(26) C. L. V. writes: I have been gathering carnelians and agates for quite a while. Having a nice collection now, I should like to polish them. Will you please tell me if there is any other way or method of polishing them besides cutting them? If so what is the method? A. You may shape your carnelians with a corundum wheel such as is commonly used by dentists, and they may be tolerably well polished on a fine Arkansas oilstone fitted to the lathe.

(27) J. P. J. writes: I wish to build a scow about 60 feet long, and 18 or 20 feet beam, and 4 feet hold, decked over forward and not to draw over 3 feet of water when loaded. 1. Could I put on a stern wheel and successfully propel it by steam, at the rate of 3 or 4 miles per hour? A. Yes. 2. If so, about what horse power engine would it require, or would I have to use two smaller engines? A. One engine, 9 inch cylinder by 2½ feet stroke, or two equal to this in power. 3. Would an upright boiler answer, and what size? A. Yes; consult a good engineer as to size and proportions. 4. What size should the wheel be? A. 9 to 10 feet diameter. 5. And about how many paddles? A. Ten. 6. Would it be better to have it longer and less beam? Will a square bow answer? A. Longer and less beam would be better; a square bow will answer for a light draught.

(28) A. H. asks: 1. Is crude petroleum superior to coal for smelting iron? A. If it could be practically and economically applied, yes. 2. If so, is it used for that purpose to any extent? A. No. 3. Is iron ore with 60 per cent of iron and 5 per cent of sulphur a good ore for smelting, say with petroleum? A. No. 4. What back numbers of the SCIENTIFIC AMERICAN contain information about petroleum; iron smelting with petroleum, and is there any book published about iron smelting with petroleum? A. See pp. 352, 69, 90, 368, and 85, vol. 39, SCIENTIFIC AMERICAN. We know of no such book.

(29) W. J. H. asks for a compound used to harden iron. A. Heat the iron to a cherry red, dust on powdered yellow prussiate of potash, and plunge in cold water.

(30) "Subscriber" asks if a pipe 12 feet high, 6 inches diameter, be filled with water, the pipe to be made of material just strong enough to hold the water, would a pipe of same height, capable of holding three times the amount of water, have to be of stronger material? A. If of same height, yes.

(31) W. K. H. writes: Let us suppose a 10x12 engine, running at 200 revolutions, 400 feet piston speed, with a 5 foot driving wheel. Then a 10x24 engine, 100 revolutions, same piston speed as above. Now, to communicate the same speed to the driven machinery we must have a 10 foot driver, which exactly balances the leverage gained by the stroke. Am I right? A. Yes.

(32) J. S. S. writes: In "Notes and Queries," April 19 (11), you say: "J. W. W. asks: 1. What degree of centigrade is water at its greatest density? A. 4°, equal 39·2° Fah." In "The Depths of the Sea," by Prof. C. Wyville Thomson, Macmillan & Co., London, 1874, the author says, on page 306, that on the cruise of the Lightning, August, 1868, he found the temperature at the bottom of the sea —1·2° centigrade; and on the cruise of the Porcupine, August, 1869, page 309, he found —1·3° centigrade, more than 5° centigrade lower than the answer to J. W. W. A. The fact that the temperature is below 4° cent. at the bottom of the sea does not prove that the density of the water is greatest there. Water is practically incompressible, and expands both above and below 4° cent.

(33) A. K. writes: I want to make an induction coil like the one described in SUPPLEMENT No. 160. I have made the tube out of maple wood, ⅞ of an inch internal diameter and fifteen sixteenths of an inch external diameter. 1. Will this do? A. Yes. 2. Should it be varnished? A. Yes. 3. Must the hammer be soft iron? A. Yes. 4. How many thicknesses of thin writing paper should I put around each coil or layer of the secondary coil? A. Four. 5. Should it be varnished? A. Not necessarily. 6. What battery is the best as regards strength, durability, and cost? A. Probably the Grenet will answer your purpose best. 7. How many will I need for the coil to get the best results? A. Three, of good size.

(34) A. M. S. writes: Suppose a wood planer to have a cylinder 5 inches in diameter, with 3 knives set at an angle of 45° with the radius, and making 4,000 revolutions per minute. Will such planer cut any smoother or better with the edge of knives projecting only ⅛ of an inch over chip break, than it would with the knives projecting five sixteenths or three eighths of an inch? A. Yes.

(35) S. E. M. writes: I wish to make an ink that will copy several days after writing with it. A. Use a strong aqueous solution of soluble nigrosin (a variety of aniline black soluble in water), containing a few drops of clove oil to prevent moulding.

(36) J. W. P. asks what the Italian statuary or image makers put in their plaster of Paris so as to make it resemble marble. Some of their wares are very finely cast with a fine outside polish. A. Saturate the dry cast with melted (pure) stearine or stearic acid.

(37) B. A. M. asks: 1. Is not aniline red a poison? A. Pure fuchsin or magenta is hurtful, if not poisonous, when taken into the system in any considerable quantity. The commercial aniline red often contains traces of arsenic, owing to the employment of arsenic acid in its production. 2. Are there no means of neutralizing it without spoiling the wine which contains it? A. No. 3. How can it be detected in wine? A. See p. 344, vol. 39, SCIENTIFIC AMERICAN, and pp. 862, No. 54, 593, No. 38, and 637, No. 40, SCIENTIFIC AMERICAN SUPPLEMENT.

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

E. D. B.—It is difficult to determine a plant from such material alone, but we are very positive that it is one of the milkweeds, probably the very widely distributed *Asclepias cornuti*. If so, we may state that numerous partially successful attempts have hitherto been made to obtain from the tough stems of the plant a textile fiber and a paper stock. The plant, although common, is not found in sufficient abundance in a wild state to afford any very great supply. We are not aware of any experiments that have been made to ascertain whether its cultivation would prove profitable; if you have facilities it would be an interesting matter to devote a little land and time to its cultivation to find out this.—D. B. B.—No. 1. The rock is a serpentine. The crystals appear to be alunite and prehnite—quantity too small for proper classification. No. 2. Graphitic granite. Nos. 3 and 4. Hornblende and feldspar. In No. 3 the red crystals are garnets. No. 5. A ferruginous clay containing carbonaceous matters.—No. 6. Doleritic rock. No. 7. Chiefly calcite containing marcasite. No. 8. Coal shale.—L. W.—It is an impure clay—aluminum silicate—containing much lime carbonate, iron oxide, magnesia, and traces of alkaline chlorides. If properly washed it might be serviceable in the manufacture of bricks, tiles, drain pipes, cheap pottery, etc. It cannot be used for soap making, as the per cent of alkalies is very small.—J. A. S.—It is an impure alum—of some value if found in any considerable quantity. An analysis would be requisite to determine its actual value.—C. F.—No. 1. A schistose conglomerate. No. 2. Ferruginous sandstone. Ground, washed, and calcined, this may produce a cheap bright red pigment.

COMMUNICATIONS RECEIVED.

On Motion of Perimetral Points in a Rotating Shifting Wheel. By J. P. B.
On Squaring the Circle. By G. M. A.
On the Polar Sea. By F. G. N.
On Canals. By J. S. B.
On the Hop Plant. By H. W.
On Oilers. By A. B.
On Forgery and Science. By J. E. E.
Wagon Wheel Question. By S. N. M.
On Mosquitoes. By E. P.
On Cipher Writing. By J. W. W.
On Rose Hips. By C. F. E.
On Lunar Calendar. By J. D. S.
On Life Saving Apparatus. By Nauticus.
Machine for Covering Wire. By J. B.
On Telephones and Sounders. By H. H. E.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

April 8, 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.

Adjustable gate, F. Danzenbaker 214,112
Air engine, compressed, H. Matthes 214,050
Anchor, power, E. S. Webster 214,217
Animal trap, S. Earle 214,119
Animal trap, P. E. Willford 214,013
Animal trap, Williams & Chapman 214,221
Ax poll maker, D. W. & H. Johns & Embs 214,151
Axle and skein, vehicle, N. L. Holmes 214,137
Axle, car, H. Watkeys 214,069
Axle skein, vehicle, C. Hotz 213,990
Bale tie, S. N. Drake 214,117
Bale tie, cotton, H. A. Burr 214,099
Baling press, E. F. McGowen 214,167
Bedstead, cabinet, M. Crosby 214,110
Bell, door alarm, E. J. Cubley 214,111
Bevel, J. D. Hobbs 213,987
Beverage dispenser, aerated, C. J. Dietrich 213,980
Blind opener, window, J. Bradley 214,093
Blind, Venetian, T. Langdon 214,158
Blinder, B. W. Webster 214,216
Book keeping apparatus, Dow & Brown 213,981
Boot leg support, C. H. Tibbetts 214,206
Bottle stopper, W. H. Hicks 214,039
Bottle stopper, C. G. Hutchinson 213,992
Box cover spring, C. S. Merrill 214,169
Bricks, etc., coloring, G. P. Cole 214,106
Buckle, trace, C. B. Bristol 214,096
Burglar alarm, H. Hart 214,129
Calculator, mechanical, H. H. Ham, Jr. 214,128
Car brake and starter, Crocker & Lytle 214,026
Car brake and starter, J. P. Dickson 214,116
Car buffer, E. H. Janney 214,043
Car chair, R. H. Morgan 214,051
Car coupling, G. Butler 213,974
Car coupling, E. Wilson 214,223
Car, postal, C. R. Harrison 214,036
Car pusher, E. P. Phelps 214,187
Car seat spittoon, Smith & Hallstead 214,058
Car starter, H. Welch 214,070
Cars, ventilating railway, C. E. Lucas 213,994
Carpet stretcher, J. D. Whitney 214,219
Carriage clips, die for making, R. R. Miller 214,172
Carriage top extension joint, J. E. Reeves 214,193
Cartridge loader, C. Green 213,985
Casting, apparatus for withdrawing patterns from moulds for, S. J. Adams 213,964
Castings without blow-holes, steel, F. Valton *et al.* 214,210
Chain, ornamental, W. W. Alden 214,075
Chain, ornamental, J. J. Horton 214,141
Check rower and dropper, J. Babcock 214,079
Cheese press, E. Cooper 214,107
Cigar buncher, J. R. Williams 214,015
Cigar pipe, I. P. Maxwell 214,164
Clamp, L. Austin 214,078
Clock, C. Ostrom 213,999
Coal scuttle, H. L. Arnold 214,077
Coffee, tablet of, J. B. Sultzer 214,011
Coffin head rest, J. S. Richardson 214,052
Coin holder, G. C. Hatch 214,130
Coke oven, L. Bemelmans 214,086
Collar, breast, R. E. Miles 214,170
Comb, F. Rheinhardt 214,194
Condenser, injector, J. E. Bott 214,090
Corset, W. L. Ahrens 214,074
Corset, D. H. Fanning (r) 8,663
Cotton, hay, etc., press, W. J. F Liddell 214,046
Cotton press, Matthews & C. R. Morehead, Jr. 214,163
Cultivator, L. Davis, Jr. 214,113
Cultivator, Holly & Jones 214,138
Dental floss carrier, A. P. Merrill 213,997
Dental forceps, A. Cobb 214,104
Desk and settee, school, J. H. Nichols 214,178
Desk, school, W. A. Bradford 214,092
Distillation of hydrocarbon oils, apparatus for the continuous, W. Ryder 214,199
Dog power machine, W. C. Rench 214,005
Door spring, L. A. Warner 214,213
Drilling machine, metal, D. Harrington 214,035
Electric motor, G. H. Bangs 214,082
Elevating apparatus, T. Critchlow 214,109
Embroidering machine, Jacquard, M. Umstadter. 214,209
Envelope, J. P. McCullough 214,165
Evaporator, M. Brownell 213,971
Eyelets and tubular rivets, setting, A. B. Edmands 214,030
Eyelet setter, A. B. Edmands 214,031
Faucet and measurer, self-closing, J. J. Bishop 214,018
Feather renovator, H. N. Rawson 214,191
Fence, barbed, J. Brinkerhoff 214,095
Fence, barbed wire, M. W. Colwell (r) 8,665
Fence, portable, P. Huffman 214,146
Fence post, P. H. Inman 213,993
Fence wire maker, barbed, F. Billings 213,966
Fences, barbed wire for, W. H. Waser 214,211
Fibers in mixed fabrics, separating animal from vegetable, J. Wilkins 214,222
Firearm, breech-loading, H. A. Buck 214,092
Firearm, magazine, B. C. Gough 214,123
Fire engine, steam, J. E. Prunty 214,004
Fire escape ladder, J. R. Winters 214,224
Flower pot holder or stand, C. W. Stearns 214,061
Folding chair, E. E. Morse 214,174
Furnaces, feeding air to, J. V. Motter 214,176
Game apparatus, E. Macy 214,048
Garbage sink, G. G. Richmond 214,006
Gas lighter, electric, A. R. Molison 214,173
Gas pressure regulator, F. G. Johnson 214,153
Gas, process and apparatus for the manufacture of coal, C. W. Isbell 214,042
Gas regulator, R. R. Ball 214,081
Gas regulator, T. Whaley 214,218
Glass, etc., ornamenting, Potter & Glahn 214,188
Glass vessel, incased, D. W. Norris (r) 8,658
Glassware, flaring, O. P. Jackson 214,150
Glassware former and finisher, D. C. Ripley 214,053
Glassware, shaper and finisher for pitchers and like articles of, D. C. Ripley 214,054
Globe, time, L. P. Juvet (r) 8,666
Grain drier, P. Provost 214,189
Grain drill gauge, P. W. & H. G. Briggs 214,094
Grain separator, magnetic, Cook & Thayer 214,025
Grinder and polisher portable, H. Howson 214,144
Grinding mill, E. Rhodes 214,195
Grinding mill motor, L. Langevin 214,159
Gun, spring, M. Coloney 213,976
Hame clip, P. Burns 214,019
Hand and foot power, J. Dick, Jr. 214,028
Harrow, L. C. English 213,983
Harrow, pulverizing disk, R. D. Norton 214,180
Hat stretcher and blocker, C. S. Coom 214,108
Hatch for street elevators, P. Hinkle (r) 8,664
Hay fork, horse, I. W. Heysinger 213,986
Hay fork, horse, T. C. Lord 214,047
Hay rake, horse, D. P. Sharp (r) 8,668
Hay rake machine, M. Holder 214,139
Heat regulator, E. S. Gary 214,122
Heating buildings by compressed air, apparatus for, T. S. Brooks 214,097
Hinge, blind, B. D. Washburn 214,214
Hoisting machine, D. B. Clem 214,102
Hoisting rope, C. W. Hunt 214,148
Hook for suspending meat, S. Mason 214,162
Ice machines, apparatus for preparing water for, F. Littmann 214,161
Ink well lid, J. M. Mott 214,175
Jack or dresser spool, B. Hawkins 214,037
Ladles, stopper rod sleeve for, A. J. Haws (r) 8,662
Lamp, Z. B. Adams 214,016
Lamp, J. M. Kelly 214,044
Lamp burner, B. F. Adams (r) 8,661
Lamp, street, G. D. Burton 214,021
Lamp wick, G. Beck 214,085
Lamps, reservoir for student, C. F. A. Hinrichs 214,134
Lard in large quantities, transporting and delivering, Sears & Burnet 214,009
Last, G. W. Day 214,114
Latch, P. H. Baker 214,080
Lath, metallic, J. V. Hennessey 214,038
Letter box, electric, W. H. Rodgers 214,007
Liquids, apparatus for preventing the boiling over of, L. McLaws 214,168
Lock strike, A. Blackwood 213,967
Loom shuttle, J. Johnston 214,155, 214,156
Lubricator, G. H. Benton 214,087
Lubricator, Webb & Richmond 214,215
Marble, making artificial, H. G. Hosmer 214,142
Meat can filler, C. J. Bryant 214,100
Mechanical movement, T. Scholze 214,200
Metal, device for cutting and turning round bars of, W. J. Ingalls 214,149
Metal plate flanger, R. C. Nugent 214,181
Metallic can, J. H. Perkins (r) 8,659
Middlings, etc., separator, A. & A. N. Wolf 214,073
Mill pick, J. H. Cain 213,975
Millstone dresser, diamond, T. McFeely 213,996
Millstone driver, W. T. Duvall 214,118
Millstone exhaust apparatus, J. Q. Adams 213,963
Musical instrument, mechanical, M. Gally 214,121
Moustache guard, Thatcher & Decker 214,063
Muzzle for animals, H. C. Rice 214,196
Net for horses, fly, Raniville & Sikes 214,190
Oil can, G. W. Banker 214,017
Oil testing machine, C. M. Higginson 214,132
Ore washing machine, W. Hooper 214,140
Ores, extracting metals from, J. A. Robertson 214,055
Organ action, N. M. Boynton 213,968
Peg cutter, A. Whittemore 214,072
Photographs, coloring, J. C. Schuhmacher 214,008
Piano sounding board, A. H. Wood 214,226
Picture frame and packing box, L. Cole 214,105
Pin and needle case, F. M. Piper 214,003
Pipe joint and coupling, W. C. Allison 214,076
Planer, endless bed surface, H. V. Streit 214,062
Plant sprinkler, J. Suydam 214,012
Planter, corn, G. W. Brown 213,972
Planter, corn, R. J. Markoe 213,995
Planter, corn, A. & C. A. Norling 214,179
Planter, seed, Worthington & Templin 214,227
Plow, J. Seaman 214,201
Poison distributer, T. B. Taylor 214,205
Pork, curing, M. H. Smith (r) 8,660
Press for extracting oil from seed, etc., J. C. Tiffany 214,207
Printing machines, sheet delivering apparatus for, S. D. Tucker 214,066, 214,067, 214,068
Printing machine sheet reverser, S. D. Tucker 214,065
Pump, J. Close 214,103
Pump, J. Y., C. & J. R. G. Wren 214,228
Pump for feeding steam boilers, C. G. C. Simpson 214,203
Pump, ship's, J. L. De Wolfe 214,115
Punch, belt, G. R. Everson 213,984
Rafter, W. Hall 214,127
Rag clipper, Patton & Knowles 214,185
Rail Joint, C. Fisber 214,032
Rail spikes, safety plate for securing, G. P. Osborne 214,182
Railway brake, steam, Waite & Gavit 214,212
Railway cross tie, T. W. Travis 214,208
Railway platform guard, J. Simonson 214,202
Railway tie, H. Reese 214,192
Refrigerator, L. B. Woolfolk 214,225
Reverberatory furnace regenerator, S. T. Owens 214,183
Roasting and baking pan, M. E. Beasley 214,084
Roofing, composition, J. B. Bowen 214,091
Roofing plate, metallic, J. F. Currier 214,027
Rubber for packing, etc., sheet, J. Beardmore 214,083
Ruling machine, paper, E. Gouptel 214,033
Ruling machine, paper, Hickok & Cooper (r) 8,667
Saddle, harness, P. Burns 214,020
Saw sharpener, E. W. Phelps 214,002
Saws, clamper for filing, W. P. Wentworth 214,071
Scraper, road, J. Johnson 214,152
Screw wrench, G. V. Sheffield 214,057
Self-lighting burner, Z. B. Adams 213,965
Sewer gas from basin overflows, device for preventing the escape of, C. E. De Valin 213,977
Sewing machine, S. Borton 214,089
Sewing machine guide, J. W. Hollingsworth 214,136
Sewing machine presser foot attachment, H. Burk 213,973
Sharpie boats, construction of, T. Clapham 214,101
Shutter fastener, Gusman & Jones 214,126
Shuttle box mechanism, H. Riehl 214,197
Sickle grinder, T. J. Hubbell 214,145
Sifting machine, sand, J. D. Hobbs 214,040
Smoke stack blowing device, B. Converse 214,024
Spinning machine stop motion, H. C. Grayson 214,124
Stair rod holder, G. F. Kuhnle 214,157
Stairs, folding spiral, B. F. Card 214,022
Stamp, perforating, H. H. Norrington (r) 8,657
Staple fastener, G. W. McGill 214,166
Steam boiler, upright, G. Miles 214,171
Steel, manufacture of, O. Bolton 214,088
Stocking supporter attachment, S. Houghton 213,991
Syringe, J. L. Dibble 213,978
Syringe, C. B. Dickinson 213,979
Tag or ticket fastener, H. H. Groff 214,125
Tan vats, machine for raising and floating hides in, A. Whiting 214,220
Telephone, speaking, A. Eccard 214,029
Testing machine, T. Olsen 213,998
Thill lug, J. S. Folsom 214,120
Thrashing machine, J. Rumely 214,056
Time lock, J. L. Hall 214,034
Time lock, Kook & Hall 214,045
Tire setting machine, R. B. & J. R. Parks 214,000
Tires, measurer for wheel, R. B. & J. R. Parks 214,001
Tongue for trail wagons, C. Hotz 214,143
Top, spinning, L. J. Carpenter 214,023
Top, spinning, C. C. Johnson 214,154
Torpedo, oil well, H. C. Huntington 214,041
Toy, S. Seller 214,010
Trace carrier, C. H. Smith 214,204
Tramp safe guard, C. A. H. Bright 213,969
Trimming, E. Brosemann 213,970
Truck, car, W. W. Snow 214,059
Truck frame, car, W. W. Snow 214,060
Truck, hand, T. Hill 214,133
Vehicle spring, M. R. Thurber 214,064
Vehicle wheel, F. Hollick 214,135
Ventilation, A. W. Murray 214,177
Wagon, buckboard, C. D. Le Grand 214,160
Washing machine, A. C. Horton 213,989
Water heater and steam generator, R. H. Elliott. 213,982
Weather strip, Rowen & Miller 214,198
Weighing machine, automatic, J. R. Williams 214,014
Wells, increasing the productiveness of oil, O. L. Mather 214,049
Wheat heater, P. B. Hunt 214,147
Whip socket, E. E. Hawkins 214,131
Whistle for steam engines, J. A. & S. E. Pelphrey 214,186
Wind engine, N. Holmes 213,988
Windmill, I. H. Palmer 214,184

TRADE MARKS.

Bellows or blowers for distributing insect powders, Young & Stern 7,165
Bleaching compound, Holbrook Mfg. Co. 7,168
Champagne wine, J. Bollinger 7,160
Chemical preparations intended for bread making and other analogous uses, Rumford Chemical Works 7,159
Chiccory, G. Bartelo 7,166
Dental plates, Q. A. Scott 7,177
Gin, I. H. Smith's Sons 7,175
Medicinal preparation, C. S. Hardy 7,156
Medicated pads, American Absorptive Pad Co. 7,169
Men's, young men's, boys', and children's clothing, B. W. Currier 7,174
Mineral waters, J. L. Lockwood 7,163
Musical instruments, P. Goumas & Co. 7,162
Oatmeal, Quaker Mill Company 7,178
Perfumery, creams, dentifrice, and analogous articles of toilet preparations, A. Raynaud 7,164
Plug chewing tobacco, Wilson & McCallay 7,179
Refined petroleum for illuminating purposes, Empire Refining Company 7,170, 7,171, 7,172
Silk and silk cotton velvets, Schaub & Heckmann 7,158
Soap, J. H. Wilson 7,176
Table cutlery, Rogers & Son 7,157
Teas, E. Guittard 7,173
Thread, Lidgerwood Mfg. Co. 7,167
Toilet preparations, Cottan et Cie 7,161

DESIGNS.

Boot and shoe heels, B. F. Jones 11,152
Carpet, T. J. Stearns 11,147
Carpet, A. L. Halliday 11,142, 11,143
Carpet, J. L. Folsom 11,140
Child's carriage body, W. B. Whitney 11,148
Curtain bands, M. Siedentop 11,146
Dust pans, L. G. Dalby 11,139
Envelopes, H. C. Bainbridge 11,138
Frame for clock movements, L. L. Culver 11,151
Fret work for furniture, F. Vogel 11,150
Perfumery bottles, M. B. Hood 11,149
Toy scales, J. Gerard 11,141
Umbrella handle, F. J. Kaldenberg 11,144, 11,145

English Patents Issued to Americans.

From April 11 to April 15, inclusive.

Book covers, W. H. Douty *et al.*, Shamokin, Pa.
Crayon holders, J. Reckenderfer, New York city.
Electric machines, N. S. Keith, New York city.
Extinguishing fires, C. L. Gorfield, New York city.
Eyeleting machine, G. Draper, Milford, Mass.
Fluid, regulating the flow of, G. W. Harvey, Washington, D. C.
Gas purifier, O. Lugo, Flushing, N. Y.
Governor for steam engines, E. Side, Brooklyn, N. Y.
Sewing machine attachment, J. C. Herr, Phila., Pa.
Sounding board for pianofortes, A. H. Wood, N. Y. city.
Steel casting, W. A. Sweet, Syracuse, N. Y.
Watch cases, E. C. Fitch, New York city.
Wheel for vehicles, F. Hollick, New York city.

© 1879 SCIENTIFIC AMERICAN, INC.