

(22) L. P. B. writes: I wish to know what gives the kind of ink used with the hectograph the peculiar bronze luster? A. The ink consists of a strong solution of aniline violet, which crystallizes on the paper in drying.

(23) W. C. B. asks what will remove iodine from marble. A. Try strong aqua ammonia.

(24) A. B.—Laboulbène recommends for the preservation of insects in a fresh state plunging them in a preservative fluid consisting of alcohol with an excess of arsenious acid in fragments; 1/4 pint alcohol will take about 14 troy grains of arsenic. The living insect, put into this preparation, absorbs about 3-1000 of its own weight. When soaked in this liquor and dried, it will be safe from the ravages of moths, Anthrenus or Dermestes. This liquid will not change the colors of blue, green or red beetles if dried after soaking from twelve to twenty-four hours. Hemiptera and Orthoptera can be treated in the same way. The nests, cocoons, and chrysalids of insects may be preserved from injury from other insects by being soaked in the arseniated alcohol, or dipped into benzine or a solution of carbolic acid or creosote.

(25) W. H. M. asks (1) whether methyl chloride is an article of commerce and whether it is expensive. A. No; it is a colorless gas at ordinary temperatures and pressure; it is condensable to a liquid at minus 23° C. To keep it in the liquid form it must be stored in very strong and hermetically sealed vessels. 2. Would it be necessary to produce pressure with the article, before evaporating, to produce a low temperature? If so, how much; if not, how low might the temperature be reduced by the use of an air pump to produce a vacuum and beginning at normal temperature and pressure? A. Exposed to the air it (the liquid) evaporates with great rapidity, its temperature falling below 0° F.; in vacuo this evaporation of course proceeds more rapidly than in air, and hence the reduction of temperature is greater. The greater the amount of liquid evaporated in a given time the lower the temperature attainable. 3. How large a quantity of methyl chloride should be used to produce appreciable results? A. Six ounces.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

C. W.—The substances you send for examination are as follows: 1. Red sandstone. 2. Calcite. 3. Hedenbergite. 4. Artificial. 5. Red granite. 6. Graphite in calcite. 7. Epidote. 8. Satin spar in dolomite. 9. Coccolite. 10. Dolomite. 11. Quartzite. 12. Hornblende. 13. Clinoclone. 14. Chlorite. 15. Natrolite. 16. Spodumene. 17. Calcite. 18. Iceland spar. 19. Limonite. 20. Decomposing feldspar.—O. E. C.—The sample is an impure Berlin blue containing alumina (from the alum used in its manufacture).—N. C.—The rock consists of serpentine, hornblende and quartz with copper and iron sulphurets (chalcopyrite and pyrite).—E. E.—The rock is a talcose slate. Some of it would doubtless answer very well for furnace linings if it can be worked economically.—H. S.—Amygdaloid trap, semi-decomposed—it contains opal quartz.—R. G. V.—No. 1 is rutile—titanic acid—oxygen 39, titanium 61—100. No. 2. Titaniferous sand, menconite. No. 3. Ferruginous quartz containing crystals of rutile and iron pyrites, also probably gold.—W. K.—The quartz contains nothing of value.—G. W. K.—It is clear quartz rock. Useful for glass making.—O. B.—The iron ore is hematite of excellent quality.—J. C. M.—No. 1. Gypsum, lime sulphate. No. 2. Calcite, lime carbonate. No. 3. Malachite and azurite, carries traces of silver. No. 4. Contains clay, sand, and lime phosphate.—J. M. F.—It is the mutilla occidentalis, quite common in the Southern States.

COMMUNICATIONS RECEIVED.

- On Ice Yachts. By J. E. K.
On Improvements in Telephones. By T. L. W.
On Measuring the Uneclipsed Portion of the Sun's Diameter. By L. L.
On a Curious Bone Formation. By E. L. W.
On the Great Wheat Belt of the United States. By J. W. B.
On Patent Temperance Reform. By L. J. F.
On New Motive Power. By W. M. M.
A Theory of the Tides. By W. B., Jr.
On Sailing Ice Boats. By H. R. B.
On Paraffine in Oil Wells. By D. F.
On the Velocity of Ice Boats. By P. F. S.
On Small Steamers. By J. A. W.
The Law of Dust Explosions. By A. D.
On the Speed of Ice Boats. By T. S. S.
On Making Copying Ink. By C. F. L.
On Explosion of Dynamite. By N. R.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

November 4, 1879,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

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Acid, making tartaric, H. Goldenberg. 221,297
Aging and purifying liquors, apparatus for, Jacob & Lochner. 221,316
Air compressor, W. Johnston. 221,318
Animal trap, J. M. Hawkins. 221,304
Animal trap, J. M. Keep. 221,320
Animal trap, G. W. Lewthwaite. 221,329
Anvil, horseshoe calk welding, E. J. Parker. 221,183

- Automatic gate, S. Small. 221,368
Axle box, car, T. A. Bissell. 221,278
Axle box, car, I. P. Wendell. 221,259
Axles, die for making flap, C. H. Babcock. 221,208
Bag and sack fastener, C. R. Elliott. 221,292
Bag holder, M. Pomroy. 221,251
Ball trap, W. C. Hinman. 221,306
Basket coverfastening, W. I. Winne. 221,203
Bed attachment, invalid, R. O'Donnell. 221,346
Bed bottom, spring, S. H. Reeves. 221,190
Bed or bed bottom, spring, E. A. Jeffery. 221,317
Bedstead, wardrobe, F. R. Wolfinger. 221,262
Beer cooler, J. S. Flaunt. 221,166
Belt fastener, T. O. Potter. 221,353
Billiard cue chalk block, C. A. Fautz. 221,164
Blacking box holder, H. Weston. 221,260
Boot and shoe buffing machine, J. L. Copp. 221,268
Boot and shoe lasting machine, C. H. Trask (r). 8,954
Boring machine, log, Bartlett & Evans. 221,209
Boring machine, rock, W. W. Graham. 221,298
Bottle stopper, L. Kutscher. 221,324
Brick moulding die, D. O. Loy. 221,243
Bridge, R. Long (r). 8,959
Bridle, M. R. Thurber. 221,197
Brush cleaner, A. Hopfen. 221,309
Buildings, construction of, F. Kaltwasser. 221,319
Button and stud, E. A. Robinson. 221,363
Button card, C. A. Righter. 221,358
Button, separable, C. F. Quinley. 221,189
Cabinet, toilet, F. C. Zanetti. 221,383
Calculator, mechanical, S. Petty. 221,186
Can, T. W. McNally. 221,245
Can for hermetically sealed goods, C. C. Lane. 221,336
Car brake, G. Smith. 221,195
Car brake automatic, O'Donnell & Dever. 221,345
Car coupling, C. B. Santee. 221,192
Car door, grain, M. F. Bagley. 221,270
Car, freight, T. R. Hutton. 221,315
Car propeller, N. A. Gaston. 221,227
Car roof, railway, H. Aldridge. 221,142
Cars, pipe coupling for railway, J. E. Chapin. 221,154
Carriage brake, child's, A. McDonald. 221,336
Cash register and indicator, J. & J. Ritty. 221,320
Chain, ornamental, A. Horst. 221,233
Cigar box lock, L. F. Mergott. 221,177
Clock escapement, C. E. Lord. 221,331
Clock movement, A. E. Hotchkiss. 221,310
Clock pendulum, H. Camp. 221,213
Clock, striking, D. W. Bradley. 221,210
Clothes pounder, C. W. Robinson. 221,362
Clothes wringer, S. A. Bailey. 221,271
Cock, J. Dewrance. 221,288
Coffee and tea, apparatus for preparing, J. M. Webb. 221,376
Creaming can, J. S. Farley. 221,293
Cultivator, J. Dierdorff. 221,289
Demijohns and bottles, lock stopper for, H. R. Gillingham. 221,228
Dental drill, A. Hartman (r). 8,958
Deodorizing and disinfecting, process and apparatus for, J. M. Hirsch. 221,232
Draught equalizer, L. O. Brekke. 221,280
Drawer support, J. C. Hirsch. 221,307
Dust pan, G. H. Howe. 221,312
Dyestuffs, preparation of, M. Wise. 221,381
Earring, W. A. L. Miller. 221,178
Electric machine, dynamo, G. Lecocq. 221,327
Electro-magnetic machine, L. Drescher. 221,321
Elevator bucket, W. G. Avery. 221,207
Envelopes, cutting instrument for, I. W. England. 221,163
Equalizer, threehorse, R. Scott. 221,367
Fence, barbed, E. M. Cranial. 221,158
Fence wire, barbed, S. H. Gregg. 221,300
Fibers, machine for cleaning and extracting, P. Sanchez. 221,365
File and holder, paper, J. C. Moore. 221,339
Filter, water, T. Tripp. 221,198
Firearm lock, A. E. Barthel. 221,145
Firearm, magazine, J. Lee. 221,328
Firearm, revolving, A. E. Barthel. 221,146
Firearm, revolving, A. Hyde. 221,171
Fire escape, F. P. Mankin. 221,332
Furnaces, the gases from coking coal, process and apparatus for utilizing in, L. Stevens. 221,257
Gleaner and binder, E. W. Jenkins. 221,235
Gold, etc., apparatus for concentrating and amalgamating, J. Patterson. 221,350
Governor, steam engine, F. Posolek. 221,296
Grinding mill, J. Stevens. 221,371
Hair spring stud, Monday & Doherty. 221,180
Hame, sheet metal, J. S. Brown. 221,211
Harness, C. H. Cooley. 221,156
Harnessmakers' use, machine for, J. B. Underwood. 221,373
Hat and cap, E. P. Hoyt. 221,313
Hay carrier, L. Y. Myers. 221,342
Hay loader, W. & B. F. Bader. 221,269
Hay rack, J. Boyd. 221,279
Heating and cooking furnace, gas, H. Q. Hawley. 221,169
Hides, machinery for stocking, unhairing, and softening, R. Middleton. 221,246
Hinge, gate, J. A. Grove. 221,301
Hinge, spring, W. Gillfillan. 221,168
Hinge, step, J. M. Dodge. 221,330
Hoe, T. B. Lockwood. 221,242
Honey box for beehives, C. H. Connolly. 221,284
Hoop machine, R. H. Nogar. 221,344
Horse power jack, A. Wissler. 221,204
Horses' hoofs, moisture and pressure pad for, D. C. Baker. 221,272
Horseshoe, J. K. Onell. 221,347
Hose nozzle, adjustable, G. C. Palmer. 221,349
Howeling, crozing, and chamfering machine, H. W. King. 221,172
Hub sand band, W. H. Stevens. 221,256
Incubator, J. L. Campbell. 221,214
Indicator, W. L. Brownell. 221,212
Kettle, G. W. Fisher. 221,294
King bolt, clip, L. Pentz. 221,184
Kneader, dough, J. W. & A. Ruger. 221,364
Knit mittens, manufacturing, E. H. Pearson. 221,351
Lamp, Aikman & Osborn. 221,263
Latch, A. Wimmer. 221,261
Lathe, turning, J. H. Howell. 221,311
Leather, removing extractive matter from tanned, Plumer & Kerans. 221,187
Letterpackage clasp, J. W. Ripley. 221,359
Level, penulum, I. S. Winter. 221,380
Lid or cover for vessels, J. C. Boyle. 221,150
Lifting jack for vehicles, L. Haverstick. 221,230
Loom, J. W. Drummond (r). 8,953
Loom, circular, J. J. Greenough (r). 8,952
Loom drop shuttle boxes, mechanism for operating, L. J. Knowles. 221,237, 221,238, 221,239, 221,240
Loom harness motion, O. W. Kenison. 221,321
Loom shuttle spindle, O. P. Richardson. 221,191
Loom temple, W. H. Burns (r). 8,950, 8,957
Lubricator, J. G. Barrington. 221,274
Measuring liquids, automatic apparatus for, H. E. Marchand. 221,333
Meat mincing machine, G. S. Oberdorff. 221,250
Meats, curing, J. M. Reid. 221,357
Metal, galvanizing, Wahl & Eltonhead. 221,200

- Metallic plates, manufacturing ornamented, W. M. Hedges. 221,231
Mining drill, C. F. Wilkinson et al. 221,378
Motor, F. M. Morgan. 221,340
Musical instrument, mechanical, E. P. Needham. 221,343
Neck band shaper, F. L. Volk. 221,374
Nut lock, W. Gray. 221,299
Optometer, Klein & Giering. 221,323
Oven, J. Graik. 221,157
Oyster feeder, J. Langrall. 221,326
Packing for pistons, plungers, etc., J. G. Willard. 221,202
Padlock, permutation, W. Walker. 221,258
Paper bag, D. Appel. 221,144
Paper bag, D. J. Perry. 221,165
Paper box, A. Matchett. 221,244
Paper caps, etc., machine for making plaited, W. F. Hunt. 221,314
Paper cutting machine, G. R. Clarke et al. 221,216
Paper dishes, making, C. Ingersoll. 221,234
Paper pulp, renewing worn screen plates for, M. S. Drake. 221,221
Pipe and hose coupling, J. E. Chapin. 221,153
Plaiting machine, J. H. Allison. 221,264
Planter and fertilizer distributor, combined seed, N. Birdsell. 221,276
Planter, corn, M. P. Brown. 221,282
Planter, corn and cotton seed, Z. T. Lee. 221,241
Pocketbook lock, F. F. Weiss. 221,377
Pocket, safety, J. Colton. 221,283
Portable engine, J. Allonas. 221,265, 221,266
Printing, chromatic, J. Carson. 221,215
Projectile for small arms, H. J. Nowlan. 221,249
Pulp screen, revolving, W. L. Longley. 221,330
Pump, W. Garvens. 221,167
Pump, M. W. McCortney. 221,335
Pump for compressing air and gas, S. L. Wiegand. 221,301
Pump handle attachment, A. A. Lamb. 221,174
Pumps, cylinder lining for, H. Epping. 221,223
Railway signal, F. B. Aspinwall. 221,267
Railway switch, H. D. Sprague. 221,196
Razors, manufacture of, C. F. Pluemacher. 221,352
Refrigerating apparatus, T. Elkins. 221,222
Refrigerating apparatus, J. A. Whitney (r). 8,955
Refrigerator, H. M. Diggins. 221,218
Rope clamping hook, J. Robertson. 221,361
Sash balance, W. Milner. 221,247
Sash, window, G. H. Padgett. 221,182
Saw mill buffer, reciprocating, J. D. Wilson. 221,379
Saw mill dog, J. Little. 221,176
Saws, machine for making scroll, J. F. C. Rider. 221,253
Scale beam, Bidwell & Linen. 221,149
Scalloping machine, F. Hanson. 221,303
Scraper, road, H. W. Ball. 221,273
Sewing machine shuttle, Miller & Diehl. 221,338
Shipping case and can, T. Allen. 221,143
Shirt, T. M. & E. Denham. 221,287
Smokestacks of locomotives, etc., cone for, F. A. Perry. 221,185
Spooling machines, etc., thread guide for, J. E. Atwood. 221,268
Station indicator, J. R. & W. J. Dearden. 221,160
Steam engine, A. Ehret. 221,224
Steel, manufacture of chrome, R. Brown. 221,281
Stereotype plates, machine for shaving and trimming, W. Scott. 221,366
Stopping and reversing mechanism for machinery, W. Scott. 221,193
Stove, coal oil, J. M. Adams. 221,206
Stove, heating, McCaw & Brown. 221,334
Stove or furnace, W. P. Miller. 221,179
Stove, vapor, F. Zugz. 221,205
Strings from intestines, making, P. & J. Turner. 221,199
Suspensory, L. & O. Oppenheimer. 221,348
Tap fastener, W. T. Barron. 221,275
Tanning, M. L. Doty. 221,219
Tap for tin cans, etc., Cooper & Wagner. 221,285
Telegraph lines, recorder for long, R. K. Boyle. 221,151
Telegraph repeater, firealarm, A. W. Gray. 221,229
Telephone transmitter, C. A. Randall. 221,355
Telephonic conductor, Helmes & Greenfield. 221,170
Tenter clothing, Spitzel & Lacy. 221,369
Thill coupling, W. S. Layard. 221,175
Thill coupling, T. W. & H. K. Porter. 221,188
Thill coupling and support, W. J. Morgan. 221,341
Thrashing machines, spikes, die for, F. Transue. 221,372
Tongs, spring coal, C. M. Burgess. 221,152
Toy gun, D. F. Hale. 221,302
Traction engine, J. E. Praul. 221,354
Trumpet for railway heads, P. C. Dawson. 221,159
Tug link, H. J. Moreland. 221,181
Universal joint coupling, J. Walker. 221,375
Valve mechanism for direct acting engines, G. E. Dow. 221,220
Valve, safety, F. B. Scovell. 221,194
Vehicle springing rail, J. L. Fisher. 221,285
Vehicle, shifting, J. J. Kraiss. 221,173
Velocipede, R. Steel. 221,255
Vise, F. C. Zanetti. 221,382
Wagon brake, E. W. Pritchett. 221,252
Wagon gear, E. P. Joslyn. 221,236
Wash bench or stand, folding, M. S. Rawson. 221,356
Watch case, Colby & Johnson. 221,155
Water closet, hopper, J. Demarest. 221,217
Water meter, piston, Barton & West. 221,147
Water motor, W. F. Byster. 221,225
Wells, casing head cap for oil and other, W. R. Edelen. 221,162
Wells, tubing clamp and elevator for oil, W. R. Edelen. 221,161
Whip lashes, fastening, J. I. Fowler. 221,296
Wind engine, J. Steiner. 221,370
Windmill, Morrison & Tietjens. 221,243
Window shade attachment, E. Metcalf. 221,337
Window shade cloth, making, B. Birnbaum. 221,277
Wire cloth, fastening for, M. Kennedy. 221,322
Wire drawing machine, C. D. Rogers. 221,254
Wood, compound for filling the pores of, T. G. Hojer. 221,308
Wrench, W. A. Heath. 221,305

TRADE MARKS.

- Cigars, cigarettes, and smoking and chewing tobacco, S. Jacoby & Co. 7,764
Cheese, F. Korbel & Bros. 7,766
Chewing tobacco, T. C. Williams & Co. 7,773
Chewing and smoking tobacco, I. S. Waters. 7,772
Chewing and smoking plug tobacco, I. S. Waters. 7,771
Fertilizer, J. Walker. 7,770
Fertilizing compositions or compounds, R. W. L. Rasin & Co. 7,765
Hair nets and other reticulated fabrics, A. G. Jennings. 7,767
Vinegar, F. M. Bollman. 7,768, 7,769

DESIGNS.

- Breastpin or similar article of jewelry, H. S. Somes. 11,485
Buckles, S. C. Hawkins. 11,482
Carpet, T. S. Stearns. 11,492

- Font of printing types, J. K. Rogers. 11,484
Grate fronts, F. S. Bissell. 11,480
Group of statuary, J. Rogers. 11,486
Handles of china and other vitrified ware, C. F. A. Hinrichs. 11,483
Knit drawers, Swits Conde. 11,498
Knit shirt, Swits Conde. 11,486 and 11,489
Oil cloth, C. T. & V. E. Meyer. 11,487 to 11,494
Watch chain ornaments, J. U. Gerow. 11,481
Withdrawn. 11,497

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