## RECENTLY PATENTED INVENTIONS. Railway Appliances.

CAR COUPLING. - Hiram D. Layman, Little Rock, Ark. The coupling pin in this device has a trip extension, there being a latch for securing the pin in coupled position, while the link has a shaft keyed to it, with other novel features, the device obviating the necessity of brakemen going between cars, while it may be used to couple to an ordinary drawhead, or to receive the common link held in an ordinary drawhead.

CAR COUPLING. - Henry Gallager, Savannah, Ga. This invention relates to that class of devices known as "twin jaw" couplers, and is designed to be automatic in some of its operations, and to consist of a minimum number of simple parts.

AUTOMATIC AIR BRAKE. - George B. Williams, Portland, Oregon. This invention consists principally of a direct closed passage leading from the train pipe to the brake cylinder and adapted to be forced open by the train pipe pressure exerted on an auxiliary piston during emergency applications of the brakes, and to be thus held open so long as the pressure on the inner side of the auxiliary piston exceeds the pressure on its outer side.

### Mechanical.

FINISHING EMERY WHEELS. - Frederick Kohule, Dayton, Ohio. This invention covers a method of finishing emery-coated wheels by applying a coating of glue and emery to the peripheral face of the wheel, and then revolving the wheel in contact with a heated cylinder, whereby the emery and glue are evenly spread and quickly dried.

MILLSTONE PICK. - Jacob W. Truax, Essex Junction, Vt. This is an improved article of manufacture, in which the head of the pick is formed with integral semi-elliptical jaws at its opposite ends, the rear walls of the oval openings forming abutments for the blades, making a simple and economical tool in which the blades may be conveniently inserted or removed

LUBRICATING DEVICE. - J. A. MC-Dowell-Guajardo, Philadelphia, Pa. This is a device for lubricating the top and bottom rollers of spinning, slubbing, and drawing frames, in such way that the covers of the rollers are protected from being soiled by the lubricant, thereby adding to their durability and promoting economy in the work.

### Agricultural.

CORN PLANTER.-John K. Thompson, Arkansas City, Kansas. This machine consists of a novel construction and combination of parts providing means whereby the seed may be dropped from either box, or from both at the same time, and also for hilling the corn simultaneously with the planting, and in such manner that the hills will be fully and plainly visible.

### Miscellaneous.

HEATING DRUM.-Genisa Ott, Scotia, Neb. This is a device to be applied to the pipe of an ordinary stove to utilize the heat, the heating drum consisting of an outer and an inner cylindrical casing, with a spiral flange between the two, with a damper and a disk door, whereby the hot currents are caused to pass through the drum by a long or short route.

STORE SERVICE APPARATUS. -Edward A. Rorke, Brooklyn, N. Y. This invention provides a means for transferring a carrier from a dispatch track to a return track where the ends of the tracks are in different vertical and horizontal planes, a switching track being employed adapted to be moved vertically and also horizontally, making a combined elevator and switch track.

WIRE AND PICKET FENCE MACHINE. -James Kelley, Richmond, Ind. 'This is a machine designed to automatically feed the picket between the wires, twisting the same in reverse direction at each edge of the picket, and feed the same forward, and embraces various novel features whereby the movement of the machine may be continuous, and will require the service of only one man or boy to run it.

WAY BILL. - Edward P. Campbell, New York City. This 1s a form designed to substitute all local and through way bills, and all local and joint manifests or invoices, obviating the necessity of rebilling, etc., at the junction points of the various roads or lines over which it passes, and thus facilitating accounting and auditing.

PRINTING TELEGRAPH. - George B. Scott, Lakewood, N. J. This printing telegraph is provided with a ratchet wheel and nawl arranged to be by a magnet placed m th main circuit, or one of the magnets commonly used in printing telegraphs, the ratchet wheel being connected through the medium of a spring with the type wheel shaft, which is thus propelled by power derived from the impulses sent over the line.

may be supported and attached to the dress of the operator at any desired point

COLLAR AND CUFF DRIER.-John G. Dixon, New York City. This invention covers an ap paratus designed to bring currents of hot air in contact with the articles, so that no portion of the heated air will escape without bearing its proportion of moisture, and also to facilitate the handling of the goods, and the dampening of them preparatory to the ironing.

DRAUGHTING PATTERNS FOR GAR ENTS.-Eugene E. O'Halloran, Walpawa, New Zea land. This is an apparatus to enable tailors to quickly produce in various shapes and dimensions patterns of suits in various sizes, and consists of a rectangular frame with slotted and graduated side bars, and adjustably secured graduated cross bars, an angular shaped diagonally arranged shoulder, with other novel features.

BODY VENTILATOR.-Joseph E. Butts, Hawthorn, Fla. This is an elastic support designed to be fitted to the body, and a half-rigid skeleton frame in jacket shape, connected by stays held from the support, whereby an air space is formed between the clothes and the body of the wearer, to keep the body at a proper temperature when subject to exposure in warm weather.

SHOE UPPER. - Vincenzo Andretta, New York City. This invention consists of a boot of shoe having its entire upper and tongue piece made without seam, and of one piece of leather, on a specially devised last having a tapering groove or depression from its upper part down to near the instep, with projecting flanges on opposite sides, whereby the front portion of the material will be formed into an expanding and contracting tongue.

TIE PLATE FOR BRUSH FILLINGS. Samuel K. Hawkins, Elmira, N. Y. This is a plate designed to effectually tie the ends of the brush filling in position and permit the lower extremity of the filling to project outward beyond the perpendicular frame of the end of the brush, the plate being of novel construction.

PENCIL SHARPENER.-Walter J. Gill. Boston, Mass. Combined with a stock having a pencil rest or table on its top surface, is a roughened tablet | and a chip-receiving box, with a detachable handle and a cutting blade so attached to the handle as to be adapted to shave a pencil point tapering by successive shearing cuts.

BOTTLE STOPPER,-Otto Eick, Philadelphia, Pa. This is a hinged cap through which passes a bolt supporting a flexible block on the under side of the cap, a cam lever being held on top of the cap and engaging the bolt to raise or lower it, to compress the flexible block on the under side of the cap in the mouth of the bottle.

GAME --- Philip Bosche, Cortland, N.Y. -This invention provides a toy base ball field by the manipulation of which a ball, block, or cube representing a player may be made to travel in accordance with certain rules around the field, or sometimes a globule of mercury and a single ball are employed in playing the game.

## NEW BOOKS AND PUBLICATIONS.

OFFICIAL REPORTS OF VARIOUS DUTY TRIALS OF THE GASKILL PUMPING ENGINES. Holly Manufacturing Co., Lockport, N.Y. Buffalo, N.Y.: The Courier Company. 1890. Pp. 229.

We have already had occasion to notice the Gaskill pumping engine, the successor to the Holly engine. Illustrations of the engine, with tables of tests made upon it as running in different water works, are here given, showing its very high efficiency and the large amount of duty credited to it.

THE ELEMENTS OF MACHINE DESIGN. Part I. General principles, fastenings, and transmissive machinery. By W. Cawthorne Unwin. New edition, revised and enlarged. London: Longmans, Green & Co. New York. 1890. Pp. xvi, 459.

The subject of this book, as treated in its pages, is given in great detail to mathematical analyses, graphical development and mechanical and perspective drawing being called upon for its illustrations. It can safely be recommended to those desiring to bring out the highest class of machinery under the best auspices. as to the proper proportion of parts and shapes

THE ART OF PAPER MAKING. A practical handbook of the manufacture of other from rags, esparto, straw, and other fibrous materials. By Alexan-der Watt. London: Crosby Lock-wood & Son. 1890. Pp. xi, 260.

PRACTICAL ELECTRICAL NOTES AND DE-FINITIONS, FOR THE USE OF ENGI-

NEERING STUDENTS AND PRACTICAL MEN. By W. Perren Maycock, as-sociate member of the Institute of Electrical Engineers, instructor of electrical engineering at the Pitlake Institute, Croydon. Together with the rules and regulations to be ob-served in electrical installation work, as issued by the Institution of Elec-trical Engineers and the Phœnix Fire Office. With diagrams. E. & F. N. Spon, London and New York. 1889. Pp. 130. Price 60 cents. E. &

SOIE AU POINT DE VUE SCIENTIFIQUE LA ET INDUSTRIEL. By Leo Vignon. Paris: Librairie J. B. Bailliere et Fils. 1890. Pp. 360.

The entire subject of silk treatment from the cocoor to the finished fabric is reviewed, and numerous illustrations.tables, and statistics give a peculiar value to the work as a standard. It will be recognized as a very able and valuable contribution to the art of silk raising.

A MANUAL OF PHARMACEUTICAL TEST ING FOR THE MAN OF BUSINESS AND HIS ASSISTANTS. By Barnard S. Proctor. Published at the offices of the Chemist and Druggist, London, and at Melbourne and Sydney. 1890. Pp. vii, 176.

The principal tests required in the pharmacy for the man of business and his assistant, to take the wording of the title, are clearly given here by the author. Pharmacists as a rule are somewhat empirical in any thing approaching analytical work, but the tests here given represent, very satisfactorily, the class of work required in daily practice.

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# SCIENTIFIC AMERICAN

## BUILDING EDITION. JULY NUMBER.-(No. 57.)

- TABLE OF CONTENTS.
- 1. Elegant colored photographic plate of the residence of Henry R. Towne, at Stamford, Conn. H. H. Holly, of New York, architect. Perspective elevation, floor plans, sheet of details, etc. Cost \$20,000.
- 2. Plate in colors of a dwelling at Tremont, N. Y. Floor plans, perspective elevation, sheet of details, etc. Cost \$6,000.
- 3. Perspective elevation and floor plans of a residence at Monclair, N. J. J. C. Cady, of New York, architect. Cost complete \$10,000.
- 4. Photographic view and floor plans of a residence at West Brooklyn, N.Y. Cost \$4,500.
- 5. A cottage at Dunwoodie, N.Y. Floor plans and perspective elevations. Cost \$5,000 complete.
- 6. A dwelling at Holyoke, Mass. Perspective and floor plans. Cost complete \$5,500.
- 7. Sketch of a residence at Surbiton.
- 8. Design for a one story house to cost about \$1,000.
- 9. Engravings representing the exterior and plan of a large piggery.
- 10. A dwelling erected for Mr. C. D. Danforth, Yonkers. N.Y. Floor plans and perspective. Cost \$9,000 complete.
- 11. Photographic perspective view and floor plans of a neat and desirable cottage recently erected at Griswold, Iowa, from plans and perspective published in the SCIENTIFIC AMERICAN. Cost \$1,075.
- 12. A handsome residence at Springfield, Mass. erected for Mr. E. W. Shattuck. Perspective and floor plans. Cost \$15,000.
- 13. Floor plans and photographic perspective of several cottages crected for the late Hon. Chas, Crary, at Chester Hill, Mount Vernon, N. Y. Cost \$4,000 each complete. Mr. J. C. Brown, of Mount Vernon, architect.
- 14. Sketch of a chapel and village hall. Estimated cost \$20,000.
- 15. Page engraving of the Ripon Cathedral, Yorkshire, England.
- 16. Miscellaneous contents: Steam and hot water heating .- The garden .- European health resorts. -Fireproof paint.-Testing well water for sewage.

## 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 next issue.

For Sale-New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N.Y. Acme engine, 1 to 5 H. P. See adv. next issue,

Tuerk water motors at 12 Cortlandt St., New York. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 155 machines in satisfactory use.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Safety Elevators, steam and belt power ; quick and mooth. The D. Frisbie Co., 112 Liberty St., New York. Veneer machines, with latest improvements. Farrel Fdry. and Mach. Co., Ansonia, Conn. Send for circular. Tight and Slack Barrel Machinery a specialty. John Freenwood & Co., Rochester, N.Y. See illus. adv., p. 13. Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and CanalSts., New York. Billings' Double-acting Ratchet Drills. Drop Forgings.

Bronze Forgings. Billings & Spencer Co., Hartford,

Wanted-Bids for the manufacture of a large number of time-stamps. Address "New Patent," care Scientific American, New York.

First-class Marine Draughtsman wanted. Give reference and salary expected. F. W. Wheeler & Co., ship builders, West Bay City, Mich.

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps, acid blowers, filter press pumps, etc.

English tanned walrus, hippopotamus, giraffe, elephant and buffalo leather for polishing metals. All kinds mfrs." supplies. Greene, Tweed & Co., 83 Chambers St., N. Y.

The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N. Y. Britten's "Watch and Clockmakers' Handbook, Dictionary, and Guide." Seventh edition. Copiously illustrated. 436 pages. \$2.00, E. & F. N. Spon, 12 Cortlandt St., New York,

The valuable patent on umbrella folding table, illustrated on page 51. is for sale. Patent issued July 29, 1890. For particulars address A. J. Delavigne, 119 Barracks St., New Orleans, La.

A business man who has visited nearly every town in the United States desires an agency for manufacturers or others having goods or machinery for sale. References. Address W. Y., box 132, Cheshire, Conn.

To make artistic pictures, read "Naturalistic Photography for Students of the Art." By P. H. Emerson. Second edition. 313 pages. \$2.00. E. & F. N. Spon, 12 Cortlandt St., New York.

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### HINTS TO CORRESPONDENTS.

- HINTS TO CORRESPONDENTS. Nomes 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 otice. Price 10 cents each. Books referred to promptly supplied on receipt of price.

Winerals sent for examination should be distinctly marked or labeled.

(2330) J. E. C. asks: Is there any paint that will stand soap and water, to be used for advertising on window glass? A. Good linseed oil and white lead give a basis for a paint that will stand. Any paint will gradually succumb to the friction and rubbing incidental to washing. Use care in cleaning the glass.

(2331) D. & G. write: We have made a dynamo as per instructions in SUPPLEMENT, No. 600, and wish to ask the following questions : 1. In Fig. 1 rspective view) the field magnet wire Spence hot water heater, illustrated.-Improved Is No. 1, on leg A, the outside end of the first coil wound? No. 2 the second, and so on? A. Yes. 2. Is No.8 on leg B the outside end of first coil? No. 7 the second coil wound, and so on? A. Leg B is wound in the same manner as leg A, 1 being the first coil, 2 the second, and so on. 3. On page 9588, lower part of right hand column, it reads (to connect as shunt): "Terminal 1 of leg A 1s connected with one of the commutator brushes, 2 is connected with 5, 3 with 6, and 4 with 7;" does this mean that all the above numbers are on leg A? A. Yes. 4. Resistance must be placed between one of the terminals of magnet and the commutator brush. Does this mean to place it between one of the rods that run to top of field magnets and the brush to which it connects? A. This resistance may be inserted in any part of the field magnet circuit. 5. Will the machine run as well in either direction connected as a shunt machine, provided the brushes are arranged to run in such direction? A. Yes; provided suitable switches are furnished for changing the current. (2332) W. F. O. asks for a recipe for making mahogany stain, something that could be applied to wood without graining. A. Use a decoction of logwood, 2 ounces to the pint of water, containing 1/2 ounce chloride of barium.

SECTIONAL COAL TRUCK.-George A. Thompson and Daniel E. Harris, Brooklyn, N. Y. This is a truck or cart having tracks on its bottom and skids hinged to one end, which may be inclined and serve as track continuations, in combination with bins having each wheels that rest on the tracks, a folding tongue, a hopper bottom, and a sliding discharge gate.

GRAIN HULLER AND SCOURER. - Job Short, St. Louis, Mo. This is a machine in which the grain passes through and is hulled in an upper cylinder, passing thence to a lower cylinder, where roughened disks with teeth operate to complete its cleaning, which is finished by a spiral steel brush which conveys it to the final discharge pipe.

SPOOL HOLDER.-Silas G. Knight, St. John, Newfoundland. This is a rectangular bracket frame bent from a single piece of wire, in combination with a stiffening guard plate and a spring-securing pin. forming a simple and convenient device whereby spools

The well known author of other works on technology here gives his attention to the manufacture of paper While it is treated largely from an English standpoint yet it is brought well abreast of modern practice, and its many illustrations, extensive table of contents, and index make it of value to all progressive paper makers. Several useful tables and a bibliography are included.

RAILROAD ENGINEER'S FIELD BOOK AND EXPLORER'S GUIDE. By H. C. God-win. New York : John Wiley & Sons. 1890. Pp. xii, 358.

The type of book of which this is an example is well epresented by it. The author describes it as his aim to supply a real want, viz., that of a field book which can be carried on the ground for reference at any time. He seems to have carried out his design very well, and by the addition of the necessary tables has made it a work that will be very useful for reference in road surveying.

SEMITIC PHILOSOPHY. Showing the ultimate social and scientific outcome of original Christianity in its conflict with surviving ancient heathenism. By Philip C. Friese. Chicago : S. C. Griggs & Company. 1890. Pp. 247.

The carpenter.—Fire clay in Montana.—The sliding blinds, illustrated. - Prepared building paper. - An improved separator and trap for steam boilers, illustrated. - Lyle's storm and screen door. illustrated .- A sheet copper statue thirty-five feet high, illustrated .- A boiler for greenhouses, dwellings, etc., illustrated.-An efficient ventilating fan, illustrated .- An improved door hanger, illustrated. - Taste in selecting paint.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages ; forming, practically, a large and splendid MAGAZINE OF ARCHITEC TURE, richly adorned with elegant plates in colors and with fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

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(2333) G. R. L. asks for a receipt for a liquid stove polish that will dry quickly and leave a bright polish. A. Mix 2 parts copperas, 1 part powdered bone black, and 1 part black lead with enough water to give proper consistency (like thick cream) Two applications are to be recommended

(2334) H. R. B. asks how to make the flexible pad composition that is sold for notes. A Dissolve the best quality of glue in water, and add of glycerine one-fifth the weight of the dry glue.

(2335) W. P. S. asks: What is the best cement for fastening leather to wood? Is leather to cover a bex tightly put on while wet? A. Use a mixture of flour paste and glue. Apply the leather dry.

(2336) A. G. E. asks how much hydro gen gas is liberated by one pound of sulphuric acidin water acting on iron. A. One forty-ninth pound, meauring 6673 cubic inches. This supposes pure sulphuric acid or oil of vitriol to be used.

(2337) E. E. R. asks: 1. Can you give meanvreceipt for perfume so it will mix intimately with melted paraffine and the perfume be lasting when the paraffine is cold and cut into tablets? I have two receipts now, one the odor is not agreeable, and the other, while pleasant, does not last. A. Oil of bergamot 4 parts, do. lavender 2 parts, do. cloves 1 part, do. neroli 1/2 part. Many others could be given. 2. Can you not give me a receipt for making sachet powder to put in sachet bags, to perfume drawers, etc.? A. There are many formulas. The following is for patchouly : Ground patchouly herb 2 pounds, do. rhodium 💥 pound, do. orris root 1 pound, do. benzoin 1/4 pound, oil of patchouly 1 drachm, oil of rose 20 drops. 3. I want tern slide without the aid of sensitized plates. A. a receipt both in liquid and dry state (if possible) to make an ink eraser. I use chloride of lime dissolved in water and acetic acid, but the mixture loses its strength, when bottle has been used several times, from exposure to the air, and renders it not very desirable as an article of commerce, causing buyers to pronounce it a fraud. A. Use oxalic and citric acids mixed, or use binoxalate of potash. These are solids, but can be used in solution

(2338) R. McK. asks: 1. What is the best thing for the removal of freckles? A. Nothing really efficacious except corrosive applications can be given. Even such are apt to have only a transitory effect. 2. What acid is used for writing that is invisible when written, but which develops upon being heated? A. Dilute sulphuric acid with a gold or quill pen.

(2339) T. C. B. writes : I have a pound or so of protosulphate of iron which has been exposed to the air for some time, and which has become in- itically insoluble after it has once become set. A crusted with a white powder. Does this impair the use of the crystals, and if so in what manner? A. The white color may only indicate the loss of water of crystallization. It does not impair the substance except as it changes its weight. It may, however, be accomparied by oxidation, which would form basic and insoluble salts, requiring addition of acid for solution.

(2340) D. J. R. asks for a good receipt for a black walnut stain. A. a. A decoction of green walnut husks dried and boiled in lye is recommended. **b.** Dragon's blood and lampblack mixed in wood alcohol may be used, well rubbed into the wood. c. One gallon strong vinegar, 1 pound dry burnt umber, 1/2 pound fine rose pink, 1/2 pound dry burnt Vandyke brown. After mixing and standing for a day it is ready for use. Apply with a sponge.

(2341) P. W. asks how to make a sub stance which when burnt will give forth a strong hut pleasant odor or perfume, and if burnt in a room will perfume the room for two or three hours. A. Use following ingredients in powder: Charcoal 2 pounds, olibanum 1/2 pound, Tonquin beans, gum benzoin, allspice, cinuamon, cloves, and nitrate of potash 34 pound of each. Make into a mass with gum tragacanth in solution in water and form in moulds or with the fingers. Several others could be given.

(2342) E. D. writes: In your issue of May 17, 1890, in answer to question 2179 (J. L. S.), you give a formula for removal of soot stains from granite, I tried it, and it removed the soot stains, but left a stain of light green, probably from the sulphate of copper. What will remove that? A. Try ammonia on a small portion. If it turns it blue, copper is present, and sponging with ammonia will tend to remove it. Ex periment on a small portion to test the efficacy of the treatment. Weak muriatic acid should also be effectual and might very properly be used as a second applica tion to follow the ammonia.

(2344) Philwood writes : 1. I noticed in an old SCIENTIFIC AMERICAN that a windmill would not do to run a dynamo, on account of its fluctuating motion. If the windmill was so governed that it would run ata uniform rate, would it do to run a dynamo? A. Yes; if the mill could be kept going at a high enough rate of speed. 2. If the wind should suddenly fall away so that the mill stopped entirely, would it harm the material working of the dynamo? A. The dynamos would cess. cease to develop electric energy. The current would stop. No harm would be done. 3. What are the best works on electroplating that you would advise a beginner to get and which would explain everything in clear language? A. Read our SUPPLEMENTS, treating of this subject, especially No. 310. (2345) D. B. asks if honey bees make honey from flowers, or if they make only what is called bee bread from flowers. A. Bees extract honey from flowers, taking it into their stomachs and disgorging it into comb in the hives. The hairs upon their body accumulate pollen, which the bee pours into little pellets, and which is called "bee bread." The adults eat honey, the larvæ eat " bee bread."

tive sources, of the "carp"-praise and utter condemnation. What is the fact? A. The quality varies with the circumstances of its cultivation and environment. Hence widely different opinions have been ex pressed concerning it. It should furnish an excellent food if properly treated. 3. Did the so-called "German carp" originate only in Germany? A. It originated in Central Asia, was introduced into Europe some centuries f ago, and came to the United States via Germany. The whole subject of its history, qualities, and cultivation is admirably given in a paper in our SUPPLEMENT, No. 420.

(2347) T. E. M. asks: 1. About how many volts would it take to kill a rat? A. The voltage required to kill a rat might for the alternating current be put at 200 or 300 volts. It is uncertain, and will vary with circumstances. 2. How is bottled soda water made that is sold by confectioners? A. By charging the proper mixture of sirup and water with carbonic acid gas by special apparatus.

(2348) W. J. M. asks : How can I cut off the head and neck of a large glass bottle such as chemicals are put in, without too much expense? It is two feet high and nearly as much in diameter, and I wish it cut as smooth as possible. A. There is a certain amount of risk in doing this. File a notch on the line and hold a red hot wire against the glass, moving it back and forth along the line for the cut. When a crack starts you can lead it around with the hot wire. Tie a string or spring a rubber band around the bottle as a mark. Success is doubtful.

(2349) C. E. E. asks how to transfer a woodcut picture from the paper to the glass of a lan-Soak the picture in water. Varnish the plate of glass with dammar varnish or Canada balsam. When just tacky," remove the picture from the water and place it face downward on the varnish side of the glass, gently rub it on, seeing that no air bubbles are left between paper and varnished glass. Let it dry until perfectly hard. Then with the wet finger tip rub off the paper until little more than the design is left. Varnish a second time and allow to dry. The result is apt to be either too pale or too obscure.

(2350) A. A. D. writes : I would like to have a receipt for a glossy black ink, one that would be suitable for writing on labels which are exposed to sunlight. I have tried many of the formulæ which have been published, but the inks soon fade. A. Use best China ink rubbed up in a solution of shellac in borax

water (2351) W. A. A. asks if anything can be added to silicate of soda (water glass) to render it prac-Nothing of the sort is known. 2. Can anything be added to make it more waterproof when worked as a varnish? A. No. 3. Do you know of any cheap flexible cement that does not contain rubber or rubber or gutta percha? A. Not that is of any value. 4. Has the evolution of hydrogen gas from water by electrolysis ever been made of practical use as a heat-producing agent? Why could it not be done ? Could not the electric current be supplied by a dynamo? Would it be necessary to acidu late the water? A. No. It is absurd to attempt it, as the original heat energy expended in driving the dynamo will exceed by far that supplied by combustion of the hydrogen. The water must be acidulated.

(2352) T. D. G. asks: 1. What is the remedy for perspiration of a disagreeable odor? I under stand it is caused by the presence of some peculiar acid in the blood or circulatory system. Can the disagreeable odor be removed without effecting the amount of perspiration? What will do it? A. The cause cannot be broadly stated. A physician should be consulted for each case. The following powder is a useful local application (for external use only): Subnitrate of bismuth and salicy lic acid of each 1 part, starch powder 2 parts. 2. Is hard water considered more healthful than soft water? What is the best method for rendering hard water soft for washing purposes? A. Soft water is considered the best and most healthful. Hardness may be due to sev eral causes. If caused by the presence of bicarbonate of lime, boiling will remove it.

(2353) X. X. asks for any cheap and practical method of keeping milk, butter, etc., cool without ice, either by evaporation or otherwise. A. By placing the article in a metallic vessel wrapped with cloths and kept wet, a slight cooling will be effected, es pecially on a dry and windy day.

(2354) H. W. E. D. asks: What is the name of the skin you find inclosed, and where it can be purchased. A. It appears to be gold beater's skin, and s sold by druggists

(2355) R. A. asks what shape a base ball curver is, and what it is made of. A. The base ball is curved by the pitcher, without any appliance. The subject has been discussed in this journal, with illustrations and explanations of the position of hand, body, etc. Attempts have been made to invent an apparatus for the hand, but have had little or no suc-

## TO INVENTORS

Chair. See Barber's chair.

	:
Air brake, automatic, G. B. Williams	431.790
Air engine, J. Ericsson	431,729
Alarm. See Boiler alarm. Fire alarm.	
Aluminum, making, C. Netto	431.912
Anchor, post, J. D. Smith	
Animal trap, C. W. Smith	
Axle box, car. R. Brewer	
Axle lubricator, car, H. M. Goodman	
Bag and twine holder, C. A. Marshall Bag holder, Chase & Seaton	
Baling press, C. Woulf	
Ballot, L. C. Lindeman	431,600
Barber's chair, Knecht & Schlesinger	
Barrels, etc., closure for, L. L. Frierson	
Barrel hoop, J. F. Rich	
Basket, feed, J. H. Williams	432,006
Batteries, forming porous pots for voltaic, C. R.	491 60
Goodwin Battery. See Galvanic battery.	491,508
Bearing, propeller shaft, W. Z. Gaffield	431.690
Bed, folding, H. S. Hale	
Bed folding. C. J. Sundback	
Bed warmer, J. Kinney	431.813
Bedbug trap, Linder & Carlson	431.815
Bedstead, metallic cot. G. M. Lortz	
Bell mechanism, door, A. F. Rockwell	
Bicycle, N. N. Horton	
Bicycle saddle, A. L. Garford Bicycle stand, H. J. Curtis	
Bit. See Bridle bit.	1011130
Blasting, J. A. Kurtz	431.747
Block. See Ceiling block. Wagon block.	
Blower and exhauster for air or other gases, C.	1
Fiesse	
Body ventilator, J. E. Butts	
Boiler, J. E. Leighton	
Boiler alarm, D. Focer Bookcase and desk, knockdown, L. S. Hayes	431,885
Book cover, G. Cornwall	431,876
Book cover, G. Cornwall	431,876
Book cover, G. Cornwall Boot or shoe, L. M. Nute Boots or shoes, composition for the soles of, W.	431,876 431,990
Book cover, G. Cornwall	431,876 431,990 431,646
Book cover, G. Cornwall Boot or shoe, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick Box. See Axle box. Sand box.	431,876 431,990 431,646 431,767
Book cover, G. Cornwall Boots or shoe, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick. Box. See Axle box. Sand box. Box nailing machine, J. Casey	431,876 431,990 431,646 431,767
Book cover, G. Cornwall Boots or shoes, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgleal brace.	431,876 431,990 431,646 431,767 431,964
Book cover, G. Cornwall Boot or shoe, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgleal brace. Brace for excavations, W. J. Dunn	431,876 431,990 431,646 431,767 431,964
Book cover, G. Cornwall Boots or shoes, Cumposition for the soles of, W. A. Burrows Bottle stopper, O. Elck. Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgleal brace. Brace for excavations, W. J. Dunn Bracket. See Locomotive lamp bracket.	431,876 431,990 431,646 431,767 431,964
Book cover, G. Cornwall Boots or shoes, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgical brace. Brace for excavations, W. J. Dunn Bracket. See Locomotive tamp bracket. Brake. See Air brake. Vehicle brake.	431,876 431,990 431,646 431,767 431,964
Book cover, G. Cornwall Boots or shoes, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Elck Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgleal brace. Brace for excavations, W. J. Dunn Bracket. See Locomotive lamp bracket. Brake. See Air brake. Vehicle brake. Brake beams, machine for forming metallic, R.	431,876 431,990 431,646 431,767 431,964 431,689
Book cover, G. Cornwall Boots or shoes, L. M. Nute Boots or shoes, composition for the soles of, W. A. Burrows Bottle stopper, O. Eick Box. See Axle box. Sand box. Box nailing machine, J. Casey Brace. See Surgical brace. Brace for excavations, W. J. Dunn Bracket. See Locomotive tamp bracket. Brake. See Air brake. Vehicle brake.	431,876 431,990 431,646 431,767 431,964 431,689 431,545
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909
Book cover, G. Cornwall         Boots or shoes, composition for the soles of, W.         A. Burrows         Bottle stopper, O. Elck.         Botx See Axle box. Sand box.         Box nailing machine, J. Casey         Brace for excavations, W. J. Dunn         Bracket. See Locomotive lamp bracket.         Brake. See Air brake. Vehicle brake,         Brake beams, machine for forming metallic, R.         W. Bayley         Breast strap, slide, and snap, combined, Johnson & Reichert.	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589
Book cover, G. Cornwall         Boots or shoes, L. M. Nute         Boots or shoes, composition for the soles of, W.         A. Burrows.         Bottle stopper, O. Elck.         Botx See Axle box. Sand box.         Box nailing machine, J. Casey.         Brace. See Surgleal brace.         Bracet for excavations, W. J. Dunn         Bracket. See Locomotive lamp bracket.         Brake. See Air brake. Vehicle brake.         Brake beams, machine for forming metallic, R.         W. Bayley.         Bread pan. G. P. Mitchell.         Breads strap, slide, and snap, combined, Johnson & Reichert.         Bridge gate, J. P. Maloney.	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,817
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,545 431,545 431,909 431,589 431,889 431,817 431,760
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck.</li> <li>Botx. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace for excavations, W. J. Dunn</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley</li> <li>Breast strap, slide, and snap, combined, Johnson &amp; Reichert.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Broiler or toaster, W. Brooks.</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,817 431,750
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, Cumposition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Eick</li> <li>Botx. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace See Surgleal brace.</li> <li>Bracket. See Locomotive Iamp bracket.</li> <li>Braket. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley</li> <li>Bread pan. G. P. Mitchell.</li> <li>Breast strap, slide, and snap, combined, Johnson &amp; Reichert.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Bridle bit, W. R. M. Wheeler.</li> <li>Brush, G. A. Barnes</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,545 431,909 431,589 431,817 431,760 431,566
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, Composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck</li> <li>Botx. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace See Surgleal brace.</li> <li>Brace for excavations, W. J. Dunn</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley</li> <li>Bread pan, G. P. Mitchell.</li> <li>Bridge gate, J. P. Maloney</li> <li>Bridge gate, J. P. Maloney</li> <li>Broiler or toaster, W. Brooks</li> <li>Brush, G. A. Barnes</li> <li>Brush filings, tie plate for, S. K. Hawkins</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,545 431,809 431,550 431,866 431,870 431,866
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, Composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck</li> <li>Botx. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace See Surgleal brace.</li> <li>Brace for excavations, W. J. Dunn</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley</li> <li>Bread pan, G. P. Mitchell.</li> <li>Bridge gate, J. P. Maloney</li> <li>Bridge gate, J. P. Maloney</li> <li>Broiler or toaster, W. Brooks</li> <li>Brush, G. A. Barnes</li> <li>Brush filings, tie plate for, S. K. Hawkins</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,589 431,580 431,560 431,866 431,770
Book cover, G. Cornwall         Boots or shoes, L. M. Nute         Boots or shoes, composition for the soles of, W.         A. Burrows         Bottle stopper, O. Eick         Box. See Axle box.         Box nailing machine, J. Casey.         Brace. See Surglcal brace.         Bracket. See Locomotive iamp bracket.         Braket. See Air brake.         Brake beams, machine for forming metallic, R.         W. Bayley.         Bread pan. G. P. Mitchell.         Breaket strap, slide, and snap, combined, Johnson & Reichert.         Bridge gate, J. P. Maloney.         Broiler or toaster, W. Brooks.         Brush, G. A. Barnes         Brush fillings, tie plate for, S. K. Hawkins.         Buckle, J. P. Harris.         Buckle, Suspender, G. B. Pilkington	431,876 431,930 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,889 431,817 431,760 431,866 431,770 431,946 431,992
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,899 431,817 431,860 431,550 431,870 431,946 431,970
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, Composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck.</li> <li>Bottle stopper, O. Elck.</li> <li>Bottle stopper, O. Elck.</li> <li>Box. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace See Surgleal brace.</li> <li>Bracket. See Locomotive tamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley</li> <li>Bread pan, G. P. Mitchell.</li> <li>Breidge gate, J. P. Maloney</li> <li>Bridge gate, J. P. Maloney</li> <li>Broiler or toaster, W. Brooks.</li> <li>Brush, G. A. Barnes</li> <li>Brush fillings, tie plate for, S. K. Hawkins</li> <li>Buckle, suspender, G. B. Pilkington</li> <li>Burner. See Gas burner.</li> <li>Cable roads, chain grip for, W. Heckert</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,589 431,589 431,586 431,976 431,946 431,942 431,942 431,958 431,658
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, L. M. Nute</li></ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,559 431,817 431,760 431,866 431,770 431,946 431,992 431, <b>6</b> 58 431,680
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,876 431,876 431,876 431,870 431,866 431,970 431,658 431,658 431,906
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck.</li> <li>Bottle stopper, O. Elck.</li> <li>Bottle stopper, O. Elck.</li> <li>Bottle stopper, O. Elck.</li> <li>Brace See Surgleal brace.</li> <li>Brace for excavations, W. J. Dunn.</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley.</li> <li>Breaat strap, slide, and snap, combined, Johnson &amp; Reichert.</li> <li>Bridle bit, W. R. M. Wheeler.</li> <li>Broiler or toaster, W. Brooks.</li> <li>Brush, G. A. Barnes</li> <li>Brush, flilings, tie plate for, S. K. Hawkins.</li> <li>Buckle, suspender, G. B. Pilkington</li> <li>Burckle, suspender, G. B. Pilkington</li> <li>Burcke, F. B. West.</li> <li>Cah forkerosene or other inflammable fluids, T.</li> <li>Medford.</li> <li>Can cable grip, B. F. Crow.</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,589 431,817 431,560 431,866 431,970 431,986 431,986 431,992 431,658 431,966 431,966 431,966
Book cover, G. Cornwall         Boots or shoes, composition for the soles of, W.         A. Burrows         Bottle stopper, O. Eick         Bottle stopper, O. Eick         Box See Axle box. Sand box.         Box nailing machine, J. Casey         Brace See Surgleal brace.         Bracet. See Locomotive lamp bracket.         Braket. See Locomotive lamp bracket.         Brake beams, machine for forming metallic, R.         W. Bayley.         Bread pan, G. P. Mitchell.         Breade patter, J. P. Maloney.         Bridge gate, J. P. Maloney.         Brush G. A. Barnes         Brush G. A. Barnes         Brush flings, tie plate for, S. K. Hawkins.         Buckle, suspender, G. B. Pilkington         Burner. See Gas burner.         Cable roads, chain grip for, W. Heckert.         Cable roads, chain grip for, W. Heckert.         Can for kerosene or other inflammable fluids, T.         Medford.         Car. cable grip, B. F. Crow.	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,817 431,760 431,589 431,877 431,978 431,866 431,770 431,986 431,688 431,680 431,992 431,658 431,992
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, L. M. Nute</li></ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,876 431,560 431,976 431,976 431,926 431,936 431,936 431,936
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Eick</li> <li>Bottle stopper, O. Eick</li> <li>Bottle stopper, O. Eick</li> <li>Box. See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace See Surgleal brace.</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake.</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley.</li> <li>Bread pan, G. P. Mitchell.</li> <li>Breads trap, slide, and snap, combined, Johnson &amp; Reichert.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Brush flings, tie plate for, S. K. Hawkins.</li> <li>Buckle, Suspender, G. B. Pilkington</li> <li>Burner. See Gas burner.</li> <li>Cable sheave, F. B. West.</li> <li>Can for kerosene or other inflammable fluids, T.</li> <li>Medford.</li> <li>Carcoupling, H. C. Buhoup</li> <li>Car coupling, H. C. Buhoup.</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,545 431,909 431,558 431,877 431,760 431,558 431,770 431,946 431,936 431,936 431,936 431,936
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, L. M. Nute</li></ul>	431,876 431,930 431,646 431,767 431,964 431,689 431,589 431,589 431,589 431,889 431,881 431,700 431,906 431,936 431,936 431,936 431,936 431,936
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck.</li> <li>Bott e stopper, O. Elck.</li> <li>Bott e stopper, O. Elck.</li> <li>Bott e stopper, O. Elck.</li> <li>Brace Axle box. Sand box.</li> <li>Box nailing machine, J. Casey</li> <li>Brace E se Surgleal brace.</li> <li>Brace for excavations, W. J. Dunn.</li> <li>Bracket. See Locomotive lamp bracket.</li> <li>Brake. See Air brake. Vehicle brake,</li> <li>Brake beams, machine for forming metallic, R.</li> <li>W. Bayley.</li> <li>Breaad pan, G. P. Mitchell.</li> <li>Breast strap, slide, and snap, combined, Johnson &amp; Reichert.</li> <li>Bridge gate, J. P. Maloneg.</li> <li>Bridle bit, W. R. M. Wheeler.</li> <li>Broiler or toaster, W. Brooks.</li> <li>Brush, G. A. Barnes</li> <li>Brush fillings, tie plate for, S. K. Hawkins.</li> <li>Buckle, suspender, G. B. Pilkington</li> <li>Burckle, Strame, F. B. West.</li> <li>Can forkerosene or other inflammable fluids, T.</li> <li>Medford.</li> <li>Car. cable grip, B. F. Crow.</li> <li>Carbon structures, composition for porous, C. R.</li> <li>Goodwin.</li> <li>Car coupling, H. F. Davis</li> <li>Car coupling, E. B. Goelet.</li> <li>Car coupling, H. Gallager.</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,817 431,560 431,866 431,970 431,986 431,932 431,658 431,936 431,936 431,936 431,638 431,638
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,545 431,890 431,545 431,946 431,946 431,946 431,936 431,936 431,936 431,936 431,638 431,638 431,638
<ul> <li>Book cover, G. Cornwall</li> <li>Boots or shoes, composition for the soles of, W.</li> <li>A. Burrows</li> <li>Bottle stopper, O. Elck.</li> <li>Bott estopper, O. Elck.</li> <li>Bott estopper, O. Elck.</li> <li>Box See Axle box. Sand box.</li> <li>Box nailing machine, J. Casey.</li> <li>Bracket. See Surglcal brace.</li> <li>Bracket. See Comotive lamp bracket.</li> <li>Braket. See Locomotive lamp bracket.</li> <li>Braket. See Air brake. Vehicle brake.</li> <li>Braket Air brake.</li> <li>Bread pan. G. P. Mitchell.</li> <li>Breads pan. G. P. Mitchell.</li> <li>Breads gate, J. P. Maloney.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Bridge gate, J. P. Maloney.</li> <li>Bridge is the plate for, S. K. Hawkins.</li> <li>Brush fillings, tie plate for, S. K. Hawkins.</li> <li>Buckle, J. P. Harris.</li> <li>Buckle, Suspender, G. B. Pilkington</li> <li>Burner. See Gas burner.</li> <li>Cable sheave, F. B. West.</li> <li>Car coupling, H. F. Davis</li> <li>Car coupling, H. C. Buhoup.</li> <li>Car coupling, H. C. Buhoup.</li> <li>Car coupling, H. Gallager.</li> <li>Car coupling, H. Gallager.</li> <li>Car coupling, H. Gallager.</li> <li>Car coupling, H. Gallager.</li> <li>Car coupling, H. J. Layman</li> </ul>	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,589 431,817 431,760 431,866 431,770 431,992 431,858 431,658 431,936 431,936 431,936 431,768 431,644 431,683 431,775
Book cover, G. Cornwall	431,876 431,990 431,646 431,767 431,964 431,689 431,545 431,909 431,545 431,589 431,589 431,589 431,589 431,876 431,906 431,936 431,936 431,936 431,688 431,683 431,683 431,683 431,683 431,683

	Checkrein safety loop, J. O'Brien	431.672
An experience of forty years, and the preparation of the	Cigar rolling apron, F. C. Miller	431,908
ents at home and abroad, enable us to understand the two and practice on both continents, and to possess un-	Clipping machine, hair, Cook & Hinds	
qualed facilities for procuring patents everywhere. A ynopsis of the patent laws of the United States and all	Clock, alarm, A. M. Lane Closet. See Dry closet.	
oreign countries may be had on application, and persons ontemplating the securing of patents, either at home or	Cloth cutting machine, W. S. Salisbury431,998, Collar fastener, horse, P. T. Bradley	
broad, are invited to write to this office for prices, hich are low, in accordance with the times and our ex-	Collar, horse, A. Charles	4:31,558
ensive facilities for conducting the business. Address 1UNN & CO office SCIENTIFIC AMERICAN, 361 Broad-	Compound engine, S. M. Vauclain	431,860
ay, New York.	Conduit, T. Wallace Conveying service apparatus, J. C. Martin	431.666
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Bridle bit, W. R. M. Wheeler	Fire extinguisher, C. M. Martin Fire extinguisher, automatic, F. Grinnell431,971,	431,950
Brush, G. A. Barnes         431.866           Brush fillings, tie plate for, S. K. Hawkins         431,770		431,985
Buckle, J. P. Harris	Frame. See Window frame.	
Burner. See Gas burner. Cable roads, chain grip for, W. Heckert 431,658	Furnace, M. E. Alley. Furnaces, device for supplying superheated steam	431,928
Cable sheave, F. B. West 431,680 Can forkerosene or other inflammable fluids, T.	to, M. E. Alley	431,682
Medford	Galvanic battery, C. R. Goodwin Game, P. Bosche	431,742
Carbon structures, composition for porous, C. R. Goodwin	Game, F. W. Samuels Game counter, M. Hofheimer	431,727
Car coupling, H. C. Buhoup	Garment supporting hook, C. A. Whitcher Gas, apparatus for the manufacture of, W. T.	
Car coupling, E. B. Goelet		
2ar coupling, G. Highfield	Gate. See Bridge gate. Flood gate. Mixing ma-	101,110
Car coupling, C. Lenhart	Gate, J. E. Bourne	
Car coupling, U. Snyder	Gate, J. Gunder Gate fastening, wire, J. M. Harnish	431,579
Car coupling and uncoupling device, McWhirter & Scheble	Gate for drawbridges, etc., C. R. Brothwell	431.838
Car door, W. J. Walker	Glassware, apparatus for the manufacture of,	
Car heater, street, H. W. Libbey 431,947		431,785
Car, railway, E. M. Bentley	Grease cup, E. H. Benners	
Car wheel, C. G. West	breech-loading, P. Mauser	
Cars provided with intermediate trucks, means for facilitating the uncoupling of, W. H. Mar-	Guns, shell extractor for bolt, P. Mauser431,669, Hair and wig, J. Y. Borden	431,837
shall	Halter, G. J. Walbridge	431.828
Carrier. See Pneumatic dispatch tube carrier.	Hame, C. E. Carr.	431,550
Carrying and power cable apparatus, L. H. Good-	Handle. See Tool handle.	
Carrying and power cable apparatus, L. H. Good- win	Hanger. See Trolley wire hanger. Harrow, spring tooth, C. La Dow	
Carrying and power cable apparatus, L. H. Good- win	Hanger.         See Trolley wire hanger.           Harrow.spring tooth, C. La Dow         Harrow.spring tooth, C. La Dow           Harrow.tert, corn, Gibbs & Boozer         Harvester reel support, J. A. Graham	431,576 431,970
Carrying and power cable apparatus, L. H. Good- win	Hanger. See Trolley wire hanger.         Harrow.spring tooth, C. Ja Dow         Harvester, corn, Gibbs & Boozer         Harvester reel support, J. A. Graham         Hatchway gates, device for operating elevator, C.P. Stanford	431,576 431,970 431,676
Carrying and power cable apparatus, L. H. Good- win	Hanger. See Trolley wire hanger.         Harrow, spring tooth, C. La Dow         Harvester, corn, Gibbs & Boozer         Harvester reel support, J. A. Graham         Hatchway gates, device for operating elevator,         C.P. Stanford.         Hay loader, Hunter & Lakin         Headlight, locomotive, W. J. Burke	431,576 431,970 431,676 431,585
Carrying and power cable apparatus, L. H. Good- win	Harger. See Trolley wire hanger.         Harrow.spring tooth, C. La Dow	431,576 431,970 431,676 431,585 431,872
Carrying and power cable apparatus, L. H. Goodwin.       431,945         win	Hanger. See Trolley wire hanger.         Harrow.spring tooth, C. La Dow	431,576 431,970 431,676 431,585 431,872 431,924 431,924 431,588
Carrying and power cable apparatus, L. H. Good- win	Hanger. See Trolley wire hanger.         Harrow.spring tooth, C. La Dow	431,576 431,970 431,676 431,585 431,872 431,924 431,588 431,546

(2346) I. S. asks: 1. What is the cause and cure, in the case of young persons in apparent perfect health, sound teeth, of temperate, abstemious, indus trious habits, addicted to no abuse, exhaling a disagreea ble breath? A. Possibly dyspepsia. A physician should be consulted. 2. We constantly see the most opposite opinions in public journals, from equally authorita-

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