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Special facilities for manufacturing light machinery, hardware, and novelties. Stamping, presswork, punches, dies, and special tools. Correspondence invited. Rockaway Manuf. Co., 3 E. 14th St., New York.

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Rotary veneer basket and fruit package machinery. L. E. Merritt Co., Lockport, N. Y.

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 This is for our information, and not for publication.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

(858) S. G.—1892 and 1896 will be leap years; 1900 will not be a leap year. After that the succession will be regular for many years.

(859) G. A. C. asks (1) for a good receipt for a blacking for ladies' shoes. A. Mix a filtered solution of 80 parts shellac, in sufficient alcohol, with 3 of wax, 2 of castor oil, and a sufficient quantity of pigment, such as best lamp black or drop black. It must be kept corked. 2. A practical receipt for making cake stove polish. A. Compress the best graphite or plumbago into cakes by hydraulic pressure. 3. A first class receipt for a polish for furniture, pianos, etc.? A. Melt two or three cubic inches of gum sandarac, add 1 pint of boiled oil, and boil together for 1 hour; while cooling add 1 drachm Venice turpentine and dilute according to judgment with oil of turpentine. 4. A good receipt for liquid glue, that will mend china, wood, metal, etc. A. Dissolve best glue in hot acetic acid, or having dissolved it in water add nitric acid; for the last use 1 quart of water, 2 pounds glue, and 7 ounces acid, adding the latter slowly. 5. A first class washing powder that will foam and form suds when put into water. A. Dry soap, and pulverize it. 6. A good receipt for making a shaving soap that will give a good lather. A. Consult our SUPPLEMENT, Nos. 258, 308, 328, 330, and 360 for articles on soap. 7. A receipt for a good, durable black writing ink and a black indelible ink for marking linen, etc. A. For inks of all kinds we refer you to our SUPPLEMENT, No. 157. 8. Also a receipt for a very dark bluing water for washing clothes. A. Dissolve Prussian blue in water containing ferrocyanide of potassium in solution.

(860) J. B. W. asks for a receipt for making a black paint or enamel that will stand heat, for enameling a small engine boiler and fire box. A. Use shellac and alcohol mixed with best black. This will stand a considerable degree of heat without being destroyed, and after it has lost its good appearance it is easily renewed. Or you could apply a black oil japan ground, such as the following: Asphaltum 3 parts, boiled oil 128 parts, burnt umber 8 ounces. This will require heat from 250° to 300° to make it dry. It may be heated in an ordinary oven.

(861) F. P. A. asks (1) which are the best batteries to use, and how many do I need for a 3 candle power incandescent lamp (Edison)? A. Six bichromate cells will operate your lamp very well for temporary use. 2. I have an electric door bell; had it with one Novelty Disque battery; but thinking it a little weak, I connected it with another of the same kind, and soon after the jar cracked, and rendered it useless. Can you explain why it cracked? A. The cracking of the jar is only a coincidence. The jar may have cracked from one of a dozen reasons.

(862) F. C. H. writes: 1. Suppose a house in Newton Center and a house in Newton Corner were supplied with gas and water, could the water pipe be used as one telephone line and the gas pipe the other, or would they be short-circuited in the earth? A. As both of the pipes are thoroughly grounded, we think it would be impossible to secure a telephonic circuit by the means suggested. 2. Can a magneto be made to ring a common electric bell? A. An electric bell of high resistance may be operated fairly well by means of a magneto.

(863) F. M. asks what kind of a mixture he can use to coat card or tar board with so that he can write on it with a slate pencil and rub it out same as on the silicate slates. A. Mix 1 gallon 95 per cent alcohol with 1 pound shellac, 8 ounces best ivory black, 5 ounces finest flour emery, and 4 ounces ultramarine blue. Dissolve the shellac first, then add the other constituents. This is a typical formula, and may be varied considerably. The general idea is to use emery or ground pumice stone as the abrading or roughening material, with black coloring matter and alcoholic varnish.

(864) O. K. asks how he can preserve gunpowder in shells from melting into fluid in South America, say in Ecuador during the rainy season. A. As the melting alluded to is due to moisture, your best plan is to use the best quality of powder and coat the shells thickly with melted paraffine. Possibly some of the wood or brown powders would be guaranteed not to melt or deliquesce.

(865) H. J. writes for a receipt for making a good soap, as simple as possible, one that does not injure the skin. I have always plenty of good grease at command, and in hot weather it is offensive if kept too long, and difficult to get rid of. A. Melt down the grease and skim it free from refuse, scrap, etc. Dissolve 1 pound caustic soda in water for every 6 pounds of grease. When the soda solution has cooled add it to the grease, stir thoroughly, and pour into a pan. This soap is a little too alkaline for toilet purposes. After it has stood for a few days shave or cut it up and place in a dish with about 1/4 to 1/2 its volume of water and heat to boiling. The soap will separate in clots. If it does not, add salt until a good separation takes place. Chill it by pouring on a little cold water, pour off the water, and remove the soap. Remelt with a little clear water and cast in moulds, such as tea cups or patty pans. Perfume if desirable, though it is better without.

(866) E. B. S. writes: 1. Can you inform me whether there is such a thing manufactured as shot in small sizes, such as bird shot, in iron or steel, instead of lead? A. Such material is made for and is used by the granite polishers. Any of such could give you further information. 2. Could they be made by the dropping process, the sameas shot made from lead? A. It can be so made, but of course would tend to destroy the apparatus used. It is probably best made by a strong air or steam blast which is directed against a stream of molten iron so as to drive it into spray.

(867) W. H. H. asks for a recipe for bleaching ivory. I have a sunshade whose handle has turned yellow, and would like to know how I can whiten it. A. Clean it by rubbing with finely ground pumice stone and water, and wash, and while still moist expose to the sun in a glass vessel. Use a clean pickle or preserve jar. Do not expose directly to the sun, or it will crack.

(868) A. G. asks whether aluminum can be soldered. If so, how to do it? A. The following alloys are given:

a.	Aluminum	8 parts.	Zinc	92	parts.
b.	"	12 "	"	88	"
c.	"	15 "	"	85	"
d.	"	20 "	"	80	"

The aluminum is first melted, the zinc added gradually, finally some fat is added, and the whole is stirred with an iron rod and poured into moulds. For flux use copaiba balsam 3 parts, Venice turpentine 1 part and a few drops of lemon juice. Dip the soldering iron into the same flux.

(869) C. I. F. asks: Would the motor illustrated in SCIENTIFIC AMERICAN of March 17, 1888, be strong enough to run an ordinary size skiff, say 12 feet long, screw propeller, in a stream with very little or no current? A. The motor will run such a boat as you describe.

(870) P. J. W. asks whether or not the banana grows upon a tree. A. The banana plant is fairly denominated a tree, as it exceeds the limit of height generally used to determine shrubs.

(871) J. H. S. writes: 1. What is the process for liming eggs, and how long will they keep in an ordinary, cool cellar? A. To each pail of water add 2 pints freshly slaked lime and 1 pint of salt and mix well. Half fill a barrel with it and place the eggs therein. They will keep, it is said, for two years. For preservation of eggs see our SUPPLEMENT, Nos. 95, 101, 217, and 463.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

May 14, 1889,

AND EACH BEARING THAT DATE.

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

Aerated water, apparatus for manufacturing, J. T. Leighton ... 403,117
Air and gas engine, Schmid & Beckfeld ... 403,294
Animals, device for administering medicine to, P. Quitman ... 403,213
Attrition mill, G. & A. Raymond ... 403,215
Auger heads, die for forming, H. L. Shaler ... 403,296
Axle boxes for railway carriages, manufacturing, J. Donnelly *et al* ... 403,422
Axle boxes, metal packing for car, H. Rogers ... 403,141
Axle lubricator, car, T. Saunders ... 403,448
Baling press, V. L. Williams ... 403,498
Bar. See Boring bar. Draw bar. Grate bar. Pinch bar. Railway splice bar.
Basket cover, fruit, F. A. Thomas ... 403,156
Batteries, time switch for secondary, C. E. Buell ... 403,177
Battery. See Electric battery. Galvanic battery.
Bed bottom, woven wire, J. B. Ryan ... 403,143
Bed drier and warmer, J. Fossati ... 403,389
Bed lounge, C. Newhouse ... 403,284
Beer chest or refrigerator, O. Neuman ... 402,190
Bell, call, E. H. Peck ... 403,286
Bellows fold coupling, H. H. Sessions ... 403,224
Belt hole cover, W. E. Sharples ... 403,390
Belt supporter, L. Sanders ... 403,220
Belt tightener, E. Benjamin ... 403,454
Bicycle, W. E. Smith ... 403,153
Block. See Pillow block.
Board. See Clip board. Key board.
Boat. See Collapsible boat. Folding boat.
Boats, means for the electrical propulsion of, R. M. Hunter ... 403,193
Boiler. See Egg boiler.
Boiler, Gamper & Farkacz ... 403,343
Bolt locking device, C. I. Penrose ... 403,131, 403,132
Bolting cloth cleaner, G. S. Burnap ... 403,088
Book case, revolving, C. Goddard ... 403,099
Boring and drilling machine, B. B. Barnett ... 403,240
Boring bar, adjustable multiple cutter, J. Stone ... 403,154
Bottle stopper, S. Glover ... 403,466
Box. See Collapsible box.
Box end, J. F. Simpson ... 403,226
Box fastener, J. A. Strong ... 403,398
Box strap, S. C. Cary ... 403,178, 403,246, 403,247
Box strap, metal, S. C. Cary ... 403,245
Boxes, manufacture of wooden, E. Densmore ... 403,333
Brake. See Car brake. Elevator safety brake. Locomotive brake. Railway train brake. Truck brake.
Brewing, apparatus for, C. Clinch ... 403,252
Brick machine, W. Weeber ... 403,235
Bridge, suspension, H. M. Kosler ... 403,433
Broiler, M. C. Armour ... 403,407
Brush, rotary, T. E. Clark ... 403,328
Buckle, L. M. Doddridge ... 403,254
Buckle, J. H. Harrell ... 403,469
Buckle, belt, A. Goertz ... 403,263
Burner. See Hydrocarbon burner. Oil and gas burner.
Button, R. H. Lewis ... 403,477
Cable grip carrier, J. Stephenson ... 403,503
Cable, wire, Batchelor & Latch ... 403,319
Cam, adjustable, A. D. Woodmansee ... 403,169
Can. See Milk can.
Car brake, G. Collins ... 403,090
Car brake, F. D. Paradise ... 403,285
Car brakes, registering gauge for railway, R. Potts ... 403,210
Car, cable grip, J. Stephenson ... 403,395
Car coupler, mining, W. Walter ... 403,159
Car coupling, M. D. Cox ... 403,461
Car coupling, A. J. McGehee ... 403,282
Car coupling, P. E. Muller ... 403,205
Car coupling apparatus, D. H. Freeman ... 403,341
Car coupling link, Schinnellер & Jones ... 403,147
Car door, grain, G. W. Oborn ... 403,366
Car, railway, L. J. Harris ... 403,265
Car, railway, J. J. Treanor ... 403,309
Car starter, Wistar & Pettet ... 403,167
Car step, extensible, J. F. & J. F. Wood ... 403,237
Car, street, A. Rapp ... 403,214
Car track brake housing, J. Stephenson ... 403,300
Car track guard, J. Stephenson ... 403,302
Car tracks, brake shoe for, J. Stephenson ... 403,229
Cars, apparatus for operating safety gates of railway, W. M. Brown, Jr. ... 403,176
Cars, draw gear for cable, J. Stephenson ... 403,301
Cars, grain door for freight, Patterson & Lawrence ... 403,208
Cars, track brake for, J. Stephenson ... 403,299
Cars, vestibule connection for railway, G. M. Pullman ... 403,137
Carding machines, sliver coiling can for, E. & G. E. Sutcliffe ... 403,304
Carpet cleaner, W. P. White ... 403,313
Carpet stretcher, A. W. Muhlhauser ... 403,126
Carriage, baby, F. J. D. Chappell ... 403,417
Carriage bow, J. C. Coss ... 403,091
Carriage curtain fastener, S. T. Scott ... 405,388
Carrier. See Cable grip carrier. Life-line carrier.
Cart, road, R. D. Scott ... 403,148
Case. See Book case. File case.
Cask, collapsible shipping, J. H. Mitchell ... 403,501
Casks, air ejector for, J. W. Funck ... 403,261
Casting sash weights, chill core for, Humphrey & Good ... 403,191
Chain, drive, T. H. McCray ... 403,127, 403,128
Chair. See Reclining chair.
Chair attachment, rocking, W. L. Bunker ... 403,325
Check hook, harness, M. Ingersoll ... 403,351
Chest. See Beer chest.
Chlorine, apparatus for making, R. Pechiney ... 403,445
Chopper. See Cotton chopper.
Chuck, drill, M. L. Andrew ... 403,083
Churn, J. W. Ferrenburg ... 403,337
Churn, Robertson & Gammon ... 403,140
Cigar bunching machine, Borgfeldt & Lewyn ... 403,410
Cigarette mouthpieces, machine for making, S. Brown ... 403,324
Cleaner. See Bolting cloth cleaner. Carpet cleaner. Window cleaner.
Clip board, folding, W. G. Weagly ... 403,233
Clock, electric alarm, T. H. Grady ... 403,100
Clock striking mechanism, A. M. Lane ... 403,275
Clocks, setting mechanism for alarm, A. M. Lane ... 403,274
Closet. See Water closet.
Clothes line attachment, M. Denise ... 403,332
Clutch, friction, G. L. Gerhard ... 403,098
Coal and wood cabinet, H. Brandt ... 403,456
Coffee roaster, J. T. Couse ... 403,419
Coin operated lock, F. M. Leavitt ... 403,200
Collapsible boat, C. Henderson ... 403,470
Collapsible box, L. Casper ... 403,089
Colter band, A. J. Tatum ... 403,399
Conduits, coupling for underground, W. Lake ... 403,352
Conveyer, R. E. Hurley ... 403,269
Cooking vessel, Dawes & Myler ... 403,093
Cooking vessel, H. A. Manning ... 403,279
Corset fastening, N. B. Williams ... 403,166
Corset stiffener, I. D. Warner ... 403,161
Cotton chopper, A. O. Woodbury ... 403,403
Cotton sprinkler, W. Kister ... 403,475
Coupling. See Bellows fold coupling. Car coupling. Vehicle coupling.
Cuff retainer, J. M. March ... 403,280
Cultivator, corn, W. J. Gohn ... 403,426
Cultivator, hand garden, J. W. Bowman ... 403,413
Cultivator, wheel, R. C. Buckley ... 403,414
Cup. See Grease cup.
Currency package, E. E. Barreiras ... 403,085
Current wheel, J. Straszer ... 403,493
Curtain fixture, A. W. Gayhart ... 403,344
Cutter. See Veterinary incisor cutter.
Damper, W. A. Hance ... 403,467
Damper, C. F. Lange ... 403,353
Damper, stovepipe, W. A. Hance ... 403,468
Damper, stovepipe, S. C. Schofield ... 403,489
Dial, timepiece, A. Fischer ... 403,338
Digger. See Potato digger.
Direct acting engine, double-cylinder, W. D. Hooker ... 403,108
Dish, wooden, W. D. Johnson ... 403,111
Door check, H. Stanynought ... 403,393
Door closer, thermostatic, W. R. Patterson ... 403,484
Door hanger, W. W. Smith ... 403,228
Draught equalizer, W. E. Plumer ... 403,135
Draw bar and hook, B. N. Phelps ... 403,133
Dress stiffeners, manufacture of, I. D. Warner ... 403,160
Drier. See Bed drier. Grain drier.
Drill. See Rock drill.
Drum, heating, J. Hodgkinson ... 403,349
Dust collector, O. M. Morse ... 403,362, 403,363
Egg boiler, R. Rethoffer ... 403,446
Electric battery, J. A. Barrett ... 403,451
Electric cables, covering for, E. F. Garland ... 403,262
Electric energy, apparatus for registering the consumption of, L. Brillie ... 403,244
Electric machine, dynamo, F. A. Perret ... 403,487
Electric machine, dynamo, H. E. Walter ... 403,158
Electrical distribution, system of, E. P. Thompson ... 403,308
Electroplating lead pipes, L. D. Hosford ... 403,429
Electrotype moulds, apparatus for metallizing, S. P. Knight ... 403,197
Elevator. See Hay elevator.
Elevator carriages, electric controlling device for, W. E. Nickerson ... 403,439
Elevator, electrically controlled, W. E. Nickerson ... 403,441
Elevator, safety brake, W. E. Nickerson ... 403,438
Elevators, electric controlling device for, W. E. Nickerson ... 403,440
Elevators, electric controlling mechanism for, W. E. Nickerson ... 403,442
Elevators, fluid speed elevator for, W. E. Nickerson ... 403,436
Elevators, fluid speed regulator for, W. E. Nickerson ... 403,437
Embroidering machine, Saurer & Leuthold ... 403,221
End gate, wagon, A. E. Beason ... 403,241
End gate, wagon, J. A. McClellan ... 403,480
Engine. See Air and gas engine. Direct-acting engine. Expansion engine. Gas engine. Gas or gasoline engine. Rotary steam engine.
Engine, J. F. Shawhan ... 403,150
Expansion engine, quadruple, J. Haug ... 403,266
Fence gate, barbed wire, T. M. Sampson ... 403,219
File case or cabinet, W. T. Wood ... 403,168
Firearm sight, J. S. Blankman ... 403,242
Folding boat, Allen & Gamble ... 403,171
Frame. See Harvester elevator frame.
Fruit gatherer, W. J. Wingenroth ... 403,500
Fruit picker, W. P. Craig ... 403,331
Furnace. See Hot air furnace.
Furnace cover, W. Sleicher, Jr. ... 403,152
Gaff topsail for vessels, L. W. Falck ... 403,267
Galvanic battery, C. Colle ... 403,253
Galvanometer, portable tangent, E. Weston ... 403,312
Gas, apparatus for the manufacture of, J. M. Rose ... 403,384
Gas, apparatus for the production of, R. Naysmith ... 403,283
Gas engine, Rogers & Wharry ... 403,379
Gas engine governor, Rogers & Wharry ... 403,378
Gas engines, carburetor, Rogers & Wharry ... 403,377
Gas engines, dynamo speeder for, Rogers & Wharry ... 403,376
Gas engines, igniter for, Rogers & Wharry ... 403,380
Gas, manufacturing, J. M. Rose ... 403,381 to 403,383
Gas meter, W. Y. Stansbrough ... 403,297
Gas or gasoline engine, L. C. & B. Parker ... 403,367
Gaseous fuel, apparatus for making and burning, Locke & Richardson, Jr. ... 403,434
Gate. See End gate. Fence gate.
Gate, C. Tibbs ... 403,401
Gear wheel, M. T. Graf ... 403,101
Gold and silver from ores, obtaining, J. S. MacArthur *et al* ... 403,202
Grain binder, C. H. Salzman ... 403,385
Grain drier, L. Borland ... 403,411, 403,412
Grain meter, A. Stewart ... 403,396
Grain scourer, H. Seck ... 403,389
Grate bar, rocking or shaking, C. J. Dorrance ... 403,255
Grate, inclined, H. H. Campbell ... 403,416
Grease cup, J. Massett ... 403,358
Grinding mill, E. Derbec ... 403,421
Grinding twist or flat drills, gauge for, A. F. Brewer ... 403,175
Guard. See Car track guard.
Gun, spring, J. D. Egler ... 403,096
Gun, spring, E. Y. Knapp ... 403,432
Hammer, power, R. A. Belden ... 403,458
Hammock, A. Beals ... 403,320
Hammock, H. M. York ... 403,315
Handcuffs and nippers, combined, W. A. Hicks ... 403,268
Hanger. See Door hanger.