(9) H. S. asks: 1. Please let me know through the SCIENTIFIC AMERICAN what mineral wax is used for and what is it worth? A. It is chiefly valued for the paraffine which it yields, and its value depends upon the percent of this substance which it contains Refined paraffine is quoted at 20 cents per lb. 2 and 3. And what does a machine for making pins cost? How many different sizes of machines are there in a pin factory? A. Address dealers in such machinery who advertise in the SCIENTIFIC AMERICAN. See Knight's New Mechanical Dictionary for descriptions, etc.

(10) A. P. R. asks: What is the horse power of a boiler of the following dimensions: fire box 4 feet long, 3½ feet wide, and 3½ feet high, with 113 tubes, 1¾ hole, and 11 feet 10 inches long? A. Your boiler is out of proportion, except for forced combustion; too little grate for the tube surface. It would be about 50 horse power.

(11) R. W. asks: 1. In making a cistern, is it necessary that the coat of cement should be permitted to get perfectly hard and dry before fitting the cistern? A. No, if the cement be a hydraulic cement. 2. If water be permitted to fill a cistern, with the cement still moist, will the water be pressed through the coat of cement, and thus spoil it; or will the cement grow hard and made a good cistern, notwithstanding the pressure of the water? A. Not if properly cemented. It will grow hard, but it is better to let it harden before the water is put in. 3. Can you give us the title of a book from which we could derive the necessary knowledge for building good cisterns? A. We know of no book which treats on the subject specially; "Beckwith's Hydraulic Lime and Teil" will give you general information respecting the use of hydraulic limes.

(12) C. O. S. asks how to soften sheet cork so as to make it pliable and easily shaped in an oval shape. A. Steam it thoroughly, or boil it in water for an hour or so.

(13) F. N. asks how to make a gas that will inflate small balloons in country towns where there is no ordinary burning gas. A. Place a quantity of zinc scraps in a bottle, pour over them a mixture of sulphuric acid and water, and hydrogen gas will be rapidly evolved. Convey this gas through a wash bottle to your balloon. This experiment should not be performed in the vicinity of a light or fire.

(14) G. A. H. asks: 1. What is the most constant galvanic battery now made; how long will it remain active by one charging; and how many cells are required of such to produce the electric light (moderately powerful)? A. The gravity or Daniell. They remain in order from 6 to 9 months. It would require 100 cells to produce a small light. 2. Why is graphite not suitable for the carbons? A. Because of its inferior conductivity. 3. Can mica be colored like stained glass, and if so, by what process? A. Apply lacquer tinted with aniline or other transparent colors.

(15) W. S. D. says: This morning, as engine 265 on the B. & O. R. R. was about five miles from here, the fireman went out on the front to put the head light out; but when he opened the door of the head light the wind seemed to fan the flame, and in an instant the whole thing was afire. He returned to the car for water, which seemed to have no effect on the burning oil. The engineer was compelled to stop his train and open his cocks on it after they had taken it down. A. The body of the oil in some way, doubtless, became heated above the inflaming point.

(16) E. S. asks: 1. What is the difference between a cape and a chipping chisel in shape and average width of cutting edge? A. A cape chisel is a narrow edged chisel, the cutting edge being from one-eighth inch to three-eighths inch wide. A chipping chisel is for work on surfaces, and is generally from three-quarters of an inch to one and a quarter inch wide. 2. Are cold chisels and chipping chisels the same, or is there a difference? A. Same thing. 3. What is a good width for the cutting edge of a scraper? A. Depends upon the kind of work. 4. Is ten or eleven feet per minute a proper speed for drilling wrought and cast iron, both of good quality? A. Ten to fifteen feet, depending upon the kind of drill and character of the metal.

(17) C. D. A. asks: 1. Is it of any advantage to an engine to reverse it every six months or year; that is, let it run six months in one direction, then six months in the other? A. It would equalize the wear. 2. How do you tell the condition of boiler iron with a hammer, or by giving it what is called the hammer test? A. By the sound. 3. Where, in Michigan, can an engineeer be examined to obtain a license? A. At Detroit, and, we believe, at Port Huron.

(18) "Student" asks: 1. If three pine logs, twenty-five feet long, fifteen inches diameter at small end, would have buoyant capacity enough to hold a boat's crew weighing about 700 lb.? A. Yes, if white pine. 2. Would one inch iron bolts be heavy enough to hold them together, if bolted to heavy cross pieces? A. Yes.

(19) P. J. M. asks: 1. What power is required to work a Cornish pump, 20 inch stroke, 8 inch discharge pipe, situated in a mine the shaft of which is 70 feet deep? A. If the pump makes 12 strokes per minute, 6 horse power, and for any other speed in proportion. 2. What power is requisite to hoist 800 lb. 70 feet per minute, that is from the same shaft? A. 17 horse power. To these powers should be added at least 25 percent for friction. 3. What size engine and boiler would be required to perform both these duties at the same time? A. An engine of 30 horse power.

(20) D. H. writes: 1. I have a hull, 35 feet long, 10 feet beam, draws 36 inches. Now, what size engine do I need? A. Engine 8 inches diameter by 8 inch stroke. 2. What size propeller? A. Propeller 42 inches diameter.

(21) G. H. C. asks: If a vessel is filled with steam at 60 lb. pressure per square inch, then placed in a furnace of 1,000° temperature; supposing that the vessel is absolutely steam tight, will the pressure in vessel rise as the temperature rises, and what will be the pressure in said vessel per square inch when raised to 1,000°? A. Yes; it will increase in pressure about $\frac{1}{480}$ for every degree of increased temperature; in other words, an increase of 480 degrees would double the pressure.

(22) C. W. S. writes: I have a telephone line 1,200 feet long, and have for alarm vibrating bells to be worked by six cells of Leclanche battery. What are the proper connections and switches? I wish to use one wire, with ground connections at each end. A. To use a single wire for your purpose you will have to divide your battery and place three cells at each end of the line. For calling use at each end of the line a key that grounds the line when raised, and connects the line with the battery when depressed. Now, your bells being in the ground wire outside of the keys, pressing the key at one end of the line will ring the bell at the other end of the line, and *vice versa*. Connect your telephone with the ground wire, and arrange a switch that will cut the battery and bell out of the line, and at the same time direct the battery current to the transmitter, and the secondary current of the induction coil to the line. The receiving telephone should be connected with the secondary wire of the induction coil, between the latter and the switch which connects it with the line.

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

J. S.—Galena—lead sulphide.—G. W. K.—Sulphide of iron.

COMMUNICATIONS RECEIVED.

On Science and Revelation. By P. S. H.
On Cause of Diseases. By L. H. K.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending October 12, 1880,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, 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. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Air cooling apparatus, J. Chellew ... 233,072
Air engine, J. Ericsson (r) ... 9,414
Air engine, E Thuemmler ... 233,125
Alarm lock, C. W. Ziegler ... 233,172
Album clasp, Vorpahl & Pohl ... 233,174
Amusement and instruction, device for, F. Becker 233,198
Animal trap, Stevens & Hampton ... 233,123
Annunciator, hotel, J. H. Giles ... 233,087
Axle bearing, C. E. Candee ... 233,068
Axle box, car, G. J. Holton ... 233,152
Axle box ends, machine for trimming vehicle, J. L. Haven ... 233,150
Axle, carriage, D. Wentworth ... 233,307
Barber's chair, H. A. Candrian ... 233,140
Barrel cover and sample case, combined, T. W. Lacock ... 233,258
Barrel filler, J. P. Holt ... 233,247
Bathing apparatus, H. D. Ward ... 233,304
Bobbin winding machine, A. Paul ... 233,112
Boiler furnace, G. S. Bosworth ... 233,194
Boot and shoe, Gemmell & Boyd ... 233,142
Boot and shoe finishing machinery, J. G. Buzzell 233,067
Boot and shoe soles, polishing wheel for, W. W. Crocker ... 233,211
Boot treeing machine, J. E. Crisp ... 233,210
Bottle filler, G. D. Barr ... 233,187
Bottle stopper, A. Walker ... 233,308
Box, W. Livingstone ... 233,265
Box fastener, W. Jones ... 233,252
Bracelet, W. Ballou ... 233,188
Bridle bit, E. E. Wheeler ... 233,309
Bucket, dinner, W. E. Jones ... 233,253
Bullet, J. C. Petmecky ... 233,114
Butter package, G. W. Bradley ... 233,195
Butter trier, A. O. Cheney ... 233,202
Button, sleeve and cuff, L. H. Thomas ... 233,299
Cans, machine for placing heads in, Dillon & Cleary ... 233,079
Car coupling, S. Haltom ... 233,092
Car coupling, W. Tucker ... 233,302
Car, stock, L. Woodruff ... 233,129
Car wheel, J. Findlay ... 233,222
Card screen, W. J. English ... 233,221
Carding machine, F. M. Cole ... 233,206
Carpet sweeper, M. R. Bissell ... 233,137
Carriage curtain fastening, W. Kimble ... 233,255
Carriage wheel, A. M. Williamson ... 233,311
Cartridge shells, apparatus for annealing, E. R. Hunt ... 233,250
Cartridge shells, machine for feeding, J. H. Barlow 233,062
Cartridge shells, machine for feeding, M. V. B. Hill 233,095
Chain, drive, D. Schustek ... 233,118
Chromotrope, transparent, Erwin & Van Altena. 233,084
Chuck, watchmaker's latbe, C. Hopkins ... 233,097
Churn power, C. S. Casterlin ... 233,141
Churn, rotary, L. W. Murch ... 233,272
Clasp, D. A. Johnson ... 233,099
Clothes drier, J. E. White ... 233,176
Clothes sprinkler, J. S. Zerbe ... 233,130
Collar stay fastening, breast, C. A. Harmstead ... 233,093
Cooker, steam, J. Lidstone ... 233,261
Corn-machine for making food from hulled, W. S. Fickett ... 233,085
Corn shellers, beater for, C. C. Burroughs ... 233,066
Cotton gin carding attachment, J. Wright ... 233,313
Cracker packing machine, W. S. Hayward ... 233,245
Cultivator shovels, steel blank for repointing, H. Giles ... 233,149
Cutter head, G. J. Shimer (r) ... 9,403
Dental engine, E. T. Starr ... 233,294
Desk, cabinet, J. A. Moore (r) ... 9,402
Distilling apparatus, fresh water, G. W. Baird ... 233,184
Egg beater, G. A. Schmidt ... 233,287
Ejector, liquid, T. J. Holmes ... 233,248
Electric light, A. G. Holcombe ... 233,096
Electrical switch board, P. A. Dowd ... 233,081
Elevator, H. C. Goodrich ... 233,232
End gate, wagon, M. Reichert ... 233,280
Envelope opener, M. R. Mucklé ... 233,161
Evaporating furnace, G. W. Russell ... 233,117
Feed water regulator, automatic, J. E. Bott ... 233,199
Fence post, McLean & Henry ... 233,271
Ferrule for awl handles, J. Steinmeyer ... 233,295
Fifth wheels, die for swaging blanks for, D. Wilcox ... 233,128
Firearm, breech-loading, D. Kirkwood ... 233,256
Firearm, breech-loading, I. M. Milbank (r) ... 9,405
Firearm lock, A. Johnson ... 233,100
Fire extinguisher, A. M. Granger ... 233,235
Fire shield, M. V. Smith ... 233,120
Form, adjustable dress, J. Hall ... 233,240
Form, dress, J. Hall ... 233,239
Form for garments, adjustable, H. G. Ufford ... 233,173
Fruit and vegetable drier, L. Marvin ... 233,157
Fruit drier, J. W. Clark ... 233,078
Fruit drier, J. B. Sweetland ... 233,298
Gas or vapor burner, C. F. Burnap ... 233,065
Gem setting, H. G. Mackinney ... 233,158
Governor, engine, Waterhouse & Brewer ... 233,175
Grain binder, M. L. Gorbam ... 233,089
Grain binder, P. F. Hodges ... 233,151
Grain binder, E. W. Jenkins ... 233,098
Grain drier floor, W. & F. Toepfer ... 233,301
Grain drill, W. H. Nauman ... 233,109
Grain grading and scouring apparatus, L. O. Stevens ... 233,297
Grain register, O. J. Dimmick ... 233,216
Graining machine, R. A. Adams ... 233,179
Grinder, grain, J. & R. Bean ... 233,192
Grinding mill, J. Rae ... 233,278
Hame fastener, T. L. Wiswell ... 233,312
Hay rake, horse, W. S. Bates ... 233,191
Hedge, plashed, D. M. Kirkbride (r) ... 9,415
Heel trimmer, F. Moulton ... 233,108
Hinge blanks, die for making sheet metal, J. W. A. Beers ... 233,135
Hog cholera remedy, W. H. Emerick ... 233,083
Hoisting apparatus, differential pulley, B. Hinsley 233,246
Horse blanket, F. M. Osborn ... 233,275
Horse power for gins, etc., W. H. Harvey ... 233,244
Horse rake, J. H. Barley ... 233,133
Horseshoe, H. W. Grage ... 233,234
Hot air and steam engine, C. A. Marrder ... 233,268
Hydraulic elevator, J. W. See ... 233,286
Hydrocarbon burner, J. W. Culmer ... 233,212
Hydrocarbon burner for steam boilers, etc., liquid, W. H. Weeks ... 233,305
Injector, Sellers & Bancroft (r) ... 9,407
Ironing machine, J. A. Bowden ... 233,064
Kettle, steam jacket, W. N. Barrows ... 233,189
Kiln for burning pottery ware and other articles, W. French ... 233,230
Knitting machine, straight, W. Aiken ... 233,061
Lamp, electric, J. H. Guest ... 233,236
Lamp, electric, W. Sawyer ... 233,284
Lamp, electric, C. W. Siemens ... 233,289
Lamp extinguisher, J. W. Donovan ... 233,218
Lantern, C. F. Moeller ... 233,107
Laps, arrangement of apparatus for and process of forming, J. Batty (r) ... 9,413
Lasting jack, G. W. Willey ... 233,177
Log canter, R. Weir ... 233,306
Loom for weaving tufted fabrics, Skinner & Tymeson ... 233,290
Loom let-off mechanism, J. D. Cottrell ... 233,077
Loom, needle, Skinner & Tymeson ... 233,291
Lounge and bath, combined, J. H. Lea Mond ... 233,158
Lubricating composition, C. F. Broadbent ... 233,197
Magneto-electric machine, C. F. Brush (r) ... 9,410
Measure and register, grain, C. S. Bell ... 233,136
Medicinal compound, H. J. Boughton ... 233,063
Metal objects ornamented with incrustations of celluloid, rubber, horn, etc., producing, O. Von Corvin ... 233,076
Millstone dress, T. H. Bale ... 233,132
Millstones on their spindles, device for balancing, J. Comerford ... 233,207
Mining machine, coal, J. W. Harrison (r) ... 9,408
Mower and reaper knives, machine for grinding, C. Askew ... 233,182
Mower and reaper knives, machine for grinding, J. W. Elliot ... 233,082
Musical instrument, mechanical, I. M. Furbish ... 233,147
Nursery chair, J. C. Klett ... 233,257
Ordnance, breech-loading, S. M. Richardson ... 233,115
Ordnance lock, J. B. Davis ... 233,142
Ordnance primer, J. B. Davis ... 233,143
Ore crusher and pulverizer, combined, G. F. E. Brinckmann ... 233,189
Paint, distemper, C. G. Dodge, Jr. (r) ... 9,411
Paper cutting machine, C. Spring ... 233,121
Paper, manufacture of wood pulp for, J. Chase ... 233,070
Paper pulp from wood, machine for making, R. B. Lane ... 233,105
Paper waxing machine, G. H. Rich ... 233,282
Pen, stylographic, A. W. Lozier ... 233,155
Pen, stylographic fountain, A. W. Lozier ... 233,106
Pianocase, G. Woods (r) ... 9,412
Pianoforte action, Kranich & Bach ... 233,103
Pipes, securing certain parts of subterranean, S. E. Babcock ... 233,183
Piston, B. J. Sitton ... 233,169
Piston spring, W. Lockwood ... 233,262
Plow, H. Gollyer ... 233,088
Pocket knife, T. M. Grilley ... 233,091
Preserving fruits and other articles, M. F. Derby. 233,217
Press, Boomer & Boschert ... 233,193
Printing machine, oscillating, T. Forknall ... 233,227
Propeller for boats, vibrating, T. J. Coulter ... 233,209
Propelling vessels, J. Trent ... 233,127
Pulley, friction, A. T. Arnold ... 233,181
Pulp engine, wood, J. Chase ... 233,071
Pump, lift, C. B. Putnam ... 233,164
Pump, oil, Gaskill & Benton ... 233,231
Railway draw bar, D. S. Beals (r) ... 9,401
Railway switch, W. P. Dodson ... 233,146
Reaper, F. J. Lampton ... 233,259
Refrigerator, J. M. Harrop ... 233,243
Rein holder, automatic, P. W. Nelson ... 233,110
Roofing, thatched, C. McClelland ... 233,269
Rotary engine, A. C. Lewis ... 233,260
Rubber cloth, enameled, E. M. Stevens ... 233,296
Rubber with metal coating, J. A. Daly ... 233,144
Ruler and pencil case, combined, H. T. Cushman. 233,203
Sand band, L. R. Lupton ... 233,266
Sash cord guide, W. H. H. Kesler ... 233,254
Sawing machine, Thomas & Mills ... 233,126
Scraper, chopper, and dirter, combined, Hall & Milton ... 233,241
Scraper, dirt, W. C. Squire ... 233,122
Seeding machine, A. N. & D. C. Norris ... 233,111
Sewing machine, C. H. Thurston ... 233,300
Shaft coupling, H. S. Fontaine ... 233,225
Sheet metal vessel, T. G. F. Dolby ... 233,080
Ship, buoyant propeller, R. M. Fryer ... 233,086
Show case, R. B. Dando ... 233,213
Show case, J. C. Wharton ... 233,308
Sink trap, J. H. Langschmidt ... 233,104
Skate fastener, heel, E. S. Coon ... 233,204
Skipping rope, Flynt & Young ... 233,224
Slate cleaner, L. J. Halbert ... 233,238
Sleigh, T. Buckingham ... 233,200
Smoke consuming furnace, D. Sinton ... 233,168
Spark arrester, R. F. Swan ... 233,171
Spark arrester, locomotive, A. Berney (r) ... 9,40
Spittoon and table or tray holder, adjustable, E. T. Starr ... 233,1
Spool support, W. S. Auchincloss ... 233,131
Spoon, medicine, T. M. Baker ... 233,185
Springs, apparatus for tempering coiled, W. P. Hansell ... 233,242
Stamp, hand, L. K. Scotford ... 233,285
Starching machine, N. Taylor ... 233,124
Steam boiler, I. R. Kern ... 233,102
Steam engine, direct acting, J. W. Cole ... 233,208
Steam generator, N. Will ... 233,31
Steam generator, sectional, H. Heine ... 233,091
Steamboat staging, J. B. Mooney ... 233,159, 233,160
Steamer, feed, W. Collings ... 233,074
Stone dressing machine, M. Greer ... 233,090
Stove board, H. Rendtorff ... 233,165
Stove, gas, A. L. Rossetti ... 233,283
Stovepipe thimble, G. E. Palmer ... 232,113
Syringe, double acting pump, J. Ramsey, Jr ... 233,279
Tablet, writing, J. I. Carr ... 233,069
Taxidermy, ichthyological, H. E. Davidson ... 233,078
Telegraph, fire alarm, G. R. Floyd ... 233,223
Telegraph lines, terminal for underground, W. R. Patterson ... 233,162
Telegraph relay and sounder, W. E. Davis ... 233,214
Telegraphy, W. S. Brewer ... 233,138
Telephone, J. H. Irwin ... 233,251
Telephone, acoustic, J. S. Davis ... 233,215
Theatrical and gymnastic performances, apparatus for use in, G. Oliver ... 233,274
Theatrical performances, apparatus for use in, G. Oliver ... 233,273
Thill coupling, D. W. Shoudy ... 233,119
Threads, machine for cleaning and smoothing silk and other, Martin & Taylor ... 233,156
Time piece, railway, D. P. Hoyle ... 233,249
Time signal, J. Johnson ... 233,101
Tinned plates by heat and pressure, machine for uniting, G. H. Perkins (r) ... 9,406
Tobacco cutting machine, W. H. Emery ... 233,220
Torch, H. Préfontaine ... 233,163
Toy, R. M. Rose ... 233,166
Traveling bag, J. W. Lieb ... 233,154
Truck, hand, Skinner & Stewart ... 233,292
Truck, plow, S. Peters ... 233,276
Trunk fastener, A. C. Frankel ... 233,229
Type case, A. A. Low ... 233,264
Type writer, J. W. Breckenridge ... 233,196
Vacuum brake ejectors, exhaust apparatus for, E. Longstreth ... 233,263
Valve, gate, E. Allt ... 233,180
Valve gear, steam hammer, W. C. Barr ... 233,188
Valve motion, W. Camerer ... 233,201
Valve, steam engine, F. W. Gordon ... 233,233
Vehicle, side spring, D. A. Sprague ... 233,293
Vehicle wheel, Dudley & Jones ... 233,219
Vulcanite fiber cutter, W. C. Coddington ... 233,205
Wagon, spring, M. Conrad ... 233,075
Wall paper, machine for bronzing, J. Schneider ... 233,167
Water closet, J. Demarest ... 233,145
Water tanks, water column for railway, T. J. McGowan ... 233,270
Water tube boiler, sectional, A. H. Fowler ... 233,228
Weather strip, A. Pratt ... 233,277
Weaving gauze, doup heddle for, E. Maertens ... 233,267
Welt trimmer, W. R. Barton ... 233,190
Whiffle tree clip bolt, Reinhold & Schreiber ... 233,281
Windmill, J. S. Adams ... 233,178
Windmill, G. M. Beard ... 233,134
Windmill, W. Forbes ... 233,226
Windmill, A. W. Haag ... 233,237
Wire cables, machine for making barbed, N. G. & T. D. Ross ... 233,116
Wire looping and cutting machine, W. Wilson, Jr. (r) ... 9,404
Wool and other fibers, apparatus for opening and loosening, F. F. Seeland ... 233,288

DESIGNS.

Fountain, W. Tweeddale ... 11,975
Gimp, W. V. Oothout ... 11,977
Knit fabric, C. E. Bean ... 11,976
Type, font of printing, J. K. Rogers ... 11,978

TRADE MARKS.

Bluing, liquid, S. S. Newton & Co ... 8,062
Cigars, Gumpert Brothers ... 8,060
Cigars, H. Huckfeld ... 8,061
Cigars, cigarettes, and chewing and smoking tobacco, N. Kuhnen ... 8,057
Cigars, cigarettes, and smoking and chewing tobacco, Lozano, Pendas & Co ... 8,065
Coffee, roasted, Arbuckle Brothers ... 8,058
Flour, B. R. Pegram, Jr ... 8,063, 8,064
Medicinal preparation, G. G. Green ... 8,059
Piano, J. Estey & Co ... 8,056
Soap, J. H. Van Dyke ... 8,066

English Patents Issued to Americans.

From October 5 to October 12, 1880, inclusive.

Car coupler, W. S. Sampson, New York city.
Carpet lining, J. F. Rodgers *et al.*, Philadelphia, Pa.
Caster, J. M. Harper, El Paso, Ills.
Conveying materials, W. Winterhalter, San Fran., Cal.
Core metal, F. Hyatt, New York city.
Electric signaling apparatus, F. Blake, Weston, Mass.
Firearm, B. Burton, Brooklyn, N. Y.
Hat band, J. Peters *et al.*, Philadelphia, Pa.
Horseshoe, J. N. Navin, Indianapolis, Ind.
Horseshoe nail machinery, J. M. Laughlin, Boston, Mass.
Neck yoke, J. L. Babb, Greenland, W. Va.
Ore smelting apparatus, T. G. Hall *et al.*, Buffalo, N. Y.
Printers' metal furniture, J. L. Chapin, New York city.
Pump, P. E. Jay, New York city.
Rope machinery, C. E. Barnes *et al.*, Lowell, Mass.
Screw threading machine, S. L. Worsley, Buffalo, N. Y.
Sewing machine, J. Keith, Rhode Island.
Steam engine, G. H. Corliss, Providence, R. I.
Steering apparatus for vessels, J. F. Guild and A. E. Knight, Shanghai, China.
Stone dressing machinery, J. A. McKean, Mt. Morris, Ills.
Syringe, J. Davoe, Providence, R. I.
Velocipede, G. W. Pressey, Hammonton, N. J.
Water, apparatus for supplying, L. W. Green, N. Y. city.
Water, checking waste of, E. E. Furney, St. Louis, Mo.
Wire, process for saving the gas generated in cleaning, R. N. R. Pbelps, New York city.
Wood, preservation of, A. E. Barthel, Detroit, Mich.