

alcohol, naphtha, benzol, benzin and gasoline; and consists in adding sodium hydrate, wood-alcohol, stearin and resin (colophony) to the hydrocarbon to be solidified. The product can be handled, packed, shipped and used with absolute safety.

**Railway Improvements.**

**RAILROAD CROSSING.**—E. J. O'NEILL, Ada, Ohio. Mr. O'Neill's invention is an improvement in railroad crossings, having for an object to provide a simple construction whereby there is furnished a continuous track in one or the other direction of the crossing, by means of swinging rail sections and by which the swinging rail sections are locked in their different adjustments. The invention dispenses with breaks in the rails at the crossing, and thus avoids the blows of the wheels, which result in much damage, not only to the rails and wheels, but to other portions of the cars.

**Vehicles.**

**MEANS FOR LOCKING THE STEERING MECHANISM OF MOTOR-VEHICLES.**—E. DEVLIN, Paterson, N. J. The invention of Mr. Devlin pertains to improvements in means for locking the steering-gear of motor-driven vehicles of any kind, and this design is adapted for use in connection with the steering-gear of such vehicles as automobiles, locomobiles, and wagons or carriages of any description used for pleasure or business purposes, and which may be propelled by electrical energy, steam, gas, gasoline, or any other agent or motive power. The essentially new feature of the contrivance is a device for locking and holding with positive certainty the steering gear against turning accidentally.

**Miscellaneous.**

**CAN-OPENER.**—JAMES M. NETTLES, Shubuta, Miss. This implement will readily and easily open oyster, sardine, and other tin cans. It is claimed for the device that it is entirely different from any other can opener, both in the manner of its construction and its use, there being no danger of cutting the hand with the can opener or the tin while in operation.

**EGG-TESTER.**—J. CARLEN, Havana, N. D. An improved device for testing eggs has been invented by Mr. Carlen. The device comprises a tray, a casing therein adapted to receive the lamp, a dark chamber at one side of the casing, and a sight tube leading into this dark chamber. Means are provided for carrying the eggs through the dark chamber where they are examined through the sight tube.

**WORT-COOLER.**—A ZIGER, Brooklyn, N. Y. An apparatus for cooling wort as it comes from the kettles in the brewery is provided by this invention. It embodies certain novel features of construction, which enable it to be used not only as a wort-cooler, but also as a strainer to remove the hops from the wort, thus permitting the wort to be run directly from the cooler into the fermenting room, and dispensing with the necessity of the "hopper jack" which has heretofore been used.

**DRY-COMPOUND FIRE-EXTINGUISHING TUBE.**—A. and T. R. HOPPER, Highland, N. Y. The tube or receptacle is so constructed that it will not allow the compound to fall in large masses and thus exert but little influence on the fire, but which, through the action of the hand in throwing the material from the tube in conjunction with a diffusing device at the mouth of the tube, will produce a large quantity of well-diffused powder resulting in a greater generation of fire-extinguishing gas.

**SPRINKLER-HEAD.**—J. K. S. RAY and W. D. McNEILL, Whitire, S. C. The invention relates to fire extinguishers arranged to release a valve having thermal-action at a predetermined temperature. The sprinkler head is so constructed as to insure a free flow of water whenever the fusible brace is melted and even in case the valve should stick at one point owing to undue corrosion, sediment, or other causes.

**INDICATOR DEVICE FOR DRIP-PANS.**—F. E. WIENSER, Washington, D. C. Mr. Wiesner's invention is an improvement in the indicating devices for drip pans, designed especially for use in connection with refrigerators, and by which to indicate the height of water in the drip pan at one side of the refrigerator.

**CAR-REPLACER.**—A. R. BATCHELDER, Portsmouth, N. H. In the embodiment of this improved car replacer two members of peculiar construction and connected by a special hinged joint are employed. One member rests upon, and is locked to the track; the other serves to guide the car wheel from its derailed position back to the track rail.

**GARMENT-SUPPORTER.**—L. WERTHEIM, New York, N. Y. This improvement relates to a hose-supporter which is suspended from the waist of the user. The object of the invention is to supply an effective supporter which may be very quickly applied and removed and which will also serve somewhat the purposes of an abdominal pad. When once in position the device will securely support the garment.

**FLOATING FISH-TRAP.**—A. C. BURDICK, Seattle, Wash. This invention provides a floating fish-trap adapted especially to be towed or drawn by steamers or like vessels. The trap

is so constructed that a single heart only is used in connection with the pot, which heart extends over the seine. The pot is yieldingly supported upon scows or like floats in such a manner that the rocking of the scows by action of waves will not have any harmful influence upon the proper equilibrium of the pot. The invention also provides means whereby independent inlets are obtained over the seine, one at each side of the heart, and a pocket in connection with each inlet, the pockets and inlets serving to direct fish through the heart and into the pot. By inclining the bottom of the pot and its supports from the rear upwardly and forwardly the pot and supports will ride the current and waves, and not tow under.

**TEMPLE AND SPRING-CLAMP FOR LENSES OR THE LIKE.**—E. L. LEMBEKE, New York, N. Y. The object of the present invention is to provide a new and better temple and spring-clamp for spectacles and eye-glasses which is simple and durable in construction, cheap to manufacture, and arranged for convenient, quick, and secure attachment to or removal from the lens without requiring apertures and bolts, pins, or similar fastening devices. The clamps on eye-glasses are fixed so that they take up little room at the sides of the lenses, and are not in the least unsightly or cumbersome.

**TRUCK-WAGON.**—E. H. TYLER, New York, N. Y. The improvement in this new contrivance relates to truck-wagons—that is, wagons used for hauling building materials, safes, barrels, boxes, freight, etc., and which are provided with depending trucks upon which materials are to be loaded. All objects which it is desired to handle practically on the ground, may be readily loaded into a truck, even when the wagon is at another place. As the trucks are flat and rest on the ground, goods can be loaded, practically on the ground. No skids or bridges are necessary, and no merchandise can be broken or injured while loading or unloading.

**WATCH-PROTECTOR.**—D. SUMMA, New York, N. Y. This contrivance relates to watch-protectors—that is, to devices for preventing the loss of a watch by theft or otherwise while worn upon the person. In using this invention, the chain is threaded through the ring and placed in the pocket in the usual manner. Should the chain be violently drawn by any means, the watch is lifted upward to a certain extent in the pocket, but remains therein because of the ring. The tension of the chain upon this ring causes the device to be raised slightly, and this movement imbeds the teeth in the cloth of the pocket. The harder the chain is pulled the more tightly will the teeth bite into the cloth, thereby drawing the owner's attention.

**SKIRT AND WAIST HOLDER.**—M. DISTELMAN, New York, N. Y. This patent refers to a skirt and waist holder for women's garments; and one object the inventor has in view is the provision of a simple and cheap article which is adapted to hold the lower portion of a dress-waist from pulling up and away from the dress-skirt and, further, the provision of an article which may be drawn and held tightly over the abdomen to secure the appearance or effect known as a "straight front," and a final object to provide means associated with the article for holding the skirt in proper place and against any tendency to drop at the rear portion.

**TAILPIECE AND BRIDGE FOR ZITHERS.**—F. REINHARD, Jersey City, N. J. The purpose of the inventor is to so construct a tailpiece for zithers and like musical instruments that the bridge may be combined with the tailpiece, and, further, to provide the tailpiece with tongues adapted to receive the loops of the strings, which tongues are in the same plane with the surface from which they are struck out, the material around the tongues being pressed inward in conical form. Thus the loops of the strings when placed upon the tongues are protected, and prevented from opening, pins are done away with, space is saved, and the tone of the instrument is improved.

**CANOPY-SUPPORT.**—J. MUEFUR, Aspen, Col. The improvement in this patent is on canopies for use on beds, tables, lounges, tables, or the like, or for application to vehicles, or on lawns. The canopy may be made of any suitable size, and can be used horizontally on lawns, beds, tables, carriages, or elsewhere, and when desired for shelter from the sun on lawns, it can be arranged vertically.

**TALLY DEVICE.**—L. L. FROST, Highland, Kan. This tally device is adapted for use in connection with check-books or with account-books, although it may be used generally in the addition or subtraction of figures. The object in view is the provision of a simple and efficient device by which the value of a given amount may be readily increased or diminished by the addition or subtraction of different amounts, such as constantly arise in commercial or business transactions. An increase in the value of the given amount can be quickly found by addition of a certain amount; but when a check is drawn against the bank account the device will indicate the amount charged against the account and the balance remaining to the credit of the depositor, thus denoting a decrease in the value of the original deposit.

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

**NEW BOOKS, ETC.**

**LABORATORY EXERCISES IN PHYSICS.** By George R. TWISS, B.Sc. New York and London: Macmillan Company. 1902. Pp. xiii, 193. Price 80 cents.

The experiments are selected and the directions written with regard to three purposes—first, to secure the thorough enforcement of some of the fundamental principles of the science, together with a view of the kind of thinking and experimentation by means of which the facts and principles of physics have been established; second, to develop habits of precision in observation, thought, and expression; and third, to train the student in the acquisition of practical power and skill in the use of apparatus. It must be acknowledged that Mr. Twiss has arranged his chapters in an ideally simple form. Each exercise begins with a clear and concise statement of its purpose. In drawing his inferences and reaching his conclusions the student is aided by directions which clear the path for him to a certain extent.

**UNTERSUCHUNGEN AUS DEM HYGIENISCHEN INSTITUT IN GRONINGEN. VERSUCH EINER NEUEN BAKTERIENLEHRE.** Von Dr. A. P. FOKKER, Haag. 1902. Pp. 49.

**THE FERN BULLETIN.** A Quarterly Devoted to Ferns. By George E. DAVENPORT. Binghamton, N. Y. 1902. Pp. 97-128.

**THE NEW INTERNATIONAL ENCYCLOPEDIA.** Daniel Coyt Gilman, LL. D., Harry Thurston Peck, Ph.D., L.H.D., and Frank Moore Colby, M.A., Editors. Vols. I. to VI. New York: Dodd, Mead & Co. 1902.

In the exceedingly brief space of this review, it is manifestly impossible to discuss with any degree of fullness so ambitious an undertaking as the publication of a new encyclopedia. That such a work has long been needed by the man who is at all familiar with the scientific matter contained in the encyclopedias that are now placed at his disposal, is evident enough when it is considered that the encyclopedias which make any pretense at scientific discussion are antiquated. A new encyclopedia should therefore be particularly strong in its treatment of scientific subjects; for in science, both pure and applied, the world has made its greatest strides within the last quarter of a century. We have, therefore, confined our attention to an examination of those portions of the six volumes which lie before us which deal more particularly with science. If the article on chemistry is to be considered a fair example of what this new work has to offer us, it cannot be denied that it supplies much that is wanting in other encyclopedias. In the twenty-one pages comprising the article in question, there will be found a very systematic presentation of the subject both from its philosophical, as well as from its more practical standpoint. Probably a discussion of radioactive compounds is to be included in the article on physics; for in no other way can we account for their omission here. Not the least commendable feature of the International Encyclopedia's method of discussing scientific subjects is the annexation of an excellent bibliography to each important article. The list of books on chemistry, for example, contains what may well be considered leading works by leading authors. The mathematical portions of the Encyclopedia seem exceptionally complete. As examples we may mention the discussion of the differential and integral calculus and of co-ordinates. The treatment of analytical geometry and conic sections, although fairly adequate, might have been somewhat fuller. An examination of the articles on engineering subjects shows that the editors have seen to it that both in mechanical and civil engineering the International Encyclopedia has adequately considered modern improvements. The treatment of bridges is particularly full. The illustrations, moreover, have been aptly selected, including as they do the typical arch bridge over the Niagara River, the typical cantilever bridge at Poughkeepsie and the steel truss bridge over the Delaware River. A picture of a suspension bridge might well have been inserted. We are glad to note that illustrations of rolling lift bridges also find a place in the article, perhaps for the first time in any encyclopedia. The author of the article on calorific engines has done his work well. His discussion includes what may well be considered the best types of hot air engines and is strictly modern in its treatment. We are glad to note that electrical subjects have been treated with the thoroughness that they deserve. On dynamo-electric machinery a very full article appears, which is both accurate in its presentation and illustrated by well-known modern types of machines. The article on electricity is good. The many cross references indicate that the later features of the subject, such as wireless telegraphy and the like, have not been neglected. Even the newer forms of lamps, such as the Nernst lamp and the vacuum tubes of Tesla and Cooper Hewitt, find a place in the sixth volume. A word or two on the general appearance of the book may not be out of place. To the matter of typography and illustrations the publishers have given exceptional care. The diagrams are clear, and the half-tone plates uncommonly good.

**Business and Personal Wants.**

**READ THIS COLUMN CAREFULLY.**—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. **MUNN & CO.**

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- Inquiry No. 3749.**—For makers of dock builders in the vicinity of Portland and Rockland, Me.
- "U. S." Metal Polish. Indianapolis. Samples free.
- Inquiry No. 3750.**—For makers of platinum sponge in large quantities.
- Coin-operated machines. Willard, 234 Clarkson St., Brooklyn.
- Inquiry No. 3751.**—For machinery for coloring and finishing lead pencils, also for embossing on same.
- Dies, stampings, specialties. L. B. Baker Mfg. Co., Racine, Wis.
- Inquiry No. 3752.**—For makers of small hot air engines.
- Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.
- Inquiry No. 3753.**—For makers of cheap Japanese music stands.
- Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.
- Inquiry No. 3754.**—For makers of invalids' hand-propelled tricycles.
- Manufacturers agricultural implements for export. Hobson & Co., 17 State Street, New York.
- Inquiry No. 3755.**—For a simple power to be used on a farm for cutting feed and pumping water.
- WANTED.**—Party to manufacture earthen railroad ties. Benj. H. Smith, Shippensburg, Pa.
- Inquiry No. 3756.**—For machinery for making boxes and packing cases.
- Let me sell your patent. I have buyers waiting. Charles A. Scott, Granite Building, Rochester, N. Y.
- Inquiry No. 3757.**—For parties engaged in boring artesian wells on a large scale.
- SAW MILLS.**—With variable friction feed. Send for Catalogue B. Geo. S. Comstock, Mechanicsburg, Pa.
- Inquiry No. 3758.**—For makers of water elevators for irrigating purposes, with steam power.
- Machinery designed and constructed. Gear cutting. The Garvin Machine Co., 149 Varick, cor. Spring Sts., N. Y.
- Inquiry No. 3759.**—For information as to air compressing machinery.
- FOR SALE.**—Broaching or drawing press at a bargain. Pratt & Whitney make. Samuel Hall's Sons, 229 West 10th Street, New York.
- Inquiry No. 3760.**—For a pipe cutter and threader for cutting and threading from 1/4 inch to 6 inches.
- Manufacturers of patent articles, dies, stamping tools, light machinery. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.
- Inquiry No. 3761.**—For makers of long and short distance telephones.
- Manufacturers' Advertising Bureau, New York. Trade mediums a specialty. Lowest known rates. References. Correspondence solicited.
- Inquiry No. 3762.**—For makers of a machine for striping marbles.
- Crude oil burners for heating and cooking. Simple, efficient and cheap. Fully guaranteed. C. F. Jenkins Co., 1103 Harvard Street, Washington, D. C.
- Inquiry No. 3763.**—For machinery for making paper folding boxes.
- The largest manufacturer in the world of merry-go-rounds, shooting galleries and band organs. For prices and terms write to C. W. Parker, Abilene, Kan.
- Inquiry No. 3764.**—For manufacturers of steel name stamps.
- The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.
- Inquiry No. 3765.**—For manufacturers of conveyors of every description.
- WATER POWER FOR SALE.**—Reliable 1,500 horse power located in State of New York. Owner would equip and rent power. Davidson, Box 73, New York.
- Inquiry No. 3766.**—For parties to manufacture in large quantities small pulleys of special dimensions.
- The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$5. Munn & Co., publishers, 361 Broadway, N. Y.
- Inquiry No. 3767.**—For machinery for making wooden faucets.
- Wishing to add a few desirable lines to a well-established manufacturing business, I should like to hear from inventors having good patents to sell. J. C. Christen. Main and Dock Sts., St. Louis, Mo.
- Inquiry No. 3768.**—For manufacturers of sheet metal in 10 karat gold, silver, etc.
- Wanted.**—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States, Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 73, New York.
- Inquiry No. 3769.**—For makers of steel curb link watch chains.
- FOR SALE.**—Sure money maker. About one-third interest is offered for sale to man possessing practical experience, a desire to take active, aggressive hold, and about ten thousand dollars to invest in a brass and iron specialty factory, which has been established seven years, and which has very valuable patents, and is never able to fill orders promptly owing to heavy demand by railroads and power plants all over the United States. Address Box 1754, Pittsburg, Pa.
- Inquiry No. 3770.**—For makers of vessels from wood pulp or paper.
- Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.
- Inquiry No. 3771.**—For the address of Messrs. Smith & Egge, makers of miniature sewing machines.