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 This is for our information, and not for publication.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.

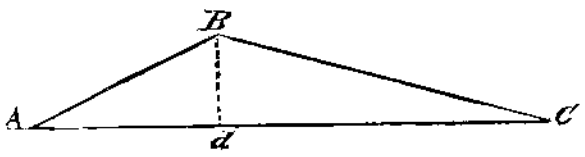
Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

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.

(1) T. H. & W. S. ask for the rule for determining the power exercised by an elbow joint press. A. Let A B C be the elbow joint system. Measure the distances A C, A *d*, and *d* B. These will of



course vary for every position of the press. Then to obtain the end pressure use the following formula, in which R denotes the pressure, and P the power applied at B in the direction B *d*.

$$R = P \cdot \frac{d\,C}{A\,C} \cdot \frac{A\,d}{d\,B}$$

If the arms A B and B C are of equal length, the formula reduces to $R = P \frac{A\,d}{2\,d\,B}$

(2) H. N. asks the quickest and best way to drill holes for water pipes in rough plate glass. A. Use a hardened (file temper) drill, with spirits of turpentine and camphor to make the drill bite. A broken file in a breast brace will do good work if a power drill is not obtainable.

(3) W. H. H. asks if old putty in old window sash can be softened so as to be easily taken out. A. Take 1 part American pearl ash, 3 parts stone quick lime; slake the lime, add the pearl ash, and bring the whole to the consistence of paint. Apply it to the sash, and let it remain for 12 hours, when the putty will be softened.

(4) J. B. C.—The polar position of the sun has not yet been exactly located. Its approximate polar point among the stars may be assigned, but is of no value in astronomical work, and is not mentioned in books.

(5) C. H. K. writes: I have a bell weighing probably 1,000 pounds, that has cracked from the mouth or rim upward some 14 inches. Can I save it and retain its original tone by drilling at end of crack and sawing out? A. Drill a quarter inch hole at the end of the crack, and saw the crack open, so that the vibrations will not produce a contact of the edges. This will change the tone of the bell. It must be struck on the opposite side from the crack.

(6) H. P. S. writes: I have in use a number of paper lamp shades for coal oil lamps which are yellow and sooty on the inside, but otherwise good. Is there any white composition with which I can paint the inside so as to increase the reflection? A. An oxide of zinc paint might be used. Cannot white cardboard be pasted on the inside of the shade?

(7) M. W. C. asks: 1. How can I take the rust from a tin lantern and make it bright? A. If the rust is not too deep, it can possibly be removed by treating with kerosene oil, or mix the oil and rub with a little rouge. 2. I have an electric lamp, and every few nights after putting it out the chimney breaks. Can you tell me how to prevent it? A. Anneal the glass by putting into cold water and gradually heating until boiling, then cool. 3. How can I flavor home made chewing tobacco and make it sweet? A. Use glycerine.

(8) E. D. A. asks the specific gravity of linseed and cottonseed oil. Also, the boiling degree, and probable adulteration. A. Linseed oil has a gravity of 0·93515, and boils at 600° Fah. The gravity of cottonseed oil is 0·9306. Both are extensively adulterated, the former with the latter, and also with resin oil, fish oil, and others. The percentage of adulteration can only be generally estimated.

(9) H. F. S. asks (1) how to wind an induction coil for a telephone, and if a telephone will work without one. A. The primary of a telephone induction coil is wound with No. 18 to No. 24 wire to a resistance of ½ ohm. The secondary is wound around this with No. 36 wire and a resistance of 80 ohms. A telephone will work without one, but not so satisfactorily for long distances. 2. What effect has an induction coil on a telephone line, and how is the difference effected? A. The induction coil generates a line current of high tension and small quantity, which is not affected by resistance to the same extent that a battery current would be. The result is effected by the inductive action of the primary on the secondary.

(10) O. P. asks which travels the faster, light or electricity, and at what rate per second? A. Electricity under favorable circumstances has been found to travel at the rate of 288,000 miles per second. Light travels at 190,000 miles per second. Under less favorable circumstances, electricity travels with comparative slowness.

(11) F. B. asks how to make a paste harness blacking. A. Dissolve by heat 4 ounces glue or gelatine and 3 ounces gum arabic in ¾ pint of water; add 7 ounces molasses and 5 ounces ivory black in very fine powder, gently evaporate until of proper consistence when cold, stirring all the time. Keep in corked bottles.

(12) S. S. H. writes: I want to find out the best wash or lotion for tightening the wrinkled skin on hands and face. A. Take of oil of almonds 4 ounces avoirdupois, hog's lard 3 ounces, spermaceti 1 ounce; melt, add of expressed juice of horse leek 3 Imperial fluid ounces, and stir till the mixture solidifies by cooling. A few drops of lavender or eau de cologne are added to scent the mixture.

(13) W. L. R. asks how to make a powder for silver plating. By simply moistening it, it gives a good plating. A. Mix 1 part chloride of silver with 3 parts pearl ash, 1½ part common salt, and 1 part whiting, and rub the mixture on the surface of brass or copper (previously well cleaned), by means of a piece of soft leather or a cork moistened with water and dipped into the powder.

(14) W. I. asks: How am I to separate the gelatine contained in meat? For instance, I take a certain quantity of beef, and boil it down; How am I to get rid of the gelatine in the concentrated product? A. On a small scale, the gelatine can be precipitated by alcohol, or for manufacturing purposes see the U. S. Dispensatory under title of extract of meat, where the entire method of manufacture is given.

(15) C. De V. asks how bottlers fine their liquids so that they will not be cloudy. A. For this purpose 1 ounce isinglass is put into 1 quart weak vinegar or, still better, hard beer, and when dissolved, a sufficient quantity of good beer may be added to make 1 gallon. This mixture is called finings, and 1 to 2 pints of it is the proper quantity for a barrel. When used for other drinks besides beer, dilute with the special drink which it is desired to fine. Bottling machinery and carbonic acid generators are made a specialty by a number of firms.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

May 17, 1887,

AND EACH BEARING THAT DATE.

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

Alarm. See Fire alarm.
Animal trap, J. C. Gould ... 362,952
Annealing furnace, B. Howell ... 363,282
Annunciator, E. D. Clapp ... 363,315
Asbestine leaden texture, I. Steinhart ... 363,018
Asphalt concrete for paving purposes, apparatus for the manufacture of, H. Franke ... 363,132
Atomizer, G. Kneuper ... 363,247
Automatic brake, C. F. Moore ... 363,251
Automatic switch, J. C. Loury, Jr ... 363,075
Awning, W. R. Mason ... 363,155
Axle nut attachment, G. W. Amos ... 362,922
Axle setter, L. G. Harding ... 363,135
Bag. See Satchel bottom bag. Traveling bag.
Bag holder, J. Saurer ... 363,172
Bag lock, Jones & Mains ... 363,337, 363,338
Bag or pocket book frames, fastening for, C. Blust ... 363,042
Bale tie hook, E. L. Clock ... 363,116
Baling press, E. C. Sooy ... 363,012
Baling press, C. E. Whitman ... 363,269
Baling press, Poor & Woulf ... 362,994
Baling press and feeder, combined, Thompson & Isham ... 363,095
Balloons, means and apparatus for propelling and guiding, C. R. E. Wulf ... 363,037
Bar. See Clothes bar.
Bath tub, W. Cliff ... 363,048
Battery. See Pocket battery.
Bell cord coupling, D. S. White ... 363,266
Bench. See Wash bench.
Bengal lights, composition for, C. Gerhard ... 363,224
Binder, temporary, T. H. Brown, Jr ... 363,277
Blackleading machine, G. E. Lloyd ... 362,983
Blank depository, C. A. Rieder ... 363,033
Blast apparatus, T. O. Johnson ... 363,294
Blasting barrel for extracting tree stumps, C. Heaton ... 363,233
Blocks, machine for cutting round, O. C. Fenlason ... 363,222
Bobbin or cop tube, Essex & Ball ... 363,326
Boiler. See Steam boiler.
Bolt, H. H. Lockwood ... 363,074
Bolt fastener, T. Taylor ... 363,021
Book holder and cover, C. H. Bartlett ... 362,925
Boots or shoes, edge plane for trimming the sole edges of, A. J. Avery ... 363,107
Boots or shoes, sole and heel edge blacker for, O. F. Drew ... 363,051
Borer and reamer, combined, J. P. Champion ... 362,934
Box. See Cigar box. Knockdown box.
Bracelet, A. Williams ... 363,309
Brake. See Automatic brake. Car brake. Sleigh brake.
Branding apparatus, Meyer & Illig ... 363,160
Bridge gate, J. S. Philip ... 363,257
Broach, F. W. Gesswein ... 363,059
Bucket, dinner, B. K. Galbreth ... 362,948
Buckle, harness, Willis & Cowen ... 363,036
Burner. See Gas burner. Vapor burner.
Burning bagasse or other wet material, apparatus for, R. H. Yale ... 363,270
Button, J. Costello ... 363,285
Buttonholes, machine for stitching and cutting, F. Egge ... 362,945
Button machine, W. P. Devine ... 363,214
Button setting machine, J. H. Vinton ... 363,349
Button stapling machine, E. O. Ely ... 363,054
Cable, chain, J. M. Dodge ... 363,216
Cable, chain, W. D. Ewart ... 363,288
Calendar, indicating, A. L. Sewell ... 363,088
Camera. See Photographic camera.
Can. See Sheet metal can.
Can filling machines, automatic feeder for, Hutson & Jones ... 363,068
Candy in bars or sticks, manufacture of rock, J. H. Barker ... 363,195
Car brake, B. F. Crow ... 363,319
Car brake, automatic, R. J. Wilson ... 363,310
Car coupling, P. Brown ... 363,112
Car coupling, C. Lunt ... 363,341
Car coupling, J. W. Newton ... 363,237
Car coupling, J. Rawles ... 362,996
Car coupling, N. Solcer ... 363,303
Car coupling, N. E. Springsteen ... 363,262
Car heater, street, J. L. Brink ... 362,928
Car mover, E. Duplessis ... 363,124
Car, stock, A. G. Minges ... 363,163
Car windows, dust guard for, T. H. Duzan ... 363,125
Cars, watering apparatus for cattle, F. E. Canda ... 363,115
Card holder, G. M. Burgess, Jr ... 363,206
Carding engines, comb plate for doffer combs of, J. W. Bonsack ... 363,199
Carding machines, fleece dividing attachment for, H. D. Bosson ... 363,200
Carpet stretcher, M. B. Spackman ... 363,013
Carriage spring, C. M. Brown ... 363,203
Carriage top, C. C. Lawrence ... 363,147
Cart, road, A. L. Fellows ... 363,221
Cart, road, C. W. Jewett *et al* ... 363,241
Cartridge shells, implement for capping, J. A. Scott ... 363,175
Case. See Measure case.
Caster, furniture, R. Claughton ... 363,047
Casting compound ingots, mould or apparatus for, E. Wheeler ... 363,032
Cement coated nail, I. Copeland ... 362,940
Chair. See Railway rail chair.
Chair back support, W. J. Cowing ... 363,211
Check row attachment, J. W. Barber ... 362,924
Chimney, J. A. Hodel ... 363,236
Churn dasher, S. C. Harrison ... 363,231
Cigar box, L. Haas ... 363,064
Cigar rolling machine, O. Hammerstein ... 363,065
Cigar shaper, E. W. Seymour ... 363,301
Cleaner. See Railway track, frog, and switch cleaner.
Clevis, E. I. Morey ... 363,252
Clock cover, W. C. Camp ... 362,932
Clocks, electric striking device for, S. C. Dickinson ... 363,215
Closet seat, W. Jacobus ... 362,969
Clothes bar, folding, D. M. Pickett ... 363,081
Clutch, G. W. Shamp ... 363,006
Coffin cap lifter, C. A. Bailey ... 363,312
Coin tray, C. E. Howe ... 363,239
Combination lock, G. R. Boyce ... 363,110
Commutator adjuster, automatic, E. Thomson ... 363,184
Compass and marine indicator, recording, R. W. F. Abbe ... 363,039
Compass, instrument for ascertaining the variation of the, H. Harild ... 362,980
Concentrator for artificial lights, H. H. Smith ... 363,010
Cooler for beer and other liquids, W. Sloppz ... 363,177
Cooling and condensing apparatus, E. Theisen ... 363,084
Cores, method of and apparatus for forming armature, F. Wynne ... 363,106
Cotton press, Meador & Carl ... 363,159
Counter seat, adjustable, F. W. Gowell ... 363,226
Coupling. See Bell cord coupling. Car coupling. Shaft coupling. Thill coupling.
Crate, folding, E. B. Merritt ... 363,077
Crimping machine, J. W. D. Fifield ... 363,055
Cultivator and planter, combined, W. R. Parnell ... 363,299
Cultivators, attachment for wheel, W. R. Brown ... 363,278
Cup. See Grease cup.
Cut-off, adjustable, W. F. Parish ... 363,255
Cutter. See Lawn cutter. Sheet metal scroll cutter.
Cyclometer, M. H. Downes ... 363,218
Damper regulator for furnaces, stoves, etc.; automatic, C. L. Ridgway ... 363,346
Damping machine, F. L. & S. G. Goss ... 363,326
Dental engine, W. W. Grant ... 363,291
Dental flasks, etc., press for, M. M. Maine ... 363,152
Derrick, J. B. Wallace ... 363,101
Digger. See Potato digger.
Dish drainer, C. C. Cannom ... 363,045
Distilling wood, apparatus for, E. J. Burrell ... 363,313
Door hanger, J. Charlton ... 362,937
Door hanger, J. H. Lawrence ... 363,148
Door securer, H. F. Keil ... 363,145
Drawer, J. W. R. Johnson ... 363,242
Drawing table, Kidder & Long ... 363,339
Drawing table, T. W. Mann ... 363,154
Drug mixing machine, M. J. Jones ... 362,971
Ear stud, F. Wessel ... 363,030
Eaves trough angle or miter, L. M. Bowers ... 363,044
Electric generator, self-exciting alternate current, J. W. Easton ... 363,126
Electric lighting systems, indicator for, W. J. Hammer ... 363,333
Electric machine, dynamo, J. W. Easton ... 363,128
Electric machines, method of and apparatus for detecting short circuits in dynamo, J. W. Easton ... 363,129
Electric machine, safety contact brush for dynamo, J. W. Easton ... 363,127
Electric motor, alternating current, E. Thomson ... 363,185
Electric switch, E. Thomson ... 363,183
Electrical matting, A. H. Freeman ... 363,290
Electrical switch, W. J. Hammer ... 363,334
Electrotypes, blackleading matrices for, E. A. Blake ... 362,927
Elevator, G. M. Davis ... 363,121
Elevators, automatic safety appliance for, E. J. Shaw ... 363,302
Engine. See Dental engine. Steam engine.
Engine, S. Robinson ... 363,085
Etching zinc and other metal plates, L. W. Kipp ... 362,974
Extractor. See Tobacco plug extractor.
Eyeglass, M. C. Brackett ... 363,201
Eyeglasses, manufacture of cases for, W. B. White ... 363,267
Eyelet tape, W. Pretty, Jr ... 362,995
Farm gate, A. C. Baumwart ... 363,108
Faucet, weighing, T. J. Black ... 363,273
Feed rack, D. W. Shorter ... 363,089
Feeder, coagulant, J. W. Hyatt ... 362,966
Felt, manufacture of, A. Dolge ... 363,217
Fence and water gate, combined, F. D. Wilson ... 363,350
Fence, flood, P. H. More ... 362,988
Fence machine, G. J. Cline ... 363,316
Fence, metallic, W. W. Hamilton ... 363,227
Fence tightener, wire, L. A. Butts ... 363,314
Fence, wire, J. G. Schiller ... 363,003
Fertilizer distributor and seed drill, combined, C. D. Daniels ... 362,943
Fifth wheel, H. Hafker ... 363,134
Filter, water, W. H. Cummings ... 363,120
Filtering, H. Stockheim ... 363,019
Fire alarm, A. W. Geer ... 362,949
Firearm, breech-loading, V. Bovy ... 363,043
Fire escape ladder, Hanes & Shaver ... 362,959
Fire extinguisher, J. Tonge ... 363,187
Fireplace and flue, portable, J. W. Cooper ... 363,210
Fish trap, J. M. Treat ... 363,263
Flowers from fur, manufacture of imitation, E. Friedlander ... 363,058
Flushing tank, T. H. Platt ... 363,166
Frame. See Photographic printing frame.
Fruit gatherer, E. E. Evans ... 363,220
Fruit picker, B. M. Moyer ... 363,078
Furnace. See Annealing furnace. Gas generating furnace. Glass melting furnace. Welding furnace.
Furnace, S. G. Lane ... 362,979
Furnace, J. Springer ... 363,261
Furnace, E. W. Tucker ... 363,264
Gauge. See Water gauge. Woodworking machine gauge.
Game apparatus, O. N. Kyle ... 363,146
Garments, apparatus for cutting, E. Hood ... 363,237
Gas burner, J. Irwin ... 362,988
Gas device, safety illuminating, J. H. Musgrave ... 363,343
Gas generating furnace, H. B. Van Benthuysen ... 363,023
Gases, process of and apparatus for charging liquids with, G. Schenck ... 363,173
Gas regulator and cut-off, T. J. Kieley ... 362,973
Gate. See Bridge gate. Farm gate. Railway gate. Swinging gate. Toll gate.
Gate, E. E. Hess ... 362,962
Gate, J. H. Uhle ... 363,099
Gate closer, W. B. Nelson ... 363,253
Generator. See Electric generator. Hydrocarbon generator.
Glass melting furnace and regenerator, F. Heintz ... 362,961
Glassware, fancy, J. Webb ... 363,190
Glove fastener, S. W. Shorey ... 363,347
Glue, apparatus for evaporating and bleaching, A. J. Ward ... 363,026
Gold washing machine, H. G. Blodget ... 363,198
Grader, road, H. G. Moats ... 363,342
Grain and seed, machine for gathering, L. W., Jr., & R. E. L. Leavell ... 363,075
Grain, etc, apparatus for torrefying, J. F. Fordred ... 363,057
Grain binders, knotter for, W. N. Whiteley *et al* ... 363,268
Grain binders, sheaf carrier for, W. Butterfield ... 362,930
Grain conveyer, portable, A. F. Carlson ... 363,282
Grain drill tube, T. R. Crane ... 363,286
Grain or cereals, preparing, J. Fordred ... 363,056
Grate, A. S. Newby ... 363,344
Grate and fire back for fireplaces, J. W. Wolfe ... 363,308
Grates and fireplaces, extension screen for, J. G. Smith ... 363,178
Grease cup, compression, D. H. McCarty ... 363,156
Gun barrels, device for cleaning, S. H. Heginbottom ... 363,137
Gun sight, G. W. Hadley ... 362,956
Halter, W. H. Wheeler ... 363,033
Halter trimming, A. B. Arnold ... 363,311
Hammock, V. P. Travers ... 363,096
Hammock support and canopy top, combined, T. Ferguson ... 363,223
Hanger. See Door hanger.
Harmonica, A. P. S. Jones ... 362,970
Harrow, W. P. Bonham ... 363,274
Harrow, J. A. Morsman ... 362,990
Harrow, two-wheeled, Glass & Kimball ... 362,950
Harvester, G. H. Spaulding ... 363,014
Hasp lock, F. W. Mix ... 362,986
Hasp lock, J. Shaw ... 363,008
Hat felting machine, J. C. Grant ... 363,329
Heat, generating, T. H. Champion ... 362,935
Heater. See Car heater. Vehicle heater. Water heater.
Heddle for cross weaving, C. A. Littlefield ... 363,072
Hides, machine for treating, Lichtenberg & Baloun ... 363,295
Hobby horse, Crandall & Snyder ... 362,941
Hoisting apparatus, C. R. Traxler ... 363,097
Hositing bucket, B. F. Wilson ... 363,105
Holder. See Bag holder. Book holder. Card holder. Music and book holder. Music or paper holder. Pencil and crayon holder. Spool holder.
Hoof trimming machine, R. Parrish ... 363,256
Hook. See Bale tie hook.
Horse power for stackers, A. H. Hoffmann ... 363,139
Horseshoe, detachable, C. V. Geschke ... 363,225
Hot water heater, circulating, Owen & Fuller ... 363,165
Hydrocarbon generator and burner, J. McHale ... 362,984
Ice making and blocking machine, G. F. Knox ... 363,248
Incubator thermostat, C. L. Wells ... 363,307
Indicator. See Station or street indicator.
Inhaler, R. B. Heintzelman ... 363,087
Initial ring, interchangeable, W. Meerbott ... 363,076
Injector, L. Schutte ... 363,004
Insulated electric conductors, covering, J. Tatham ... 363,182
Jack. See Lifting jack. Stone laying jack. Wagon jack.
Joint. See Rail joint. Railway joint.
Journal bearing, H. Brown ... 363,204
Knee pad and protector, A. G. Ridgill ... 363,170
Knitting machine needle, G. Malpass, Jr ... 363,153
Knockdown box, H. P. Huston ... 363,143
Label for packing cases, reversible, C. M. Benninghaus ... 362,926
Lace fastener, W. M. Brinkerhoff ... 363,276
Ladder, fire, L. Harris ... 363,066
Lamp chimneys, tempering, M. Schreiber ... 363,087
Lamp, oil, C. Colahan ... 363,284
Lamps, device for attaching and detaching electric, W. J. Hammer ... 363,332
Lamps, etc., suspension device for, J. D. Griswold ... 363,063
Lantern, F. Meyrose ... 363,161
Last, T. A. Kelly ... 363,069
Lasting machine, F. Chase ... 363,283
Lathe, watchmaker's, E. Rivett ... 363,000
Lawn cutter, H. L. Sprague ... 363,260
Leather skiving machine, J. N. Whitcomb ... 363,265
Level, spirit, J. Holly ... 363,140
Lever press, sector, G. W. Grader ... 362,953
Lifter. See Coffin cap lifter.
Lifting jack, A. K. Bagwell ... 363,194
Lifting jack, J. A. Dill ... 363,050
Loading apparatus, P. H. Grimm ... 363,062
Lock. See Bag lock. Combination lock. Hasp lock. Nut lock.
Lock for pocketbook or satchel frames, M. C. Schmidt ... 363,174
Loom heddle, C. K. Sawyer ... 363,002
Loom shuttles, thread guiding and tension regulating device for, J. C. Sergeson ... 363,005
Looms, reed supporting device for, O. S. Lee ... 362,980
Lumber piler, C. E. Dunshee ... 363,287
Mail bag fastener, S. A. Field ... 363,130
Measure case, tape, W. Keuffel ... 363,070
Mechanical movement, H. K. Whitner ... 363,103
Metals by the direct application of the electric current, process of and apparatus for working, De Benardos & Olszewski ... 363,320
Milk can cover, O. Smeader ... 363,090
Mill. See Rolling mill.
Mirror, folding, P. Wiederer ... 363,102
Mitering machine, J. T. Criswell ... 363,119
Moulding machine, marble, Riehle & Hatcher ... 362,999
Mortising machines, chain cutter for, C. H. Douglas ... 363,123
Mortising tool, F. V. Phillips ... 363,060
Moss, curing, C. F. Lottman ... 363,150
Motor. See Electric motor.
Motor device, alternating current, E. Thomson ... 363,186
Mowers, grass receiver for lawn, H. H. Tapper ... 363,093

Mowing machine, A. Ellis 362,946
Music and book holder, W. J. Hammer 363,228
Music or paper holder, E. R. Horton 363,142
Musical instruments, pneumatic action for, Pritchard & Ahlstrom 363,062
Nail. See Cement coated nail.
Necktie fastener, J. G. Davy 363,212
Net, hoisting, Z. S. Burrell *et al.* 363,113
Nitro-cellulose, granular, R. Bernstein 363,197
Numbering tickets, apparatus for, W. R. Bacon 363,193
Nut lock, Bay & Fowler 363,196
Nut lock, P. Dunn 363,052
Nut lock, J. W. Spafford 363,259
Oranges, apparatus for assorting, G. S. Riggs 363,084
Organ, G. B. Kelly 363,245
Pad. See Knee pad.
Paper, apparatus for drying coated sheets of, Hooper & Hollingsworth 363,335
Paper cleaning compound, W. J. Dane 362,942
Paper trimming and pasting machine, J. D. Hooper 363,141
Paring and coring machine, apple, W. & H. A. Tripp 363,022
Pasteboard mailing tube, G. E. Grimm 363,061
Pencil or crayon holder, H. D. Caruso 362,963
Perforating seat frames, machine for, J. M. Nash. 363,164
Photographic camera, J. Krementz 362,978
Photographic printing frame, G. H. Chesebro 363,209
Pianofortes, keyboard for, W. H. Ivers 363,240
Picker. See Fruit picker.
Pin. See Safety pin.
Pipes, covering for steam, H. F. Watson 363,028
Plane, hand or jack, L. A. Dearth 363,213
Planing and matching machines, guide for, W. M. Dwight 363,322
Planter, check row corn, I. N. Tusing 363,306
Planter, corn, Shanks & Daily 364,007
Plow, C. Billups 363,109
Plow, double shovel, T. W. Palmer 363,298
Plow, side hill, E. W. Horton 363,238
Pocket battery, L. T. Stanley 363,304
Potato digger, G. M. Clark 363,117
Potato digger, E. Traxler 363,098
Power. See Horse power.
Press. See Baling press. Cotton press. Lever press.
Pressure and heat regulator, automatic steam, O. B. Brann 363,275
Printing, C. T. Moore 362,987
Printing bronze on plush, Finger & Menzel 363,131
Printing machine, duplex oscillating, O. B. Reynolds 362,998
Printing machines, ink roller adjustment for, F. L. & S. G. Goss 363,327
Printing machines, sheet delivery for, F. L. & S. G. Goss 363,328
Propeller, child's, F. Snyder 363,011
Propulsion of vessels, J. H. Kates 363,244
Pump, H. A. French 362,947
Pump excavator, M. F. Brainard 363,202
Pump, sirup, R. E. Huff 363,336
Rack. See Feed rack.
Rail joint, L. Anderson 363,040
Railway gate, automatic, C. R. Gavit 363,133
Railway joint, Hall & Mahoney 362,958
Railway rail chair, I. A. Perry 363,167
Railway switch, O. E. Swartz 363,348
Railway tie, L. Taylor 363,020
Railway track, frog, and switch cleaner, C. M. Ingersoll 362,967
Railways, device for paying rebates on, C. S. Westbrook 363,031
Railways, system of electrical distribution for, McElroy & Nicholson 363,250
Rake. See Wheel rake.
Reflector, safety sight feed, W. S. Getchell 363,080
Register, border, and box, combined, H. K. Tallmage 363,181
Regulator. See Gas regulator. Pressure and heat regulator. Temperature regulator.
Ring. See Initial ring.
Rolling mill, iron, W. G. Howell 363,293
Ruler for sign writers, parallel, A. J. Walker 363,025
Safe, vault, etc., W. Corry 363,118
Safety pin, D. A. Carpenter 363,208
Sails, furling top, W. T. Loveland 363,340
Sand moulds, core guide for, C. Herman 363,138
Saline solutions, apparatus for cooling, W. B. Cogswell 362,938
Sash fastener, A. P. Butts 362,931
Sash fastener, J. Chantrell 362,936
Satchel bottom bag, J. L. Havlin 363,232
Sawmills, feed and pressure mechanism for, D. C. Prescott 363,169
Saw tempering and straightening machine, E. C. Atkins 363,271
Saw tempering and straightening machine, A. Maculen 363,296
Sawing machines, feeding device for circular, D. S. Abbott 362,921
Scaffolds, shield for bearing bars of painters', M. F. Smith 363,179
Scale, automatic grain, P. O. Pederson 362,992
Scissors or shears, H. Deichmann 363,049
Screen, R. G. Rice 363,258
Screw machine, A. Johnston 363,144
Seat. See Closet seat. Counter seat.
Seeding machine, broadcast, C. Easterling 363,053
Shaft attachment, vehicle, Hare & Sproul 363,230
Shaft coupling, safety, R. C. Spinks 363,015
Shafting, clutch and stop motion for, M. O. Rehfuss 362,997
Shank stiffener, C. F. Baker 362,923
Sheet metal can, E. Norton 362,991
Sheet metal, ornamenting, T. W. Burger 363,205
Sheet metal scroll cutter, A. O. Kittredge, 362,975 to 362,977
Shirt neckband, W. Husband 362,965
Shutter fastener, J. A. Burr 363,207
Signal flag staff, Price & Russell 363,345
Sleigh brake, O. A. Gordon 362,951
Sleigh runner, S. C. Brownell 363,279
Soldering machine, can, W. D. Brooks (r) 10,835
Spinning machine spindle support, W. F. Draper. 362,944
Spinning machines, etc., top drawing roller for, J. Wilcock 363,035
Spool holder, F. J. Hall 363,330
Spool holder, M. S. Keator 362,972
Spout, sap, C. A. Burr 363,280
Spring. See Carriage spring.
Springs, machine for fastening the extremities of spiral, H. Spuhl 363,092
Square, folding, E. Douglas 363,321
Staple fastener, F. A. Smith, Jr 363,001
Starch polish, Hochhacker & Sulzer 363,235
Station or street indicator, I. H. Miller 363,162
Steam and heating rooms, apparatus for generating, O. A. Stempel 363,305
Steam boiler, H. Stanton 363,017
Steam engine, Ross & Henrikson 363,300
Steam trap, J. Kane 363,245
Stone laying jack, J. H. Libbe 362,982
Stove, E. Bussey 363,261
Stovepipe fastening, F. R. Dimick 363,122
Stoves, toaster or broiler for gasoline, A. G. Conway 362,939
Straw stacker, M. Heinecke 363,234
Superheater and hydrocarbon burner, combined, C. T. Schoen 363,086
Swinging gate, W. A. Smith 363,180
Switch. See Automatic switch. Electric switch. Electrical switch. Railway switch.
Switch stand attachment, J. Roberts 363,001
Table. See Drawing table. Transfer table.
Table slide, L. S. Edleblute 363,219
Tank. See Flushing tank.
Telegraphy, F. Van Rysselberghe 363,188
Telephone, mechanical, J. Lauhoff 363,249
Temperature regulator for carburetors, E. J. Frost 363,324
Thermoscope, electro-magnetic, H. J. Haight 362,957
Thill coupling, D. J. Owen 363,254
Tie. See Railway tie.
Tin from scraps of tinned plate, recovery of, W. Hasenbach 363,136
Tires, apparatus for setting, P. G. Austin 363,272
Tobacco dressing machine, I. T. Hardy 363,229
Tobacco plug extractor, F. E. Leslie 362,981
Toboggan, J. R. McLaren, Jr 363,157
Toll gate, C. W. Green 362,954, 362,955
Tool, combination, W. J. Hammer 363,331
Trace bearer point, E. Armstrong 363,192
Traction engines, device for guiding, G. A. & J. E. Klotz 363,246
Traction wheel, C. E. Warner 363,027
Transfer table and dock, C. C. Burton 363,114
Trap. See Animal trap. Fish trap. Steam trap.
Traveling bag, T. R. Weidemann 363,029
Treadle movement, A. M. Fenner 363,289
Tub. See Bath tub.
Tube. See Bobbin or cop tube. Grain drill tube. Pasteboard mailing tube.
Tug attachment, hame, W. S. Sherman 363,009
Type writers, transmitter for electrical, J. F. McLaughlin 363,158
Type writing machine, G. L. Waitt 363,100
Valve for steam engines, reversing, P. M. Cross 363,318
Valve, steam engine, P. M. Cross 363,317
Valve, water tank, H. S. Hopper 362,963
Vapor burner, W. P. Butler 362,929
Vehicle bodies, corner plate for, E. S. Mead 362,985
Vehicle heater and lamp, T. A. Long 363,149
Vehicle running gear, G. Girardey 363,325
Velocipede, R. Watson 363,189
Vise, pipe, Baker & Shevlin 363,041
Wagon jack, J. M. Young 363,038
Wash bench, M. & B. Wilcox 363,104
Washing machine, T. J. Christy 363,046
Water gauge, safety, J. B. Little 363,071
Weather strip, Hull & Kirk 362,964
Wedge for tool handles, G. P. Morrill 362,989
Welding furnace for heating blanks, J. C. Richardson 363,171
Well digging apparatus, W. Lowman 363,151
Wells, packer for oil and gas, J. D. Brooder 363,111
Wheel. See Fifth wheel. Traction wheel.
Wheel rake, W. H. Wild 363,034
Wheelbarrow, J. Peterson 363,168
Whistles, electrical device for operating steam, W. M. Pease 363,079
Winding paper and other fabrics, machine for, J. Waldron 363,024
Wire stretcher, J. Shipley 363,176
Wire stretcher, J. T. Alexander 363,191
Woodworking machine, D. Picard 362,993
Woodworking machine gauge, N. Stalter 363,016

DESIGNS.

Box, C. W. Schumann 17,351
Desk furniture, H. G. Smith 17,252
Hardware, ornamentation of builders', R. W. E. Christesen 17,344
Suspender strap, W. F. Osborne 17,347
Toothpick holder, etc., H. Franz 17,345
Type, font of printing, H. Ihlenburg 17,346
Type, font of printing, C. Schraubstadter, Jr 17,350
Type, font of printing, J. West 17,353
Watch case, F. Rapp 17,348, 17,349

TRADE MARKS.

Bells for churches, engine houses, or other fire alarms, schools, or other places or purposes, J. B. Dodds 14,380
Bleaching powder, chloride of lime, sulphate of soda, caustic soda, and potash, W. Pilkington & Son 14,413
Cane and sorgo mills, L. M. Rumsey Manufacturing Company 14,417
Collars, cuffs, and shirts, W. G. Jughardt 14,406
Cutlery, edge tools generally, and saws and files, W. T. Stainiforth 14,419
Duck, Schlaepfer, Ferber & Co 14,418
Earthenware and china, Doulton & Co 14,381
Flour, A. Kufeke ..... 14,387 to 14,399, 14,407 to 14,411
Garments, men's, boys', youths', and children's outside, H. Bach 14,379
Knitting cotton, Riddle Manufacturing Co 14,416
Liniment, B. F. Jones 14,405
Liniment, Arabian Spavin Cure Co 14,378
Liniment, oil, A. Loomis 14,412
Medicinal purposes, waters for, Natural Mineral Water Company 14,400
Medicine for horses and cattle, Somerville Medicine Co 14,401
Oat groats, Douglas & Stuart 14,404
Pomade, H. Cohen 14,402
Rubber belting, Revere Rubber Company 14,415
Salve, J. F. Corry 14,403
Ship logs, T. Walker & Son 14,422
Ship logs and sounding machines, T. Walker & Son 14,420, 14,421
Shoes, A. M. Herrod & Co 14,384
Soaps and perfumes, toilet, W. Hill 14,385
Underwear, all kinds of, J. Holroyd 14,386
Wall finish, Harrison Bros. & Co 14,383
Wall paper, C. H. Provost 14,414
Yarns, threads, braids, and silk or linen webbing, H. E. Frankenberg 14,382

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