RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Charles E. Seabury, Stony Brook, N. Y. This device is designed to be simple, inexpensive, and automatic, whereby the cars may be coupled without requiring the train men to go between them, the coupling being also adapted to connect with the common link and pin drawhead.

CAR COUPLING. — Albert B. Evenden, Watertown, N. Y. This is a coupling also adapted for use with cars having the ordinary link and pin coupling, and with cars of different heights, the drawbar head having a hook or hooks upon its top, while there is a link secured to the head by a pin and slot connection and a joint in the link intermediate of its length, with other novel features.

CAR HEATER. — Charles O. Newton, Homer, N. Y. In accordance with this invention a hot air chamber extends under the entire floor space of the car, the steam pipe extending through such chamber under the central aisle, the exhaust pipe inclosing the steam pipe, and the invention covering various novel features of construction and combinations of parts.

Miscellaneous.

SAND BAND. — Humphrey Trembath, Evart, Mich. This is a guard for excluding sand, mud, and dust from the hubs of wheels and the spindles of axles, and has a hood in the form of a truncated cone with an open lower side, and large enough to allow the hub to revolve freely within without touching it, the hood being so hinged as to be freely raised for oiling, etc.

VEHICLE GEARING.—Paris Erb, Newport, Pa. This is an improvement in fifth wheel construction, the fifth wheel having its lower section provided with sockets or bearings and the clips having pivot studs or gudgeons adapted to fit in the bearings, whereby in descending a grade the vehicle will push forward and operate to tilt the axle back, and the shafts will be prevented from rising, and on a level or uphill grade the draught will turn the axle to hold the shafts up.

SLED KNEE. — John Ammon, Stoughton, Wis. This is a knee formed of plate metal, with upright, side, and top or crown portions, the upright portions being curved in cross section while the top or crown portion is curved or arched upward from side to side, the construction being designed to increase the strength and strain-resisting power of the knee.

BOB SLED.—Sven Legreid, Stoughton, Wis. This is an improvement designed to simplify and strengthen the rave attachment, the attachment having its base portion adapted to the upper end of a sled knee, and having its upright portions curved or arched in cross section, the attachment supporting the rave at its upper end, to which it inclines outward, and the beam being supported at its end therein.

NAIL KEG.—Henry E. Spilman, Spilman, West Va. This keg is composed of a transversely corrugated sheet metal cylinder, having detachable wooden heads made in sections, and adapted to be locked in end grooves formed by the corrugations, by being rotated about the axis of the keg.

MACHINE FOR HOOPING AND HEADING KEGS.—Theodore A. Cook, Brooklyn, N. Y. This machine has a header plate and a reciprocating upper table, in combination with a flange attached to the table to surround the barrel, a plate within the flange and spring-actuated hoop drivers pivoted therein. with other novel features, the machine being more especially designed for hooping paint kegs, etc.

VENTILATING BARREL. — John F. East, Norfolk, Va. This barrel is composed of a veneer blank cut through its middle, with transverse parallel slits, leaving the edges of the blank continuous or unsevered, while the middle portion is expanded to give the curve to the barrel and form ventilating openings.

BELT REPLACER. — Frank Balderson, Oketo, Kansas. This invention consists of a segment adapted to be clamped to the rim of the pulley and to project in line therefrom, a curved arm being pivoted to one end of the segment, the device being simple and durable, and calling for but little labor to place the belt on the pulley or wheel.

DISCHARGE VALVE FOR SEWER PIPES. —Charles H. Shepherd, New York City. This is an automatically operating valve designed to open under a given pressure of water, and close as soon as the water is discharged, the invention covering novel features of construction and arrangement of parts.

GRADING AND DITCHING MACHINE.—Rector M. Thompson, Crawford, Neb. This is a machine in which the scoop is designed to be expeditiously elevated when loaded, carried above the surface of the ground and readily dumped, there being a frame with an attached caster wheel at the rear of the scoop, taking the weight off the team and preventing dirt falling from the scoop when elevated and loaded.

MOTOR. — Frank L. Gilbert, Conroe, Texas. This is an actuating lever mechanism to be attached to a loose seat board mounted on an ordinary stool or high chair, and adapted to convert the slow downward movement of the seat when occupied by an operator into a rapid rotary motion for the running of a sewing machine or similar purpose.

OVEN SLIDE.—Harry T. Gilbert, Philadelphia, Pa. This invention consists of a hinged extension plate provided with a cam edge, a vertically arranged shaft having a cam arm adapted to engage the cam edge, and an arm secured on the shaft and operated on by the closing of the stove door.

SCRAPER FOR ROLLER MILLS. — John Harvey, Brooklyn, N. Y. This is a device for the removal of crushed grain from the rolls of a roller process mill, and is adjustable and non-abrasive in contact, while designed to be thorough in operation and avoid all danger of fire from its action on the rolls.

HORSE POWER APPARATUS. — Oscar Johnson, Lindsborg, and Nels A. Holtman, Smolan, Kansas. Combined with a revoluble platform having radial arms with tension or lock latches, and a belt or cable, are equalizing links to which draught attachments are pivoted, with other novel features, and whereby the team may be attached within the circle of the driving belt and near the outer end of the lever arm of the apparatus.

TELEGRAPHY. — Shirley M. English, New Orleans, La. This is an invention designed to overcome the defects of "light sending," and to insure a good connection at the contact points of the instrument, there being combined with a vertically swinging lever and a second lever actuated therefrom and connected with the main line, two pivoted arms connected with opposite poles of a battery, a spring insuring contact of the second lever with the arms.

VEHICLE SEAT LOCK. — Henry A. Lombard, Saco, Me., and John R. Rankin, Wells, Me. This is a device enabling the operator to conveniently place the seat in position without going between the wheels, and whereby the seat may be tilted without being disconnected, for convenience in loading the vehicle and to keep the seat dry when not in use.

GLAZED STRUCTURE. — William H. Coulson, Jersey City, N. J. This invention relates to a structural improvement whereby the glass or similar substances may be laid in a metallic frame without the use of putty, provision being made for the disposal of rain and condensed vapor, and the invention covering various novel features and combinations of parts, to accomplish desirable results in a simple and practical manner.

SASH HOLDER. — John Schofield, Holyoke, Mass. This is a sash support having a bracket frame and a curved plate spring coiled at each end into volute scrolls that are attached to the bracket frame, being designed for ready application to new or old sash, and to hold either the upper or lower sash at desired points of adjustment.

MOSQUITO CANOPY.—Augustus Miller, Hoboken, N. J. This is a device by which the netting to be spread over the bed may be rolled up when not in use, and in which the netting is so attached to the roller that when it is drawn out therefrom one section may be folded down at each side of the bed and a third section at the foot.

SYRINGE ATTACHMENT. — Alfred E. Charlesworth, Seattle, Washington. This invention is designed to provide a simple and convenient attachment, with a peculiar construction of the various parts and their novel combination.

SCIENTIFIC AMERICAN BUILDING EDITION.

JUNE NUMBER.—(No. 56.)

TABLE OF CONTENTS.

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 ARCHITECTURE, richly adorned with elegant plates in colors and with fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural publication in the world. Sold by all newsdealers.

MUNN & CO., PUBLISHERS,
361 Broadway, New York.

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.

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.

(2272) G. B. asks (1) if there is a difference between mineral wool and asbestos. If so, what is it? A. Mineral wool is made artificially by blowing melted slag or glass into threads by steam. Asbestos is a natural mineral. 2. What is the liquid used by the so called "fire eaters," that they use on their hands before handling red hot iron, etc.? A. Dilute sulphuric acid or very strong solution of alum. Your other query will be answered later.

(2273) C. H. asks (1) if benzoin can be deodorized. A. No. 2. How can it be reduced? A. It is soluble in alcohol.

(2274) A. B. S. asks: 1. Is there any process by which the strong odor in the spirits of turpentine can be taken away, and if so, would the strength of the turpentine be reduced? A. Redistill from a solution of caustic potash; it will not impair its quality. 2. If equal parts of white wine vinegar and alcohol be put together in a bottle, would the alcohol turn to vinegar, and if so, how soon? A. Yes, if air is admitted; the time cannot be stated. 3. Is there any difference between the oil and spirits of turpentine? A. No; they are synonyms.

(2275) V. H. asks: Can cement be softened or loosened from the joints of terra cotta sewer pipe, without breaking the pipe? If so, how? A. No. 2. What is the average width across the shoulders of a man? A. It depends on the race. 3. What is the average length of a man's arms? A. About 6 feet from hand to hand when extended. This also depends on the race. 4. Can a person that is deaf in one ear hear a phonograph? And if so, how would you arrange it? A. Yes; no special arrangement is needed. 5. How can candle grease spots be taken out of soft woolly cloth? A. Scrape off all that will come. Then place a piece of blotting paper over them and iron with a hot iron. 6. Do you recommend a trade school to learn a trade in, or the ordinary way of apprenticing, for the time it takes to learn it? A. The trade school.

(2276) C. S. W. asks: 1. Is aluminum a good conductor of electricity? A. Yes; about half as good as copper. 2. Does a dynamo when running generate new electricity, or does it bring under control and use that which is already in the atmosphere? A. It converts mechanical energy into electrical energy. As we do not know what electricity is, we cannot speak of it in the sense of an entity as you do. We cannot consider it as being a substance "pr sent in the atmospher."

(2277) L. B. L. asks (1) where a given day begins, that is, where on the earth's surface was it first May 10, 1890? A. At 180° longitude east from Greenwich. This is the best that can be said on the subject, as it is not to be regarded as an absolutely fixed thing. 2. Does the dynamo create electricity? A. The dynamo converts mechanical energy into electric energy. Until it is settled what electricity is, we cannot consider the question of its creation. Your other suggestions are not valid.

(2278) W. F. C. asks: 1. B says that gunpowder will not burn in a vacuum. C says that it will. Which is right? A. C is right. 2. If a balloon rises to the height of eleven miles with 1,000 pounds ballast, and the ballast is then thrown out, will the balloon rise any higher? A. Yes.

(2279) J. C. O. asks (1) for a non-odorous disinfectant; is ther any cheaper or better than common copperas dissolved in hot water? A. The advantage of copperas is that it is not highly poisonous; the disadvantage is that it stains tissues, and under some conditions even porcelain. It is very efficacious. Sulphate of zinc probably surpasses it, but is poisonous. 2. What are the ingredients used in the solution for dipping old brass fixtures or ornamental brass work or chandeliers, etc., to make them look clean? A. Wash with beer. Dipping acid is not applicable except where they are to be relacquered, etc.

(2280) W. P. B. asks: Can you give me a solution for platinum plating (with battery) a pair of crucible tongs of German silver? A. No really satisfactory solution for the deposition of platinum by battery as a solid coating has yet been devised. One formula directs the addition to a solution of sodiochloride of platinum of a little oxalic acid. Then enough caustic soda is added to make it alkaline. Platinum plates may be riveted to the inner faces of the jaws of the tongs, and will make a better job.

(2281) T. M. C. A. asks (1) if a balloon will ascend when filled with compressed air. A. No. 2. Should it be filled with gas? A. It should be filled with gas.

(2282) L. W. T. asks for the construction of a lightning arrester for telegraph. A. In the SCIENTIFIC AMERICAN SUPPLEMENT, No. 752, you will find an account of Mr. Oliver Lodge's lightning protectors. Ordinarily a metallic comb or plate with edge filed into saw teeth is connected to line wire outside of instruments, and similar plate with its teeth facing and close to those of the first is connected to a "ground," which latter must be very good.

(2283) C. E. L. writes: I have a very fine "sciopticon," but I find it inferior for exhibitions, on account of oil light not being bright enough. Please say if there is any other fluid that can be used safely in same burner that will give better results, or can I improve on the old light by adding something? A. The oxyhydrogen or lime light is, probably, all things considered, the best for ordinary use. The electric light is superior, but is not always applicable. Portable oxygen generators are now sold by dealers in magic lantern supplies. There is no "fluid" such as you ask for. A little camphor may be dissolved in the oil.

(2284) J. M. M. writes: I want a few good formulas to make colognes. Could you furnish me them? A. As a rule there is considerable difficulty in procuring a good cologne. The alcohol should be deodorized, and probably it is best after addition of the citron oils to distill, and then to add to the distillate the other oils. The following is a typical formula:

Oil of bergamot	4	fluid ounces.
" " lemon	1½	" "
" " neroli bigarade	3	" "
" " rosemary	3	" "
" " cloves	½	" "
" " rosemary (best)	½	" "
Deodorized alcohol	2½	gallons.
Rectified spirit	1½	"

Other formulas are given in Cristiani's "Perfumery and Kindred Arts," which we can supply by mail for $5.

(2285) J. S. N. asks (1) how to make a table relish such as is sold in bottles by grocers. A. The following is given as the formula for Worcestershire sauce: Mix together 1½ gallons white wine vinegar, 1 gallon walnut catsup, 1 gallon mushroom catsup, ½ gallon Madeira wine, ½ gallon Canton soy, 2½ pounds moist sugar, 19 ounces salt, 3 ounces powdered capsicum, 1½ ounces each of pimento and coriander, 1½ ounces chutney, ¾ ounce each of cloves, mace, and cinnamon, and 6½ drachms asafœtida dissolved in 1 pint brandy 20 above proof. Boil 2 pounds hog's liver for 12 hours in 1 gallon of water, adding water as required to keep up the quantity, then mix the boiled liver thoroughly with the water, strain it through a coarse sieve. Add this to the sauce. 2. In making flavoring extracts such as perpermint, checkerberry, etc., how much coloring is used for the different extracts, if made by the gallon? A. No coloring whatever should be used. 3. How is ammonia (such as is sold in bottles by grocers, etc.) made—materials, amount of each? A. Sulphate of ammonia is treated with water and lime in a still and heated. The gas evolved is passed through water, which absorbs it. A small amount of a fatty acid or similar compound may be added. 4. Name of a book (if you know of any such)

treating on laundry blue, blacking, inks, and flavoring extracts. A. We can supply the Techno-Chemical Receipt Book, $2.

(2286) S. H. P. writes: Can you tell me what will take the stains made by poison ivy juice out of a handkerchief? I pulled up some sprouts of ivy, and to save my hand from danger, covered it with a handkerchief, then threw that into a tub of water overnight, and the next morning it was covered with black spots, looking like ink or thin tar, and the usual washing and boiling didn't move them at all. A. We advise you to try the effect of Javelle water, followed by a weak solution (1 to 20 or less) of oxalic acid, washing out the handkerchief thoroughly between and after both applications.

(2287) A. E. H. asks for a receipt for making a paste or glue that will strongly fasten felt or thick woolen goods to iron or steel. A. Soak pulverized shellac in ten times its weight of strong ammonia. It will eventually form a transparent liquid. Or to rather thin hot glue solution add tannic acid until sticky and curdled and apply at once.

(2288) J. J. Y. asks: What cheap fluid, and one that will mix thoroughly, can be used to thin vegetable tar? A. Benzine or turpentine.

(2289) C. D. asks (1) how butter can be renovated and colored. A. Butter color is sold for the purpose. Bad butter cannot be renovated. Treatment with lime water and other chemicals has been suggested. 2. How can eggs be packed so they will keep fresh for winter markets? A. Eggs are preserved by being dipped in melted paraffin or by being packed in a barrel with lime water.

(2290) G. R. writes: By adding potash lye to flour and water you make a paste the same as by boiling. What can I add to this to prevent from souring? A. Add one part salicylic acid to 1,000 of the paste.

(2291) G. M. E.—The sample sent is galena or sulphide of lead.

(2292) O. McN. asks: How are crayons, such as those used in the public schools, made? A. By compressing proper materials, such as sulphate of lime.

(2293) W. E. A. asks: 1. What is the best make of dynamo and motor that one could use to transmit 40 horse power 200 yards over dikes, etc., where rope transmission would be impracticable? A. Any of the principal makers could supply you with machines for this purpose. 2. What power would be required to run the dynamo to obtain 40 horse power from motor? A. About 54 horse power. 3. Would a current of 110 volts E. M. F. with the proper strength develop 40 horse power in a suitable motor? A. Yes. 4. What is the least E. M. F. and amperage practicable to develop the above power? A. 746 watts constitute an electrical horse power; 746 × 40 = 29,840, the number of watts required. This amount divided by the E. M. F. will give the current in amperes, or if divided by the current in amperes it will give the E. M. F. in volts. 5. Can I build a dynamo and motor of the same pattern as the 8 light dynamo described in SUPPLEMENT, No. 600, to obtain the above mentioned power? A. Yes; but it would not be advisable for one inexperienced in dynamo building to attempt a job of this magnitude. It would be better and less expensive for you to purchase from reliable makers. 6. Are the different field magnets in use patented? Also, has not the patent on the Gramme armature expired? A. There are patented field magnets, but the ones commonly in use are not patented. The Gramme patent is not in force.

(2294) J. A. M. asks for a solution of the following questions by algebra: 1. Says B to A, give me one of your apples and I will have twice as many as you. No, says A to B, give me one of yours, and we will have both the same. A. The statement gives the following equations: Let A's apples = x, and B's apples = y

$$(1)\ y + 1 = 2(x - 1)$$
$$(2)\ x + 1 = y - 1$$

Solving by regular process, we find $x = 5$, $y = 7$. 2. In any right-angled triangle whose base is known (say 40 feet), and also the sum of hypotenuse and altitude (say 60 feet), to find length of hypotenuse and base respectively. A. Let = x hypotenuse, and y = altitude. We then have the following equation from the properties of a right-angled triangle:

$$(1)\ y^2 + 40^2 = x^2, \text{ or } x^2 - y^2 = 1{,}600$$

From the statement we have the following equation:

$$(2)\ x + y = 60$$

Dividing (1) by (2) we have (3) $x - y = 26{\cdot}66$. Solving the simultaneous equations (2) and (3) we find:

$$x = 43{\cdot}333,\ y = 16{\cdot}666.$$

(2295) I. S. asks: Is it possible to succeed in photography with any of the advertised outfits, without first serving an apprenticeship to the business? A. Yes; with a few practical lessons from an experienced photographer you can succeed. To do satisfactory work, a good lens must be used.

(2296) C. E. W. asks for a recipe for making a cement or glue which will stick paper to polished iron. I wish to use it for covering pulleys. A. Roughen the face of the pulleys with a file, and use the toughest light brown glue that you can find, or fish glue.

(2297) C. F. H. asks for the formula of "paste diamonds." A. The following are representative formulas:

	I.	II.	III.
Silica	100	100	100
Red lead	156	00	164
White lead	00	171	00
Caustic potash (pure)	54	32	56
Boracic acid	7	9	6
Arsenious acid	3/16	1/8	1/100

Melt together to form a glass.

(2298) C. L. asks what country owns the fastest and best fighting ship in the world, and what our government is doing in this direction. A. The new British war ship Blake is claimed to be the fastest and most formidable war cruiser afloat. She has a displacement of 9,000 tons, length 375 feet, beam 65 feet, draught 25 feet 9 inches, twin screws, 20,000 horse power, maximum speed, 22 knots per hour, or over 25 miles. As a ram, at this high velocity and her great weight of 9,000 tons, it is doubtful if any vessel could withstand the shock. The Blake is constructed of steel throughout, has six inch armored turtle back steel deck covering the magazines, torpedo rooms, engines, and boilers. Fuel space, 1,500 tons. She is to carry two 9 inch 22 ton breech loaders and ten 45 pounder quick-firing guns, each capable of firing 12 times per minute, worked by two men, and will pierce 12 to 15 inches of armor plate. Cost, $1,840,000. We have as yet nothing that approaches this ship, but Congress has authorized the construction of one, known as cruiser No. 2, bids for which were recently opened at the Navy Department, Washington. It will be three years before she can be built, and the indications are that faster and better examples will be brought out in other countries. Armored cruiser No. 2 is to be of 8,100 tonnage, and is the largest vessel ever designed for the United States Navy. She will be armed with six 8-inch, and twelve 4-inch breech loading rifles, is to develop 16,000 indicated horse-power and a speed of twenty knots. Her dimensions are: length, 380 feet; extreme breadth, 64 feet 2½ inches; depth in hold, 41 feet 3 inches. Her armor varies from four to ten inches in thickness.

The new Russian torpedo boat Adler, lately built, proved on trial to be one of the fastest vessels afloat. Her mean speed during two runs was 26·55 knots per hour, or a litle over 30 miles per hour. She is 152 ft. 7 in. long, 17 ft. wide, 150 tons displacement, 2,300 h. p. It would seem as if a much larger vessel having a still higher speed might be designed and constructed. It would be a grand thing for some of our enterprising countrymen to accomplish.

(2299) W. M. asks for how long copyrights for books run, and whether the copyright is the same as a patent for an invention, and what is the fuss they are making in Congress about copyrights? A. A copyright runs for 28 years with privilege for a renewal of 14 years, making 42 years in all. A copyright is similar to and is virtually a patent. That is to say, a copyright secures to the holder the exclusive right to reproduce the book, and no one may print it without becoming liable as an infringer. Copyrights are granted to citizens of the United States, and to foreigners who are resident here; but foreigners who are not resident here cannot obtain copyrights. The "fuss" in Congress relates to an effort made to allow foreigners to take these 42 year copyrights or book patents. The bill has been defeated. It is being again urged, chiefly by the wealthy book publishers, as it would facilitate them in forming trusts to put up the prices of all books. One trust already has been formed, namely, the American Book Company, which has a capital of five millions of dollars, and has secured the control of the copyrights of most of the leading school books used in this country. It is believed the copyright law can be amended in such a way as to benefit foreign authors, and yet prevent publishers from forming combinations to advance the prices of books. The bill lately defeated was obnoxious chiefly because it secured little to authors, and nothing to the public, but helped the rich publishers to grow richer at the expense of the people.

(2300) W. M. asks how long a horse can go without food and water? A. We do not know as to horses, but it is stated that after the recent fire in the Neilson 750 ft. shaft of the coal mine at Shamokin, Pa., twelve mules were found alive in the mine that had been without food or water for 26 days.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

June 3, 1890,

AND EACH BEARING THAT DATE.

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

Air feeding device, J. Burns 429,228
Air ship, C. E. Bechtel 429,373
Alloy, anti-friction, S. Singley 429,157, 429,158, 429,249
Animal trap, C. Hall 429,521
Anti-friction composition, S. Singley 429,248
Anvil, J. O'Brien 429,149
Autographic register, W. Assheton 429,495
Axle, car, W. F. Sherman 429,325
Axle set, W. F. Nightingale 429,245
Axle, wagon, H. G. Mitchell 429,385
Bake pan, W. Wainwright 429,551
Bale press, A. E. Cummins 429,188
Baling press, M. C. Jackson 429,240
Battery. See Medical battery. Secondary battery.
Beating machine, J. H. Burnham 429,114
Bell, gong, E. C. Barton 429,299
Belt replacer, F. Balderson 429,372
Belting, manufacturing flat woven gut, J. Griffin 429,270
Bird cage screen, M. G. Leonard 429,196
Board. See Drawing board. Game board.
Boat. See Tow boat.
Boiler. See Stand boiler. Steam boiler.
Boiler tubes, machine for bending the ends of, H. Edwards 429,263
Bolster guide, spring, G. M. Hughes 429,449
Bolt. See Shaking bolt.
Bolt cutter, stay, O. Johnson 429,571
Bolting reel, J. B. Dobson 429,339
Book covers, machine for pasting backing tape on, E. N. Martineau 429,173
Books, suspension link for, J. H. Brown 429,301
Boomerang thrower, M. Cummins 429,230
Boring and drilling tool, C. Croll 429,261
Boring and turning mill, F. W. Taylor 429,162
Bottle stopper, Oliver & Brooks 429,579
Bottle stopper, Roorbach & Tucker 429,482
Bottle wrapper, C. W. Bell 429,184
Box. See Fuse box. Packing box.
Box fastener, Davy & Dufau 429,510
Brace. See Ratchet brace. Railway rail brace.
Braiding machine, L. W. & N. Lombard 429,136
Brick machine, White & Boyd 429,296
Broom or whisk, J. H. McEldowney 429,469
Buckle, F. H. Loveless 429,137
Buckboard, J. T. Clarkson 429,260
Bung for pickle barrels, R. Hoffman 429,448
Burner. See Gas burner. Hydrocarbon burner. Oil burner.
Butter, making, J. Boyd 429,186, 429,187
Button, Jackson & Platt 429,530
Button setting machine, E. H. Taylor 429,394
Cable covering machine, J. D. Bishop 429,255
Cable grip, J. H. Masters 429,590
Cable, wire link, G. H. Ogilvy 429,174
Call and voting apparatus, electric, Wilkins & Reed 429,330
Can head cutter, A. S. Wadleigh 429,489
Candelabrum, T. McGovern 429,471
Cans, sealing lock for, W. H. Stoops 429,288
Car coupling, A. B. Evenden 429,122
Car coupling, J. Hughes 429,194
Car coupling, A. McDougald 429,358
Car coupling, A. C. Merritt 429,539
Car coupling, G. S. Osmundson 429,151
Car coupling, C. E. Seabury 429,365
Car coupling, J. H. Talpey 429,189
Car coupling, A. Wetherell 429,399
Car coupling, Williams & Edelston 429,371
Car fender attachment, Casaday & Peak 429,501
Car heater, G. A. Barnard 429,183
Car heater, C. O. Newton 429,363
Car, railway, J. B. Low 429,216
Car seat lock, C. Parham 429,176
Car seat, railway, H. B. Comer 429,563
Car, stock, G. W. Cushing 429,509
Car wheel, H. W. Avery 429,407
Cars, air brake apparatus for, R. W. Bayley 429,332
Carbon filaments, manufacture of, A. De Khotinsky 429,534, 429,535
Carbureting apparatus, W. Dawson 429,426
Carpet fastener, P. Beamish 429,410
Carpet stretcher, F. V. Foster 429,567
Carrier. See Cash carrier. Cash and parcel carrier. Trace carrier. Trolley carrier.
Carving machine, J. Jacobson 429,213
Case. See Cell case. Show case.
Cash and parcel carrier, pneumatic, H. Miller 429,143
Cash carrier, A. R. Cory 429,338
Cash indicator, register, and calculator, combined, J. Sharpe 429,486
Cattle guard, J. Swegles 429,393
Cell case, E. D. Averell 429,406
Chain, A. B. Hendryx 429,444, 429,445
Chloroforming, mask for, C. Schimmelbusch 429,287
Churn, R. F. Collins 429,506
Churn, C. Miller, *et al* 429,356
Cigar lighter, self, West & Turner 429,329
Clasp. See Pocketbook clasp. Ticket clasp.
Clevis, T. G. Mandt 429,461
Clock, advertising, C. A. Ward 429,552
Clock, atop, R. M. Johnson 429,132
Clock striking mechanism, G. T. Keil 429,455
Clock winding mechanism, electrical, C. A. Ward 429,396
Closet. See Water closet.
Closet, G. H. Goetze 429,518
Cloth pressing machine, D. Gessner 429,268
Clothes drier, B. F. Fuller 429,378
Clothes pin, M. E. Thrall 429,550
Clothes pounder, N. Propst 429,476
Clothes prop, C. L. Burge 429,227
Clothes wringer, J. A. Russell 429,178
Clutch coupling for pipes, combination, J. B. Genin 429,126
Clutch, friction, E. L. Babcock 429,298
Clutch, friction, L. J. Hirt 429,446
Clutch, friction, W. A. Wilkinson 429,402
Conductors, machine for stripping the lead covering from, D. Thatcher 429,292
Cooking utensil, H. Bodenstein 429,256
Copying device for manifold, L. H. Clark 429,336
Copying pads moist, receptacle for keeping press, C. L. Wise 429,163
Corn or cotton thinner, G. L. Webb 429,328
Corset, G. D. Nichols 429,542
Cotton delivering machine, J. B. Allin 429,493
Cotton gin, J. S. Edgcomb 429,119
Coupling. See Car coupling. Clutch coupling. Shaft coupling. Thill coupling.
Crushing mill, roller, M. G. Mosher 429,146
Cultivator, H. Gale 429,343
Cultivator lister, Milroy & Hoak 429,541
Cultivator, listing, R. W. Hagel 429,520
Curling iron, F. D. Miller 429,279
Cutter. See Bolt cutter. Can head cutter. Feed cutter. Thrashing machine band cutter.
Cycle handle, H. H. Brown 429,416
Detergent, J. J. Gilbert 429,435
Diamond washer, L. W. Levy 429,276
Dish, pie, E. Egbertson 429,513
Disinfecting device, M. B. Manwaring 429,384
Door closing device, S. Loe 429,278
Door hanger, G. W. Warner 429,295
Draft and land gauge for plows, etc., O. T. Owens 429,220
Draught equalizer, I. J. Stoner 429,222
Drawing board, C. E. Sajous 429,203, 429,586
Dredger, C. Lardner 429,351
Drier. See Clothes drier. Lumber drier.
Drill. See Grain drill.
Drilling and reaming machine, W. B. Hughes 429,526
Dust collector, L. W. Haskell 429,347
Dye, red, G. Koerner 429,350
Electric circuits, maintaining a uniform current in, J. M. Bradford 429,333
Electric conductor, H. B. Cobb 429,304, 429,305
Electric conductor joint, H. B. Cobb 429,306
Electric currents, apparatus for rectifying, F. Anderson 429,109
Electric motor, continuously operated, W. D. MacQuesten 429,314
Electric subway cover, J. Stafford 429,251
Electric tramway and car, A. L. Lineff 429,277
Electric wires, underground conduit for, H. B. Cobb 429,307
Electrical converter, G. Pfannkuche 429,583
Electrode, secondary battery, C. Hering 429,272
Electrodes, making secondary battery, C. Hering 429,274
Elevated or bridge structure, I. S. McGlehan 429,470
Elevator indicator, J. P. Cushing 429,189
Engine. See Hot air engine.
Engines, automatic cut-off for rotary, N. Wallerich 429,204
Engraving apparatus, J. L. Mills 429,280
Extractor. See Pen extractor. Stump extractor. Tack extractor.
Fabric. See Wire fabric.
Fanning mill, R. K. Floeter 429,565
Faucet, vent, Frey & Loges 429,433
Feed cutter, S. Freeman *et al* 429,432
Fence machine, wire, D. E. Deeter 429,232
Fence post, W. H. Rogers 429,547
Fence, wire, J. A. McCarthy 429,244
Filter, J. A. Bowden 429,112
Filtering apparatus, oil, J. Dooner 429,340
Fire alarm and extinguishing apparatus, electric, C. E. Ongley 429,318
Firearm, Armington & Briggs 429,110
Firearm, revolving, D. B. Wesson 429,397
Frame. See Umbrella frame.
Fruit pitting machine, C. W. Elkins *et al* 429,209
Furnace charging device, J. M. Pagnoul 429,200
Fuse box, C. E. Kammeyer 429,133
Fuse box, N. S. Possons 429,584
Gaff jaw, J. Parker 429,474
Game, C. E. Johnstone 429,531
Game, W. H. Marshall 429,312
Game, G. W. Snell 429,326
Game apparatus, W. H. Reiff 429,585
Game, baseball, J. W. Maxcy 429,354
Game board, H. & H. Sperl 429,250
Garment supporter, E. A. Doty 429,208
Garment supporter, E. S. Smith 429,549
Gas, apparatus for the manufacture of, M. S. Greenough *et al* 429,309
Gas burner, regenerative, C. Westphal 429,398
Gas meter, J. J. Culmer 429,423, 429,424
Gas meter, B. P. Moors 429,313
Gear for rolls, expansion, J. N. Wise 429,331
Gear pinion or wheel, R. N. Allen 429,108
Generator. See Steam generator.
Glazed structure, W. H. Coulson 429,375
Glove fastener, M. D. Shipman 429,179
Glove fastening, E. Pringle 429,117
Grading and ditching machine, R. M. Thompson 429,368
Grain binder, J. P. Monroe 429,465
Grain drill, F. R. Packham 429,320
Grain meter, G. B. Howland 429,589
Graphite, separating metallic impurities from, M. W. Parrish 429,386
Grinding mill, F. W. Ihne 429,529
Guard. See Cattle guard.
Gun, blow, W. M. Bunsen 429,499
Gun rack for tents, B. Watson 429,370
Gunpowder, manufacture, R. Von Freeden 429,516
Hammock holder, A. Beals 429,409
Hand, artificial, S. Lucas 429,243
Handle. See Cycle handle. Kitchen utensil handle. Tool handle.
Hanger. See Door hanger. Pipe hanger.
Harness, Bigelow & Davis 429,496
Harness, S. M. Rhone 429,545
Harrow and cultivator, spring tooth, Bridenbaugh & Oellig 429,500
Harrow, disk, A. J. Glass 429,437
Harvester, corn, W. Fuhlhage, Jr 429,211
Harvester, corn, H. L. Jones 429,511
Hat and garment hook, A. E. Hall 429,346
Hat sweat, P. I. Field 429,341
Hatchway, elevator, Z. Goodell 429,519
Head rest, tourist's, H. A. Bond 429,207
Header attachment, T. J. Brown 429,257
Heater. See Car heater. Water heater.
Heating apparatus, electric, C. E. Carpenter, 429,559, 429,560
Heating apparatus, steam, G. A. Barnard 429,182
Heating, electric, C. E. Carpenter 429,562
Hinge, M. Slane 429,391
Hitching post, E. A. Farish 429,123
Hoisting apparatus, C. W. Hunt 429,450
Hoisting gear, G. Fletcher 429,308
Holder. See Hammock holder. Paper holder. Sales slip or sheet holder. Sash holder.
Hook. See Hat and garment hook. Snap hook. Whiffletree hook.
Hoop shaving machine, W. P. Curtiss 429,376
Horse power apparatus, Johnson & Holtman 429,382
Horse tail tie, C. D. Haldemann 429,569
Horseshoe, L. B. Linn 429,460
Hot air engine, J. J. McTighe 429,281, 429,282
Hot air engines, operating, J. J. McTighe 429,283
Hub band, T. J. Reid 429,479
Husking pin, H. H. Perkins 429,475
Hydraulic shaping press, Hobson & Hull 429,349
Hydrocarbon burner, H. C. Brill 429,414
Indicator. See Cash indicator. Elevator indicator.
Inhaler, Ramey & Rollins 429,321
Inkstand, C. G. Backus 429,555
Insect exterminator, T. Gray 429,345
Insole, Robinson & Morgan 429,480
Insulator for electric railways, W. D. MacQuesten 429,315
Iron. See Curling iron. Sad iron. Soldering iron.
Joint. See Electric conductor joint.
Journal bearing, M. A. Andrews 429,554
Keyboard player, mechanical, E. Capitaine 429,419
Key fastener, G. H. Huttenlocher 429,239
Kitchen utensil handle, F. W. Judd 429,453
Knitting machines, intermittent feed mechanism for, S. L. Otis 429,319
Ladle, converter, S. C. Collin 429,337
Lamp, T. Gordon 429,440, 429,441
Lamp, G. W. Woodward 429,181
Lamp, electric arc, C. F. Keller 429,573
Lamp, portable, electric, J. H. Irwin 429,172
Lamps, apparatus for feeding oil to, V. Di Marzo 429,353
Latch, A. O'Keefe 429,150
Latch and lock combined, C. Sandford 429,322
Latch for car doors, Chaffin & Cone 429,502
Latch, gate, W. W. Clements 429,505
Lathe, H. C. Albee 429,297
Letter sheet, H. N. H. Lugrin 429,575
Life-saving garment, J. H. Grady 429,269
Liquids, apparatus for decolorizing, filtering, etc., B. Lavigne 429,459
Lock. See Car seat lock. Permutation lock. Vehicle seat lock.
Lock, P. McMahon 429,361
Lock, E. C. Smith 429,159
Locomotive, electro-magnetic, R. N. Allen 429,107
Loom let-off mechanism, G. Park 429,583
Loop forming machine, W. O. Miller 429,540
Lubricator, J. M. Evans 429,4 1
Lubricator, F. F. Santenard 429,155
Lumber drier, W. McPherson 429,473
Machinery, mechanism for driving, A. Kleinstiver 429,134
Magnet for dynamos, field, E. Wagemann 429,490
Malt, apparatus for manufacturing, C. Fey 429,124
Marker, land, O. B. & A. E. Rockwell 429,481
Matching machine attachment, C. P. Flanders 429,170
Measuring and carbureting air or gas, apparatus for, F. H. Hambleton 429,271
Measuring vessel, C. Robinson 429,201
Medical battery, F. P. & W. A. Hoeneman 429,447
Medicine, remedy for diphtheria, L. M. Pierson 429,152
Metal and at the same time pointing and threading the adjacent ends thereof, dividing rods of, C. D. Rogers 429,388
Metal working machine, combined, H. B. Sevey 429,324