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Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N.Y. See illus. ad v., p. 28.
Curtis Pressure Regulator and Steam Trap. See p. 253.
Iron and Steel Wire, Wire Rope, Wire Rope Tramways. Trenton Iron Company, Trenton, N. J.
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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 This is for our information, and not for publication.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.

(1) W. W. Q. writes: I have two baths which I have been using for plating; one is of cyanide of silver and the other of cyanide of gold; how can I reduce these baths so as to obtain metallic silver and gold? A. Precipitate with zinc shavings and sulphuric acid, and dissolve out the excess of zinc with more sulphuric acid. Do not work at it in a closed room, as poisonous gas may be evolved.

(2) S. M. M. desires a recipe for preserving rose leaves, as we see them in jars in art stores. A. Put a handful of salt on the bottom of an earthen jar, then a layer of leaves, and repeat this alternately until the jar is filled. Keep the jar as much as possible in a cool place, and covered over when the leaves are not to be exposed.

(3) A. F. asks: 1. Will paper varnished with common furniture varnish be good material for use in an induction coil? A. Shellac is generally used, and will save time in drying. The other will answer, but may need baking after each application. 2. I have a small magneto-electric machine, such as is used in ringing telephone bells; will it work a small induction coil, and what kind of a current does it produce, no commutator being used? A. It will work a small induction coil, giving the usual "shuttle" current. 3. I have a large number of small spools wound with No. 36 silk-covered wire, each spool containing about 1 1/2 ounces of wire; can I use the wire for making an induction coil, and if so, how should the spools be connected and how should the layers be insulated? A. You can use the wire, but must rewind it. See SUPPLEMENT, Nos. 160 and 166, for full instructions.

(4) J. M. G. asks: 1. Can you give me a receipt for starching India paper? A. See article on "India Paper," page 149, SCIENTIFIC AMERICAN for March 5, 1887, for this information. 2. Can you tell me how to burn or boil linseed oil? A. Linseed oil in the proportion of 1 gallon with 3/4 pound litharge is allowed to simmer with frequent stirring until a skin begins to form, which scum is then removed, and when the oil has become cold and settled, the clear portion is decanted and called boiled oil. 3. What effect has sugar of lead on printing inks? A. If combined with the linseed oil, it would tend to make a quick-drying ink.

(5) T. H. K. writes: In tinning copper vessels, I have them scoured out with sand after they have been in sulphuric acid water a day or so, and when I come to tinning, use a forge heat, and tin with pure block tin and sal ammoniac, but the tinning will not adhere to the copper on some parts. A. A forge blast is very uncertain, and apt to overheat spots before the tin takes. A charcoal furnace is better. You should be able to tin vessels or kettles with powdered resin sprinkled on the surface, by pouring on the melted tin, having it quite hot, and allowing the surplus to run off at once back into the melting pot. A little powdered sal ammoniac will help the flow if it becomes lumpy. Brushing the clean surface of the copper with a saturated solution of zinc and sal ammoniac in hydrochloric acid (tinman's acid) should also work well, pouring the hot tin quickly. We fear that your whole trouble comes from the treacherous forge fire.

(6) J. E. S. asks the best explanation of the fact that the moon appears larger when near the horizon than when high in the heavens. A. The atmosphere by its refraction acts as a lens, producing an apparent increase in diameter near the horizon. Some claim that it is only an optical illusion; yet, when we consider that the atmosphere as seen from the surface of the globe is a section of a vast lens whose radius is the semi-diameter of the earth, it is reasonable to assume a small increase in the size of objects seen through it, and a still greater increase when seen in the obliquity of the horizon, in the same manner as an object is seen at a low angle through a long focus lens, or by turning it edgewise.

(7) A. S. E. asks (1) how to clean Quincy granite when rusty, after being exposed to the weather a few years. A. Use strong lye, or make a hot solution of 3 pounds of common washing soda dissolved in a gallon of water. Lay it on the granite with a paint brush. 2. What is the cause of Italian marble having a greasy appearance after being in the weather a few years? A. The discoloration is due to the gases in the air, and the marble can be cleaned similarly to the method as above given.

(8) G. R. R. asks how to restore the luster of morocco leather, such as is used for blinds and saddles in harness. A. It is probably patent or japanned leather on your harness, instead of morocco; such luster is put on by baking on a special black varnish in an oven. A paste suitable to preserve gloss of patent leather and prevent cracking is made of wax with a little olive oil, lard, and oil of turpentine, mixed when warm, to be of the consistency of thick paste when cooled.

(9) J. E. writes: I have a large ash heap which I wish to use for walks around the house. Can you tell me what to mix with it to make a cheap and durable walk? A. Mix ordinary clay with your ashes, and it will make a good walk. 2. Also how to clean a marble slab that has become discolored from use? A. Take 2 parts of common soda, 1 part of pumice stone, and 1 part of finely powdered chalk; sift it through a fine sieve and mix it with water; then rub it well all over the marble, washing with soap and water.

(10) E. G. G. desires some method of wholly or partially decolorizing vinegar. A. Filter it through charcoal or add a handful of charcoal to a barrel containing it. Agitate thoroughly and then filter.

(11) J. E. A. asks: What will clean a white Derby hat? A. Wash in a hot solution of carbonate of soda or sesquicarbonate of ammonia; but it is difficult for even an expert to clean such stock without destroying the original finish.

(12) R. B. W.—For plain directions for making a simple telephone, see SUPPLEMENT, No. 142; for making colored fires see details in SUPPLEMENT, Nos. 49 and 317.

(13) C. H. desires a receipt or preparation to clean and polish knives, forks, and tinware. A. Rub with equal portions of fine coal ashes and soda, with a little water.

(14) W. B. H. says: Will you please give me the height of printer's type as usually made, in thousandths of an inch. A. 1 1/2 of an inch.

(15) J. M. D. asks: 1. What will be the result if I introduce a small amount of compressed air into boilers supplying steam to run compressor? A. Air and steam combined for motive force is a novel idea, which has been tried and has failed; it costs more to introduce the air than its value. It will do no harm and little good. 2. What is the best lubricant for cylinders of engines driven by compressed air? A. Use light mineral oil. 3. What is meant by "clearance space" in cylinder? A. Clearance is the space between the cylinder head and the piston at the commencement of the stroke, and the steam passage between the valve and cylinder.

(16) W. H. S. asks for something, in liquid or any other form, good for purifying air in laboratory where acids and gases exist. A. We know of nothing but ventilation. The odors you wish to overcome are presumably stronger than anything you could use to neutralize them.

(17) C. E. B. asks: What material is used in taking a mould of one's head and shoulders, preparatory to making bust of plaster of Paris or clay? Also, how can one prepare or cover the hairy portions of the head and face? A. The person must lie on his back, his hair being tied behind; into each nostril put a conical piece of paper, open at each end, to allow of breathing. The face is to be lightly oiled over, and the plaster being properly prepared is to be poured over the face, taking particular care that the eyes are shut, till the plaster is a quarter of an inch thick. In this way a mould is to be formed from which a second cast is to be taken, that will furnish a cast exactly like the original. How such work can be done by those who are inexpert is described in the SCIENTIFIC AMERICAN of November 27, 1886.

(18) J. C. G.—Galvanized pipe for water for house supply is not poisonous if the water be kept running constantly. If the pipe is closed for a night, the water that the pipe contains should be drawn off before any water is used in the morning. The black pipe gives rusty water, and if of small diameter, soon stops up with rust nodules.

(19) A. L. P. asks what to use to paint cast iron vases with, white, that will stand the weather. A. White japan varnish baked on the vase in an oven or drying room at a temperature of 225° is the only white that will stand the weather. All air-drying paints weather.

(20) W. S. C. asks how to make black stencil blocking which is sold in cakes. A. Triturate together 1 part pure soot and 2 parts Prussian blue with a little glycerine, then add 3 parts gum arabic and sufficient glycerine to make the desired consistency.

(21) G. A. writes: We have an island on which poison ivy grows. What is the best means to exterminate it, and what is the antidote for ivy poisoning? A. The vines can only be removed by digging them up or burning them away. They cannot be destroyed except with other vegetation through fire and similar means. As an antidote, bathe the parts affected with a tablespoonful of sulphate of copper dissolved in a small tea-cupful of boiling water.

(22) W. S. asks (1) a recipe for a candy called butterscotch. A. Take 1 pound of sugar, 3/4 pint of water, and set over a slow fire; when done, add 1 1/2 tablespoonfuls of butter, and lemon juice to flavor. 2. What is the best paste, homemade? A. See recipe given in SCIENTIFIC AMERICAN SUPPLEMENT, No. 159. 3. How is ginger ale made? A. See article on "Summer Beverages," given in SCIENTIFIC AMERICAN SUPPLEMENT, No. 270.

(23) J. E. P., Jr., asks a receipt for overcoming the odor of corduroy. A. We doubt there being any practical remedy, except the equivocal one of substituting some other more powerful odor. There are kinds of corduroy which do not have much odor.

(24) A. C. D. asks how to make a filter for oil that has been used once in dynamo oil cups. This oil accumulates, and is not very dirty. A. Filtering through cotton or cotton waste is the simplest manner of purifying the oil, if it is not very dirty. When a

more thorough filtering is needed, heat the oil with an equal quantity of water to 212° Fah., agitate for a short time, and allow it to cool before decanting.

(25) A. B. C. desires a recipe for making first class sticky fly paper. A. In a tin vessel melt together 1 pound of resin and add 2 fluid drachms of linseed oil; while the mixture is warm, dip a spatula into it, and spread what adheres to the blade on foolscap paper. Different samples of resin require varying proportions of oil to make the mixture spread properly.

(26) A. C. B. asks about painting posts with a mixture of boiled oil and pulverized coal. What kind of coal is used, and the best mode of pulverizing it? A. Use charcoal, which can be easily pulverized in a mortar. Coating posts, which have been charred, with coal tar is a better preservative, the absorbent properties of the charcoal on the surface causing the tar to penetrate to a good depth.

(27) W. J. E. asks: What proportion of an iceberg is under water? A. About seven-eighths of its volume.

(28) H. O. W. asks: 1. Is there any government land in Indiana or Illinois unclaimed? If so, how can it be acquired by settlers? A. Address the Land Commissioner of the States referred to. There is also an official of that title in Washington whom you may consult on these points. 2. Will tincture of cantharides cause increased growth of hair or beard without injury, and how is it applied? A. It is an irritant, and is used to induce growth where morbid action exists. It is the basis of many hair invigorators, but fails of action where the hair is dead. A well known preparation is: Scald black tea 2 ounces, with 1 gallon boiling water, strain, and add 3 ounces glycerine, tincture cantharides 1/2 ounce, and bay rum 1 quart. Mix well by shaking, and then perfume. 3. What will remove tan or sunburn from the face? A. Use a mixture of magnesia in soft water, spread on the face, and after a minute or two wash off with Castile soap suds and rinse with soft water.

(29) L. M. asks (1) for some receipt for promoting the growth of hair. A. See preceding answer to H. O. W. 2. One to remove the same without injury to the skin. A. Use a strong solution of barium sulphide made into a paste with powdered starch. It should be applied immediately after it is mixed, and allowed to remain there for 5 or 10 minutes. If not used very carefully, it may injure or mark the skin.

(30) G. H. S. asks: What will take oil, grease, butter, or any substance of an oily nature out of writing paper? A. Use pipe clay, powdered, and mixed with water to the thickness of cream; leave it on for some hours.

(31) Derfla asks how to restore a type writer ribbon where the ink has become dried in. A. If it has enough color left, put on a little glycerine. For a new ribbon, or complete renovating, take of aniline black 1/2 ounce, pure alcohol 15 ounces, and concentrated glycerine 15 ounces. Dissolve the aniline black in the alcohol and add the glycerine.

(32) W. S. asks: What is liquid anhydrous ammonia? Can you favor me with the method of making same on a small scale? A. It is liquefied ammoniacal gas, NH3. Liquid ammonia may be produced by leading the anhydrous ammoniacal gas into a tube plunged in a freezing mixture composed of crystallized calcium chloride and ice, having a temperature of -40°. See Roscoe's "Treatise on Chemistry," vol. i.

(33) T. R. J. asks: Which of the common metals are most susceptible to heat and cold? A. Mercury and zinc.

MINERALS, ETC.—Specimens have been received from the following correspondents, and have been examined with results stated.
P. R.—The metallic portion is pyrite or sulphide of iron, and utterly valueless.

TO INVENTORS.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted May 31, 1887, AND EACH BEARING THAT DATE.
[See note at end of list about copies of these patents.]

Table listing inventions with names and dates. Includes: Abdominal supporter, S. A. Drewry; Adding machine, Smith & Shattuck; Advertiser, wire fence, E. K. Barnsdale; Air moistener, R. A. Roberts; Apron, hatmaker's, J. B. Alley; Arm rest, E. A. Bennett; Auger bit, C. Whitehouse; Axle, car, L. D. Allen; Axle lubricator, M. H. Wallace; Baby walker, Lane & Doney; Bale tie hooks, manufacture of, E. L. Clark; Baling press, C. E. Whitman; Bat, E. Cundy; Batteries, device for preventing the escape of noxious fumes from, Bailey & Warner; Bead, hollow oval or conical, W. S. Brown; Bed pan, A. V. Andrews; Bed, spring, J. Allan.

Table listing inventions with names and dates. Includes: Bed, spring, J. W. Young; Bedsteads, gates, etc., brace for, Lenix & Swann; Bell, car, W. H. Hudson; Belt, electric, W. W. Dunlap; Bicycle seat, C. A. Williamson; Billiard chalk holder or casing, A. Labre; Bit, See Auger bit; Blind stop, E. C. Smith; Block, See Pigeon hole block; Blower, fireplace, R. Ely; Boiler, See Steam and water boiler; Boot or shoe, G. Vallant; Boot or shoe packs, crimp for, C. Gerhard; Boots or shoes, buttonhole strip for, G. Vallant; Boots or shoes, machine for lasting, F. Chase; Boots or shoes, manufacture of, C. K. Bradford; Box, See Fare box; Paint box; Signal box; Bridge, C. W. Sherwood; Bucket, milk, J. D. Perry; Buckle, J. H. Donahue; Bung, A. Rust; Burner, See Gas burner; Petroleum burner; Vapor burner; Bustle, E. D. & J. Fraser; Button fastener, W. Halkyard; Butter worker, O. J. Wenner; Cage protectors, bracket hook for, W. S. Armstrong; Calipers, O. D. Warfield; Camera, See Photographic camera; Camera shutter, automatically operating, W. G. Price; Canning, D. E. Ashby; Car, combined chair and sleeping, E. B. Goelet; Car coupling, J. B. Batt; Car coupling, L. Champagne; Car coupling, H. Gallagher; Car coupling, D. J. Harding; Car coupling, G. W. James; Car coupling, J. L. Purkey; Car coupling, W. D. Swart; Car coupling, W. H. Wellsted; Car coupling, automatic, L. W. Layton; Car door fastening, C. C. Wrenshall; Car lamps, canopy for railway, Kelly & Zimmerman; Car lamps, canopy for railway, Willits & Duburn; Car lock and seal, J. Chapman; Car sash, W. Sutton; Car seat, H. S. Hale; Car seal, metallic, J. E. Lesueur; Car spring, N. H. Davis; Car spring, C. E. Garey; Car starter, H. R. Stickney, 2d.; Car wheel, G. W. Miller; Cars, hauling railway, L. Messier; Cars, steam heater for railway, H. R. Robbins; Cars, swing bearing for street, W. Sutton; Cars, temporary bowl for water closets of railway, C. M. Podgorski; Carbonizing incandescents, W. Maxwell; Card gilding machine, C. A. Wright; Carpet stretcher, O. L. Sprague; Carpeting, etc., producing improved color effects in the manufacture of tapestry, G. Marchetti; Carriage top, T. S. Brown; Carriage top prop, E. P. Sargent; Carrier, See Egg carrier; Cart, H. J. Diggle; Cartridge crimper, J. A. Haas; Case, See Watch case; Center marking device, B. F. T. Bell; Centering machine, Wood & Place; Chain, drive, B. A. Legg; Check rower, M. W. & D. M. Leonard; Cheese knife, H. M. Handshy; Cheese vat, R. Olp; Chimney cleaning apparatus, G. Harvey; Churn motor, M. F. Connet; Cider or wine press, J. H. Brubaker; Cigar bunching machine, Steink & Senn; Cigar mould, F. C. Miller; Cleaner, See Gun cleaner; Closet, See Dry closet; Coal conveyer, W. Lawton; Coffee pot, J. F. Wood; Collar supporting pad for draught animals, J. Morrow; Colorimeter, J. W. Lovibond; Comb, See Curry comb; Combing machine, P. Heilmann-Ducommun; Combing machines, fiber guide for, I. Best; Copper from its ores, extracting, Hunt & Douglas, Jr.; Copying machine, P. J. Cairns; Corner iron, sheet metal, L. L. Sagendorph; Cot and canopy, folding canvas, S. F. Seely; Cot, folding, C. J. Skau; Cotton gin rib, S. L. Jordan; Coupling, See Car coupling; Locomotive coupling; Thill coupling; Whiffletree coupling; Cuff fastener, D. Stone; Cultivator, E. E. Eddington; Cultivator attachment, D. J. Bisell; Cultivator, harrow, and cotton chopper, J. H. Fowles; Cultivator, listed corn, C. Guenette; Curry comb, R. Grove; Curtain ring, A. Wood; Curtain pole socket, R. S. Gould; Cuspidor, J. J. Brennan; Cut-off, automatic, A. F. Pickert; Cyclometer, M. H. Downes; Dental mallet, H. C. Register; Dentistry, C. McLean; Desiccating roll, W. R. Hinsdale; Desk, school, C. E. Dressler; Dish, covered, W. E. Hawkins; Distilling ammonia and producing refrigeration, W. C. Wren; Distilling water, method of and apparatus for, A. M. Coyle; Door check, G. S. White; Door hanger, C. E. Clark; Dredging apparatus, A. B. Bowers; Dress shield, H. S. Coffeen; Drier, See Grain drier; Drilling tool, pneumatic, A. J. Bates; Drum, heating, H. P. Heitmann; Dry closet, I. D. Smead; Drying offal and other wet products, machine for, S. E. Worrell; Dust collector, J. J. Gerard; Dyeing apparatus, C. Corron; Earring, H. Knickman; Earring fastening, T. W. F. Smith; Edge burnishing machine, R. S. Ashton; Egg carrier, J. Frazee; Electrical conductor or cable, lead covered, G. L. Kitson; Electrical conductors, machine for making seamless lead covered, G. L. Kitson.

Engine. See Rotary engine. Traction engine.
 Electric motor, G. F. Card. 364,088
 Elevators, electrical safety device for, R. M. Curtis (r). 10,838
 Embalming table, J. Sieber. 364,051
 Envelope machine, F. H. Richards. 364,132
 Envelope machines, band mechanism for, F. H. Richards. 364,040
 Excavator, hydraulic, A. O. Bostrom. 363,796
 Explosive compound, E. Du Pont. 363,887
 Extractor. See Stump extractor.
 Fare box, W. T. Dryden. 364,164
 Feeding stock, device for, J. G. Richardson. 363,849
 Felted articles, pouncing, J. C. Wilson. 363,980
 Fence, J. C. Rufforn. 364,187
 Fence post, Sawyer & Guy. 363,853
 Fence post socket, J. Richardson. 364,042
 Fences, machine for making wire and slat, J. S. Locke. 364,120
 Fifth wheel, G. M. Badger. 363,976
 Firescape, derrick, etc., H. Opp. 364,186
 Fire escape ladder, D. D. Decker. 363,950
 Fire escape, portable, W. H. Roberts. 363,913
 Fire extinguisher, hand, J. S. Zerbe. 363,939
 Fire kindler, Smith & Johnson. 364,055
 Fire kindler, H. Wilcox. 363,871
 Flood gate, M. T. Bedford. 363,793
 Fodder stacker, W. J. F. Yohnka. 363,877
 Fuel, apparatus for feeding, T. Vicars, Sr., et al. 364,194
 Furnace, W. D. Bartlett. 363,977
 Furnaces, mechanical feeder for, G. Alexis Godillot. 363,953
 Furniture pad, E. L. Dunklee. 363,955
 Gauge. See Weatherboard gauge.
 Game apparatus, W. S. Reed. 363,848
 Garment supporter, Olmstead & Nason. 364,037
 Gas, apparatus for generating illuminating, R. Boeklen. 363,945
 Gas burner, Gill & Foley. 364,101
 Gas burner, G. H. Gregory. 363,892
 Gas meter registering separately the consumption by night and by day, J. Wybauw. 363,937
 Gate. See Flood gate. Railway gate.
 Gate, H. V. Philpott. 363,864
 Gate, E. Townsend. 364,198
 Gate, Von Stein & White. 364,195
 Gear, variable expansion, J. Hepworth. 363,825
 Generator. See Steam generator.
 Glove, mitten, etc., O. T. Jennings. 363,829
 Glue, etc., case for liquid, R. Brooks. 363,983
 Governor, steam engine, H. T. Giles. 363,888
 Grain drier, J. Wales. 363,885
 Grain feeder and packer, H. M. Weaver. 363,867
 Grain scourer, J. Yates. 363,938
 Grate, Oehrle & Perkins. 364,035
 Grinding mill, B. Tours, Fils. 364,145
 Gun cleaner, W. E. Forster. 363,951
 Hair crimper, H. G. Guild. 364,170
 Hammock suspension device, Stulz & Wilson. 364,190
 Handle. See Shovel handle. Tool handle.
 Hanger. See Door hanger.
 Harness, G. W. Baird. 363,881
 Harness, F. L. M. Granier. 363,818
 Harrow, rotary, R. Rakestraw. 364,130
 Harvester, C. Miller. 364,127
 Hat, R. Plato. 364,129
 Hat hook, G. & F. Pape. 364,038
 Hay rake and tedder, combined, C. M. Maxson. 364,123
 Heater. See Sad iron heater.
 Heating apparatus, water, J. Love. 364,181
 Hitching post, C. S. Hurd. 364,175
 Hoisting drums, limit stop for, T. W. Heermans. 364,111
 Holdback, A. R. Eaton. 363,814
 Holder. See Billiard chalk holder. Label holder. Tool holder.
 Hook. See Hat hook. Pulley block hook.
 Horseshoe, J. A. Dunning. 363,986
 Horseshoe, F. & S. A. Ward. 363,925
 Hose cart, J. E. Gillespie. 363,890
 Hubs, shell band for, J. Maris. 364,122
 Hydrant, J. C. Hupferle. 364,180
 Incubator, Williams & Carr. 364,073
 Indicator. See Tuiere indicator.
 Induction coil, J. Ritchie. 363,851
 Ingot mould, compound, E. Wheeler. 363,926
 Ingot moulds, heated funnel for, W. R. Hinsdale. 363,828
 Iron. See Corner iron.
 Jack. See Pegging jack.
 Jewelry, mounting for, G. W. Ryan. 363,915
 Knife. See Cheese knife. Putty knife. Sole channeling knife.
 Knitting machine, circular, J. Adams. 364,201
 Label holder for pigeon holes, etc., E. C. A. Wolmann. 364,196
 Lacing bearing, E. R. Spencer. 364,057
 Lacing hooks, machine for setting, W. Halkyard. 364,014
 Lacing, shirt, Schnitzler & Deutsch. 364,047
 Ladder, M. M. Hughes. 364,173
 Ladder and truck, folding extension, J. E. Gillespie. 363,889
 Lamp extinguisher, automatic, L. C. Kidd. 363,890
 Lamp filaments, repairing incandescent electric, C. Panthouier. 363,900
 Lamp shade support, Sink & Pollock. 363,916
 Lasting tool, J. I. Vick. 364,046
 Lath, ball turning, T. Draper. 363,994
 Level, spirit, G. P. Evelyn. 363,938
 Liquids, apparatus for indicating the speed and quantity of, J. J. Tylor. 363,922
 Lobster trap, J. M. Steward. 363,858
 Lock. See Car lock. Nut lock. Seal lock. Time lock. Whip lock.
 Locomotive coupling, A. Selkirk. 363,856
 Looms, west stop mechanism for, D. Dunn. 364,163
 Lubricator. See Axle lubricator.
 Lumber register, J. Thompson. 364,083
 Mangle and wringer, combined clothes, T. Collier. 363,806
 Metal bars, die for forming grooved, W. A. McCool. 364,125
 Metal drawing machine, W. A. McCool. 364,126
 Meter. See Gas meter. Water meter.
 Mill. See Grinding mill.
 Mines, device for automatically opening and shutting doors in coal, Case & Whitaker. 363,985
 Mould. See Cigar mould. Ingot mould.
 Money changer, W. H. Staats. 364,141
 Mop, J. W. Oulton. 363,908
 Motion, transmitting rotary, E. J. Stoddard. 363,859
 Motor. See Churn motor. Electric motor.
 Musical instrument, mechanical, H. B. Morris et al. 363,841
 Musical instruments, keyboard attachment for, H. Richards. 364,041
 Nail making machine, wire, E. F. Lewis. 364,119
 Nail plate and cut nail, G. T. Walker. 363,866
 Necktie, J. H. Irwin. 364,017
 Necktie, H. Tintrop. 363,862
 Necktie fastening, J. H. Carter. 364,087
 Net for horses, fly, G. W. Kelsey. 364,020
 Non-conducting composition, J. Loftus. 363,824
 Nose rings, tool for making and applying hog, J. Church. 364,089

Numbering apparatus, W. R. Bacon. 363,975
 Nut lock, J. L. Hall. 363,820
 Oatmeal machine, A. W. Woodward. 363,870
 Oranges and other fruit, machine for sizing, A. Ayer. 363,974
 Overshoe, Fry & Benedict. 364,006
 Overshoe fastener, W. Kennedy. 364,022
 Package conveyer, J. M. Smith. 363,857
 Pad. See Collar supporting pad. Furniture pad.
 Paint box, F. E. Heinig. 363,894
 Paint, waterproof roof, Walker & Miller. 364,065
 Pan. See Bed pan.
 Pantograph, C. S. Riche. 364,043
 Pants, F. Kahn et al. 364,115
 Paper box machine, G. H. Cushman. 364,161
 Paper or board, fireproof, J. G. Merrill. 363,905
 Parquetry, C. J. B. Jensen. 363,860
 Pegging jack, I. Miller. 363,906
 Petroleum burner, crude, F. E. Thomas et al. 364,062
 Photographic camera and plate holder, combined, J. Loeber. 363,838
 Piano action, upright, S. Brambach. 363,947
 Pigeonhole block for keeping checks and vouchers, M. L. Sage. 363,852
 Pin. See Separable pin.
 Pipe wrench and cutter, W. E. Clayton. 364,030
 Planter, corn, A. Winston. 364,155
 Platform. See Vehicle spring platform.
 Platform adjustment, W. F. Olin. 364,036
 Plow, W. Strait (r). 10,839
 Plow wheel, H. T. Owens. 363,963
 Pool and billiard tables, attachment for, T. E. Mather. 363,837
 Post. See Fence post. Hitching post.
 Pot. See Coffee pot.
 Power press, N. C. Stiles. 364,142
 Press. See Baling press. Cider or wine press. Power press.
 Printing machine, box, J. Casy. 363,886
 Printing machine delivery mechanism, A. J. Becker. 363,883
 Printing presses, automatic perforator for, G. & R. Kennedy. 364,021
 Printing web fabrics, process of and machine for, J. Macnab. 364,029
 Pulley block hook, T. Barber. 364,079
 Pulp ware, machine for the manufacture of, H. Fairbanks. 364,096
 Pump, A. Warth. 364,088
 Pump, force, Kendig & Landis, Jr. 363,897
 Pump, measuring lift, L. D. & P. W. Miller. 363,840
 Punching machine, metal, S. I. Snyder. 363,917
 Putty knife, F. J. Brauch. 364,159
 Railway frog, J. Green. 364,102
 Railway gate, O. H. P. Cornell. 363,808
 Railway gate, T. H. Fennell. 364,165
 Railway gate, automatic, J. T. Phillips. 363,845
 Railway route abstract, T. F. Nelson. 363,907
 Railway safety track, N. C. Locke. 364,121
 Railway signal, B. H. Gedge. 364,069
 Railway spike, A. Welsh. 364,071
 Railway tracks, apparatus for watering, J. L. Fisher. 364,001
 Railway water tank, C. C. Wrenshall. 363,934
 Railways, automatic stop for abutting rails of, V. Angerer. 364,200
 Railways, conduit for traction, Regar & Moock. 363,912
 Railways, grip apparatus for cable, N. Abbott. 363,788
 Railways, portable frog or car replacer for, W. O. Cooke. 364,091
 Rake. See Hay rake.
 Range, P. Klotz. 364,116
 Register. See Lumber register.
 Riveting machine, Thomson & Unbehend. 363,921
 Riveting machine, J. J. Unbehend. 363,923
 Roaster, S. C. Drumheller. 363,813
 Rolling car wheel tires, machine for, J. Munton. 363,843
 Rolls, manufacture of, J. S. Atkinson. 364,157
 Roofing, metallic, A. Wightman. 364,072
 Rosettes, constructing, E. Whitmore. 363,929
 Rotary engine, L. F. Davoll. 364,098
 Ring. See Curtain ring. Earring.
 Ruching for decorative purposes, E. A. Bohm. 364,085
 Ruling machine, engraver's, F. L. Bailey. 363,942
 Sad iron heater, J. H. Watson. 364,069
 Saddle, harness, H. Becker. 363,882
 Saw, J. J. Ralya. 364,181
 Sawmill dog, A. B. Landis. 363,831
 Sew setting machine, A. Schnoor. 363,854
 Saws, machine for sharpening circular, Mix & Marvin. 364,185
 Scale, spring, E. A. Witherell. 363,873
 School seat, W. M. Hickman. 363,895
 Scourer. See Grain scourer.
 Scribing attachment, W. F. Searjeant. 364,049
 Seal lock, J. H. Fisher. 363,815
 Seat. See Bicycle seat. Car seat. School seat. Velocipede seat.
 Seeder and fertilizer distributor, combined, I. N. Franklin. 364,002
 Separable pin, J. F. Foley. 363,816
 Sewage and drainage, system for collecting, separating, and disinfecting, T. Dark. 363,810
 Sewage, apparatus for treating, W. R. Hinsdale. 363,826
 Sewing machine, buttonhole, T. F. Hart. 363,821
 Sewing machine feeding mechanism, J. W. Dewees. 363,811
 Sewing machine ruffing attachment, J. S. Sackett. 364,188
 Shafts and ordnance, manufacture of, J. H. Flagler. 364,088
 Shells and tubes, device for drawing, A. Rais. 363,910
 Shirt bosoms, making, J. G. Wallach. 364,066
 Shovel handle, J. Pfeifer. 364,039
 Signal. See Railway signal.
 Signal box, H. A. Chase. 363,948
 Sled, W. Schau. 364,046
 Sled, bob, J. P. Rollins. 364,137
 Snow plow, J. G. Roberts. 364,135
 Sodium carbonate by ammonia, process of and apparatus for making, H. Frash. 363,952
 Sole channeling knife, E. P. Seward. 364,139
 Sower, seed, M. Freeman. 364,005
 Speaking tube, carriage, G. A. Beach. 363,979
 Spindle step, C. S. Trask (r). 10,840
 Spring. See Car spring.
 Square, miter bevel, and level, combined, J. Carson. 363,988
 Stamps, etc., protector for postage and other, H. W. Birge. 363,795
 Stanchion, cattle, D. Manwaring. 364,030
 Stanchion, cattle, J. S. McCartney. 363,902
 Staple drivers, device for automatically supplying staples to independent or detachable, I. W. Heysinger. 363,957
 Steam and water boiler, J. C. & G. B. Gibbons. 364,100
 Steam generator, multiple, I. M. Chase. 363,802
 Stirring or mixing apparatus, L. Stauffert. 364,059
 Stone, etc., composition for artificial, A. Von Gersheim. 363,864
 Stopper fastener, G. H. Wetzel. 363,870
 Stove, gas or oil heating, N. A. McCary. 364,124
 Stovepipe shelf, E. H. Daniels. 363,809

Stump extractor, J. Cornelius. 364,092
 Supporter. See Abdominal supporter. Garment supporter.
 Suspenders, D. O. Fosgate. 364,168
 Swing, J. O. Lyon. 364,182
 Table. See Embalming table.
 Tableware, article of, G. Leonard. 364,025
 Tank. See Railway water tank.
 Tea kettle, I. Van Hagen. 364,151
 Telegraph system, multiple, C. Selden. 363,969
 Telephone desk, J. D. Richardson. 364,133
 Thill coupling, McMillan & Hill. 364,032
 Thill coupling, J. Torrance. 364,144
 Thrashers, dust conveyer for, L. A. Miller. 364,184
 Tie. See Umbrella tie.
 Tile, illuminating, J. Jacobs. 364,113
 Time lock, E. & H. C. Stockwell. 363,918
 Time lock, E. Stockwell. 363,920
 Tire blooms, machine for shearing, J. Munton. 363,842
 Toboggan slide, L. H. Rogers. 398,914
 Tool handle, J. G. Fischer. 364,097
 Tool holder, T. Barber. 364,080
 Tooth, artificial, D. D. Weisell. 364,070
 Traction engine, J. Price. 363,968
 Transom, J. C. Brown. 363,884
 Trap. See Lobster trap.
 Trousers stretcher, J. B. Hale. 364,012
 Truck, hand, J. Ash. 363,940
 Tube. See Speaking tube.
 Tube expander, T. Beverly. 363,980
 Tug attachment, hame, C. C. Schwauer. 364,048
 Tuiere, C. Gregory. 363,819
 Tuiere indicator, furnace, T. Shaw. 364,050
 Type distributing apparatus, A. A. Low. 363,836
 Type writers, etc., attachment for, W. McDermott. 363,903
 Type writing machine, A. W. Houchin. 363,896
 Type writing machine, T. D. Worrall. 363,932
 Umbrella, folding, J. W. Riddle. 363,859
 Umbrella tie, H. C. Bailey. 363,943
 Valve gear, steam engine, F. M. Rites. 363,968
 Valve for water service pipes, stop, D. Kearney. 364,018
 Valve, radiator, C. R. Behnke. 363,884
 Valve, safety, W. Simpkin. 364,052
 Valve, throttle, W. T. Willard. 363,872
 Vapor burner, G. M. Voltz. 363,863
 Vat. See Cheese vat.
 Vehicle spring platform, H. W. Van Antwerp. 364,150
 Vehicle top, B. F. Nye. 364,034
 Velocipede seat, J. Harrington. 364,171
 Vending apparatus, G. A. Macbeth. 364,028
 Ventilator, J. Williams. 364,074
 Vignetter, H. Kuhn. 363,961
 Washing machine, Fauntleroy & Osborn. 364,000
 Washing machine, J. Heavilin. 363,824
 Watch, G. E. Hart. 364,105
 Watch balances, manufacture of, G. E. Hart. 364,107
 Watch case, C. K. Giles. 363,817
 Watch case pendants, manufacture of, G. E. Hart. 364,108
 Watch dial, G. E. Hart. 364,109
 Watch movement plate, G. E. Hart. 364,110
 Watch, stem winding, G. E. Hart. 364,105
 Watches, transparent dial for, C. Humbert, Fils. 363,959
 Water closets, floor connection for, B. Havanagh. 363,956
 Water meter, piston, H. C. Ahrbecker. 363,973
 Weatherboard gauge, J. H. Smith. 364,056
 Welding links, die for, J. B. Baugh. 363,978
 Wells, device for raising oil from oil, J. A. Boals. 364,064
 Wheel. See Car wheel. Plow wheel. Fifth wheel.
 Whiffletree coupling, H. Streif. 364,189
 Whip, E. B. Knapp. 364,023
 Whip lock, E. J. Colby. 363,960
 Windmill tower, H. C. Addis. 364,077
 Window shade fixture, J. W. Barnes. 363,791
 Windows and doors, fly trap and screen for, R. J. Tarbell. 363,861
 Wire stretcher, D. Cleaver. 363,805
 Wire stretcher, W. B. West. 364,152
 Wrench. See Pipe wrench.
 Wrench, W. C. Marr. 363,901
 Yoke, ox, S. Woodward. 363,876

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