combination, A. T. Brewer..... 478,395  
Feeding rack, stock, H. G. Chamberlain..... 478,402  
Fence, H. B. Perkins..... 478,170  
Fence machine, wire and picket, A. H. Rogers..... 478,193  
Fermenting, J. Emont..... 478,418  
Filter, S. G. Derham..... 478,083  
Filter, O. H. Jewell et al..... 478,261  
Filter can, F. Rerich..... 478,356  
Filter, oil, B. Carone..... 478,178  
Filter, water, O. Eastman..... 478,157  
Finger tapering device, E. R. Paige..... 478,356  
Firearm, magazine, A. Burgess..... 478,220 to 478,222  
Fire engine pump, T. S. La France..... 478,439  
Fire kindler, J. W. B. Cook..... 478,249  
Fire, L. H. Fowler..... 478,378  
Fishing reel, F. B. Hender..... 478,326  
Fuel burner, liquid, E. Squire et al..... 478,256  
Fur carotting machine, Sanders & Carlin..... 478,470  
Furnace. See Boiler furnace. Smoke consuming furnace.  
Furnace, F. Edgar..... 478,819  
Gauge. See Hat gauge. Shingle gauge. Sirup gauge.  
Game apparatus, P. S. Faulkner..... 478,100  
Gas apparatus for the manufacture of water, J. Askins..... 478,306  
Gas burner, natural, T. A. Linder..... 478,117  
Gas from gas mains, means for detecting the escape of, A. Gueguen..... 478,424  
Gas, generating, W. H. Harris..... 478,425  
Gas generator, carbonic acid, P. J. Maguire..... 478,198  
Gas lighting device, Quinn & Hoffmann..... 478,522  
Gas manufacturing, F. M. Pierson..... 478,490  
Gas regulator, M. Sweeney..... 478,480  
Gate, J. N. Morgan..... 478,451  
Gear for high speed rotary machines, starting, J. Head..... 478,541  
Generator. See Gas generator.  
Glass heating oven, A. O. Hurley..... 478,328  
Glove, voltaic, F. Simpson..... 478,293  
Gloves, shoes, etc., hook and fastener for, F. S. McKenney..... 478,520  
Grades, etc., device for ascertaining, D. C. Wolfe..... 478,491  
Grading and sorting machine, pneumatic, H. O. Grindley..... 478,516  
Grinding mill, G. R. Cullingworth..... 478,252  
Guard. See Chimney thimble guard. Hub dust guard.  
Gun, recoil operated magazine, O. H. Bennett..... 478,214  
Guns, operating submarine, H. Berdan..... 478,215  
Gunner shield, Emerson Middley..... 478,505  
Hair clipper, M. Port..... 478,461  
Handle. See Casket handle.  
Harmonica, L. G. Lawrence..... 478,514  
Harness attachment, J. W. McNeill..... 478,124  
Harrow, W. W. Green..... 478,259  
Hat gauge, J. Shirer..... 478,291  
Hatchway door, device for operating, S. G. Tufts..... 478,297  
Hay rake, horse, Brown & Knaub..... 478,083, 478,084  
Heater. See Curling tongs heater. Feed water heater. Water heater.  
Heating apparatus, J. F. McElroy..... 478,203  
Hoisting platform, C. F. Ball..... 478,078  
Holder. See Cravat holder. Cuff holder. Curling iron holder. Opera glass holder. Pencil holder. Picture holder. Rein holder.  
Hook, E. W. Davis..... 478,318  
Hook and eye, B. D. Paine..... 478,351  
Hook and eye, B. Porter..... 478,350  
Hops, obtaining extracts from, C. H. & B. O. Frings..... 478,508  
Horseshoe, J. E. Jarvis..... 478,435  
Horses hoe, nailless, J. McCaffrey..... 478,455  
Hub, dust guard, J. T. Fiedler..... 478,277  
Hub, vehicle, A. A. Minor..... 478,287  
Hydraulic jack, horizontal, J. Weeks..... 478,530  
Hydraulic machinery, G. S. Duncan..... 478,225  
Indicator. See Electric indicator.  
Inspector, L. Shover..... 478,492  
Insulator, L. McCarthy..... 478,518  
Jack. See Hydraulic jack.  
Jar sealing device, I. P. Nelson..... 478,126  
Joint or coupling for metallic pipes or tubes, J. Aird..... 478,496  
Joints, wrought metal, separator for, Lehman..... 478,493  
Journal bearing, M. M. & M. Andrews..... 478,586  
Key fastener, A. J. Lyon..... 478,448  
Kneader, dough, Erren & Lohner..... 478,507  
Kneading machine, J. M. Ruthrauff..... 478,133  
Knife. See Cutting knife.  
Knitting machines, fashioning apparatus for, J. F. Wilkins..... 478,527  
Labels to cans, machine for applying, J. F. Williams..... 478,286  
Lace fastener, shoe, J. S. Murphey..... 478,123  
Lacing for shoes or other articles, F. S. McKenney..... 478,519  
Lacing stud, F. McKenney..... 478,521  
Ladders, latch for extension, J. A. Weston..... 478,384  
Lampblack, making, Wenstrau & Blood..... 478,268  
Lamp, electric arc, R. M. Hunter..... 478,510  
Lamp, electric arc, E. Thomson..... 478,145  
Lamp, extension table, T. H. Hellsrom..... 478,325  
Lamp, table, J. B. Watter..... 478,467  
Lamp socket, incandescent electric, H. E. Werline..... 478,149  
Lamp suspension bar, electric, T. Dillon..... 478,275  
Land roller, pulverizer, and harrow, combined, J. H. Wilts..... 478,490  
Lasting machine, G. Chase..... 478,501  
Lathe, gauge, L. C. Trask..... 478,178  
Lathe, lathe attachment, F. D. Skeel..... 478,244  
Lead corroding pit, water, W. H. Wetherill..... 478,488  
Level, spirit, T. L. Burchinal..... 478,309  
Lightning arrester, C. S. Van Nuis..... 478,383  
Links and apparatus for equalizing, T. Murphy..... 478,454  
Lock. See Magnetic lock. Time lock. Till lock.  
Lock, C. Richtmann..... 478,239  
Locomotive, electric, S. H. Short..... 478,242, 478,477  
Locomotive, electric, E. A. Sperry..... 478,139  
Loom. See Loom.  
Loom. See Loom.  
Loom pile wire, G. Segsneider..... 478,385  
Loom weft hammer, Derbyshire & Mullen..... 478,413  
Magnetic lock, H. V. Smith..... 478,245  
Malt liquors, hopping, C. H. & B. O. Frings..... 478,159  
Matrix making machine, G. A. Goodson..... 478,257  
Matrix material, F. A. Johnson..... 478,338  
Measurement of electrical resistances, apparatus for the, S. Evershed..... 478,096  
Measuring apparatus, grain, K. G. Jensen..... 478,241  
Measuring instrument, electric, S. Evershed..... 478,097  
Measuring machine, cloth, G. Wilcox et al..... 478,531  
Measuring machine, warp or line, W. H. Kynett..... 478,115  
Mechanical motor, G. Cochins..... 478,088  
Metal plate bending machine, L. C. Crowell..... 478,090  
Milk cooler, S. W. Tobey..... 478,482  
Milk elevator, J. Jeppesen..... 478,161  
Milk tester, J. H. Shaw..... 478,359  
Mill. See Grinding mill.  
Mining machine, E. A. Sperry..... 478,141  
Miter machine, A. L. Maxim..... 478,449  
Moulding machine, S. Smith..... 478,377  
Mole, like, or dam for silt bearing streams, W. W. Carson..... 478,154  
Mortising machine, L. Houston..... 478,431  
Motor. See Current motor. Electric motor. Mechanical motor. Water motor.  
Music rack and telescopic stand therefor, folding, H. W. Potter..... 478,460  
Musical instruments, accompaniment indicator for, G. P. O. Heroux..... 478,107  
Numbering machine, C. H. Shaw..... 478,241  
Nutlock, S. Durben..... 478,096  
Nutlock, L. H. Young..... 478,300  
Oarsman's recorder, J. Banks et al..... 478,270  
Oil cup, Cole & Hazeburn..... 478,159  
Oil receptacle filler cap, W. Froesch..... 478,421  
Opera glass holder, A. B. Nicholson..... 478,350  
Ore concentrating belts, fluid support for, F. G. Corning..... 478,502  
Ore pulverizer, J. J. Stuart..... 478,209  
Paper, apparatus for severing sheets from web of, J. H. Cox..... 478,409  
Paper feeding apparatus, Hunt & Phillips..... 478,329  
Paper, mechanism for delivering and cutting roll, D. L. Goff..... 478,231  
Paper mill suction apparatus, Sanderson & Base..... 478,230  
Paper wrapping machine, J. L. Lintion..... 478,345  
Partition or ceiling, fire proof, C. F. W. Doehring..... 478,318  
Pencil holder, O. A. Elliott..... 478,387  
Pencil sharpener, slate, W. Shriver..... 478,374  
Photographic plate carrier, C. H. Lohman..... 478,285  
Piano action, transposing, C. G. George..... 478,523