NOVEMBER 25. 1882.]

Scientific American.

Distance register, electric, E. R. E. Cowell	967 069	I
Doll's head, C. C. Johnson		l
Door securer, adjustable, J. Streeter	. 267,035	
Draught equalizer, M. W. Tucker	. 267,040	l
Drawer pull, C. A. Bailey Drawer pull, C. A. Cook	267,302	ł
Dress waist protector, S. E. Hervey	. 267,202	l
Drill. See Portable drill. Rock drill.		
Drying klin, O. Moore	. 267,099	l
Dust pan, A. M. H. Moss Edging machine, A. Williams		
Egg carrier. C. D. Lewis	. 267,233	
Electric machine, dynamo, V. W. Blanchard	. 263,136	ŀ
Electric machine, dynamo, Harling & Hartmann	, 267,196	
Electric machine, dynamo, P. Jablochkoff		l
Electric machine, dynamo. G. A. Scheeffer Electrical currents, metallic circuit for, S. D		
Strobm		ŀ
Electropneumatic gate and signal operating ap-	-	l
paratus, W. Robinson		l
Electro therapeutic apparatus, J. W. See Elevator. See Hod elevator.	. 267,025	ŀ
Elevator, P. Hinkle	267.204	l
Engine. See Rotary engine. Rotarysteam en-		l
gine.		l
Envelope letter sheet, A. C. Fletcher Excelsior machine, H. R. Mathias	267.305	l
Faucet, E. F. Pierce		
Feeder, beiler, G. II. Whitman		
Fence, W. Gleason	266,988	
Fence wire, barbed, L. E. Evans		
Fence wire, barbed, C. D. Randel File, paper, H. H. Blake		
Filtering and extracting machine, J. W. See	267.024	
Filtering funnel, H. Bell		
Firearm, magazine, J. Schulhof		
Fire escape, K. Freeman		
Fire escape, J. R. Juid Fire escape, Roberts & Palmer		j
Fire escape, A. Van Wagner.		1
Fire escape ladder, P. H. Spelman		
Fire extinguisher, automatic, F. Grinnell	266,989	
Flour manufacture of, F. Prinz Flour mills, etc., dust collector for, W. H. Fruen,	267,016	
Flour mills, etc., dust collector for, W. H. Fruen,	201,102	
et al	267,061	
Flower pot or vase, self-irrigating, E. Wilder		1
Fruit basket, E. W. Humphreys		
Fruit drier. A. W. Walker Fuel, artificial, C. H. Coggeshall		ľ
Funnel trap for sinks, J. G. Schill		1
Furnace, G. B. Field	267,068	
Furnace for melting glass, etc., M. V. Smitb	267,116	1
Furnaces, apparatus for feeding shavings to steam boiler and other, L. P. Conklin		•
Gauge. See Saw table gauge.	400,910	
Gate. See Electro pneumatic gate. Water wheel		4
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gate.		
Gate and railing, S. R. Evans	267,170	1
Gate and railing, S. R. Evans	267,170	1
Gate and railing, S. R. Evans	267,170	1
Gate and railing, S. R. Evans Gold and silver ores, apparatus for desulphuriz- ing, W. E. Harris. Gong, street car, C. T. Brown. Grain binder, Steward & Dixon	267,170 267,198 266,964 267,119	
Gate and railing, S. R. Evans	267,170 267,198 266,964 267,119 266,996]
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon Grain binder knot-tying device, N. Jewett Gruin cleaner, L. Gathmann	267,170 267,198 266,964 267,119 266,996 267,072	
Gate and railing, S. R. Evans Gold and silver ores, apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann Grain cleaning and separating machine, W. Sperry	267,170 266,198 266,964 267,119 266,996 267,072 267,032]
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown. Grain binder, Steward & Dixon. Grain binder knot-tying derice, N. Jewett Grain cleaner, L. Gathmann. Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A.	267,170 267,198 266,964 267,119 266,996 267,072 267,032	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann Grain cleaner, L. Gathmann Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,219]
Gate and railing, S. R. Evans Gold and silver ores, apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon Grain binder knot-tying device, N. Jewett Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi Grain separator, W. U. Richmond	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,032 267,219 267,254	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann Grain cleaner, L. Gathmann Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,032 267,219 267,254 267,270	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,219 267,254 267,270 267,270 267,125	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,254 267,254 267,129 267,125 267,125 267,027	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain different sizes, machine for mixing, J. A. W. Justi Grain separator, W. U. Richmond Grain separator, W. N. Smith Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw	267,170 267,198 266,964 267,119 266,996 267,072 267,072 267,072 267,259 267,264 267,262 267,262	1 1 1 1 1 1 1 1
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris	267,170 267,198 266,964 267,119 266,996 267,072 267,072 267,072 267,259 267,264 267,262 267,262	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain olinder knot-tying device, N. Jewett Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi. Grain separator, W. U. Richmond Grain separator, W. N. Smith Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw Hame strap loop, C. H. Allen Handle. See Tool handle. Hanger. See Shafting hanger.	267,170 267,198 266,964 266,996 267,072 267,072 267,072 267,254 267,254 267,254 267,270 267,129 267,125 267,266 267,266 267,266	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain separator, W. U. Richmond Grain separator, W. U. Richmond Grate bar, H. Adams Gun, air, L. D. Shaw. Hame, See Tool handle. Hanger. See Shafting hanger. Harness pad, E. P. Waters	267,170 267,198 266,964 267,019 266,966 267,072 267,072 267,072 267,254 267,270 267,254 267,270 267,125 267,262 267,262 267,262 267,263	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris	267,170 267,198 266,964 267,119 266,996 267,072 267,072 267,219 267,254 267,270 267,272 267,266 267,129 267,266 267,291 267,291 267,294	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Gong, street car, C. T. Brown Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain separator, W. U. Richmond Grain separator, W. U. Richmond Grate bar, H. Adams Gun, air, L. D. Shaw. Hame, See Tool handle. Hanger. See Shafting hanger. Harness pad, E. P. Waters	267,170 267,198 266,964 267,119 266,969 267,072 267,032 267,254 267,254 267,254 267,266 267,266 267,266 267,291 267,291 267,291 267,291 267,291	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris	267,170 267,198 266,964 267,072 266,996 267,072 267,219 267,219 267,219 267,219 267,224 267,270 267,129 267,129 267,291 267,291 267,291 267,291 267,291 267,291 267,291 267,291 267,291 267,291 267,291	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi Grain separator, W. U. Richmond Grain separator, W. N. Smith Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw Hame strap loop, C. H. Allen Handle. See Tool handle. Hanger. See Shafting hanger. Harrow tooth, A. M. Forrester. Hay carriers, adjustable stop block for, J. H. Pratt.	267,170 267,198 266,964 267,119 266,996 267,072 267,032 267,254 267,254 267,254 267,254 267,254 267,256 267,126 267,126 267,291 267,291 267,291 267,291 267,291 267,291 267,291 267,015 267,015	
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Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain oleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain different sizes, machine for mixing, J. A. W. Justi. Grain separator, W. U. Richmond. Grain separator, W. U. Richmond. Grain separator, W. N. Smith. Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw. Hame strap loop, C. H. Allen Handle. See Tool handle. Hanger. See Shafting hanger. Harrow, L. S. Wheeler. Harrow tooth, A. M. Forrester. Hay carriers, adjustable stop block for, J. H. Pratt. Hay rake, revolving, R. W. Ray. Hay rake, sulky, W. P. Prall. Headeler. See Bell holder. Candle holder. Cigar	267,170 267,198 266,964 266,964 267,072 267,032 267,032 267,274 267,274 267,274 267,274 267,266 267,125 267,266 267,126 267,291 267,291 267,291 267,015 267,015 267,015 267,250	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain cleaner, L. Gathmann. Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi Grain separator, W. U. Richmond Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw. Hame, C. Seibert Hame strap loop, C. H. Allen Handle. See Tool handle. Hanger. See Shafting hanger. Harrow, L. S. Wheeler Harrow tooth, A. M. Forrester. Har carriers, adjustable stop block for, J. H. Pratt. Hay rake, revolving, R. W. Ray Hay rake, sulky, W. P. Prall. Heater. See Water heater. Hodeler. Xea Holder. Candle holder. Cigar holder. Label holder. Lead and crayon	267,170 267,198 266,964 267,072 267,072 267,072 267,072 267,254 267,254 267,254 267,125 267,254 267,125 267,027 267,125 267,029 267,125 267,291 267,294 267,294 267,015 267,210 267,250 267,215 267,250 267,214	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain oleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain cleaner, L. Gathmann. Grain different sizes, machine for mixing, J. A. W. Justi. Grain separator, W. U. Richmond. Grain separator, W. U. Richmond. Grain separator, W. N. Smith. Grate J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw. Hame strap loop, C. H. Allen Handle. See Tool handle. Hanger. See Shafting hanger. Harrow, L. S. Wheeler. Harrow tooth, A. M. Forrester. Hay carriers, adjustable stop block for, J. H. Pratt. Hay rake, revolving, R. W. Ray. Hay rake, sulky, W. P. Prall. Headeler. See Bell holder. Candle holder. Cigar	267,170 267,198 266,964 267,119 266,996 267,072 267,219 267,224 267,224 267,270 267,224 267,272 267,266 267,126 267,129 267,291 267,29	
Gate and railing, S. R. Evans Gold and silver ores. apparatus for desulphuriz- ing, W. E. Harris Grain binder, Steward & Dixon. Grain binder knot-tying device, N. Jewett Grain oliader knot-tying device, N. Jewett Grain cleaning and separating machine, W. Sperry Grain of different sizes, machine for mixing, J. A. W. Justi. Grain separator, W. U. Richmond Grain separator, W. N. Smith Grate. J. C. Bard Grate bar, H. Adams Gun, air, L. D. Shaw Hame, C. Seibert Handle. See Tool handle. Handle. See Tool handle. Harness pad; E. P. Waters Harrow, L. S. Wheeler Harrow, L. S. Wheeler Hay carriers, adjustable stop block for, J. H. Pratt Hay rake, revolving, R. W. Ray Hay rake, sulky, W. P. Prall Header. See Bell holder. Candle holder. Cigar holder. Fackage holder. Kein holder. Hook. See Swirel hook.	267,170 267,198 266,964 267,072 266,996 267,072 267,254 267,254 267,254 267,254 267,254 267,256 267,125 267,256 267,256 267,291 267,291 267,291 267,291 267,291 267,291 267,250 267,250	
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Pen, fountain, J. Friedmann	Truck for the bridge of a traveling crane, T. W.	1
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off, L. W. Stockwell 267,276	Wagon skein, G. W. Smith 267,268	l
Piston, M. L. Snyder et al 267,030	Washing machine, J. G. Crawford	í
Pitcher, G. Gough	Watch key, Bourgeois & Jacky 267,057	l
Planing machines, tool holder for metal, P. J.	Watch. stem-winding musical, L. Piguet 267,104	l
Byrne	Water carrier, E. R. Killingsworth 267,086	ł
Planter check row attachment, corn, L. D.	Water closet. S. Goldner 267.190	I
Benner 267,054	Water heater, automatic, J. Hawley 267,200	ł
Planter, corn, A. B. Clark 267.151	Water meter, rotary, Fitts & Wilson 267,174	I
Plow beam, W. C. Chamberlain 267,061	Water trap clearer, J. S. Gall 267.306	Į.
Plow beams to handles, device for attaching, II.	Water wheel gate and nozzle, S. N. Knight 267,087	I
O. Kerns 267,311	Water wheel, turbine, I. F. Davis	l
Polishing and grinding wheel, T. C. Belding 267,132	Welding pipe, etc., machine for, A. A. Smyth, Sr., 267,029	l
Portable drill and forge rest, J. Hathaway 266,991	Wheel. See Polishing and grinding wheel, Water	I
Portable house, J. Reilly	wheel.	
Pot. See Flower pot.	Windmill, W. C. Jacob 267,209	l
Potato peeler, F. Schulte	Wrench. See Carriage wrench.	I.

Wrench. See Carriage wrench.

DESIGNS.

Carpet, H. Hunt	
Charm, S. L. Lederer Cigarette paper holder, J. L. Haas	13,399
Cigarette paper holder, J. L. Haas	13,395
Embroidery, H. Bosshardt	
Fringe, ball, G. S. Hensel	13.396
Jewelry. E. Thoma	13.402
Lamp, oil burning, W. L. Ewing	13,394
Toy bank, C. F. Ritchel	13,401

TRADE MARKS.

9.788

Beer, lager, Eble & Herter 9,791
Bitters. H. Toser Company 9,792
Blacking and leather dressing, E. H. Fennessy
9,774 to 9,776
Boots and shoes, certain preparation for dressing
and polishing leather. Lustro Company 9.778
Calf skins, A. B. Martin & Co 9.779
Cigars, E. H. Gato 9,777
Cigars, cigarettes, and smoking and chewing to-
bacco, Esberg, Bachman & Co 9,773
Edge tools, certain, Collins Company 9,789
Moss and fiber, mixture of, J. Domergue & Co 9,790
Remedy and cure for corns, bunions, and other
similar diseases, W. B. Moore 9,793
Soap, Schultz & Co 9.795
Soap, Senderhauf & Schultz 9.796
Tanning compound, R. A. Wirbel & Co9,786, 9,787
Tobaco, cigars, and cigarettes, smoking and chew-
ing, J. B. Pace Tobacco Company
Tobacco, plug or chewing, S. W. Venable & Co
9.784. 9.785
Washing compound, C. O. Strutz
Watch cases and movements, Vacheron & Con-
stantin 9,783
Wine, champagne, G. H. Mumm & Co 9,780
Wige, champagne, Veuve Pommery & Fils 9,797, 9,798
the second se



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be

Locomotive rail sweeping device, J. T. McCoy.... 267,238 Suspenders, M. B. Stafford...... 267,038 cells of Law battery will I require ? A. The annexed engraving shows the arrangement of bell battery and 89 key at one end of the line. Both ends are arranged in the same way. The fixed end of the key is connected

with the line, and the back of the key rests normally against the top contact, a, which communicates with the ground through the bell magnet. The bottom contact, d, of the key is connected with one pole of a two cell battery, c, the other pole of the battery being grounded. When an electrical impulse

is sent from the distant station, it passes through the key, the top contact, a, and the bell magnet to the ground. When it is desired to call the distant station, the key is "ressed down and the current passes from the battery, c, through the contact, d, and key to the hne, ringing the bell at the distant station.

(2) A. P. asks: How can I bore a quarter inch hole in the top of a glass globe most easily, with least danger of cracking? The globe is one such as is used to cover statuary, etc. A. To drill a quarter inch

hole in your glass shade make a hole in a piece of wood or metal of the size that you desire to drill in the glass. Fasten it with beeswax upon the glass for a guide. A piece of brassor copper tubing, quite thin, is supplied with emery (No. 100) and water, and twirled between fingers, or with a bow string, this will cut a hole in a few minutes. You can feed the emery and water a little at a time through the tube. The

GROUND



sketch will give you an idea as to the principle.

(3) J. B. V. writes: You will grant a favor to a reader of your valuable paper by telling me how to polish a mosaic (Florentine, table which is a little discolored by dampness and effects of handling. The stone is black slate, with flowers, etc. A. Use oxide of tin or putty powder wet with water, enough to make it a thin paste. Rub the table with a cloth cushion with considerable pressure, using the patty paste rather freely; add a little water to keep the surface wet. When the desired polish is obtained, which you will see by wiping clean in spots, wash the table with clean water, and wipe with a soft linen cloth.

(4) D. H. L. inquires as to the process of painting on glass, in imitation of gold and silver leaf, the same as is used on druggists' and business signs? A. Yellow other mixed in oil is sometimes used, but gold leaf or paint is much superior. Gold or silver leaf is applied to a very thin solution of gelatine brushed over the glass. The portion of leaf forming the letter is backed up with paint. The surplus leaf is washed off when this paint is dry.

(5) S. B. asks: What is the best cement for mending broken minerals, fossils, pottery, arrowbeads, etc.? A. Starch, one quarter ounce; white sugar, one ounce; gum arabic, one-quarter ounce. Dissolve the gum in a little bot water, add the sugar and starch, and boil until the starch is cooked.

(6) J. M. G. writes: If a vessel is filled with saturated steam and closed tight, and a fire put under, will the superbeating increase the pressure per square inch? A. Yes; about one-four-hundred-and eightieth part for each degree the temperature is increased

(7) W. W. writes: 1. I have made me a rocking valve engine, single-acting, of 3 inch bore and 8 inch stroke, with a balance wheel weighing 10 pounds, being 10 incbes in diameter; but I think that is too small a balance wheel. A. Your fig wheel should be three times as large as it is. 2. I would like to know what herse power I can obtain from it at about thirty-five pounds of steam as it is, and with a proper balance wheel, of which I would like to have you give me the dimensions and weight. Please give me the rule to find the borse power of single-acting engines? A. Calculate the power of your engine as an ordinary double acting engine by the rule in SUPPLEMENT, 253, and take one-balf the result for a single acting engine. 3. How many square feet of heating surface would it require for a tubular boiler to run such a steam engine as I have described? A. The quantity of beating surface will depend upon the velocity of your engine. 4. My engine has but one cylinder: would it be strong enough to run the dynamo electric machine described in SUPPLEMENT, 161? A. With sufficient steam snpply, yes. 5. Does such an electric machine give electricity of intensity or quantity? A. It depends on the winding of the armature. Coarse wire gives quantity, and fine wire intensity. 6. How much is a volt in electricity? A. A volt is substantially equivalent to one cell of Daniell battery. 7. Would putting a little oil on the rubbing surfaces of the springs of an electric engine do any hurt? A. Yes. Oil is an insu-lator and would have to be pressed from beneath the springs to get the current through.

Knitting machine, J. K. Crawford 267,063	Sewing machine tuck folder, C. M. Dexter 267,163	gi
Knitting machines, mechanism for operating the	Shafting hanger, Pryibil & Macintosh 267,251	gı
yarp guides of circular, McDonnell & Sher-	Sheet metal can, E. Norton 267.013	
wood	Shoe fastener, J. L. Joyce	to
Knob roses, clamp for adjusting door, G. V. Black-	Shoe born and buttoner, J. S. Bulkeley 267,145	na
man	Shutter fastener, R. G. Dudley 267,168	of
Knobs, manufacture of metallic door, C. Pudde-	Sifter for sand, self-shaking, E. A. Wilson 267,049	
foot	Signal. See Railway signal. Time ball signal.	a
Knuckle joint press, O. P. Bushnell 266,967	Skate, E. Riebling	lis
Label holder, box, H. H. Snow 267,271	Choto - hard Mr. IN. Demos	Ed
Label holder. car, T. J. Parkinson 267,246	Slaughtering establishments, switch rail for, R.	E.C
Ladder, step, H. P. Spencer 267.118	Neill	
Lamp burner, C. Gordon 267,075	Snatch block, E. J. F. Coleman	of
Lamp, electric arc, C. A. Cooley	Sparkarrester and conductor. J. A. Cotter 267,158	eh
Lamp fount, Bradley & Patitz 267,141	Spark arrester and draught producer for locomo-	as
Lamp, gas, C. W. Siemens 267,113		ob
Lasting jack, I. Hall	Spindles, variable friction gear for, G. Bancroft 267,053	
Lathe, screw cutting, J. W. See	Spring ring, L. H. Sanderson	MI
Lead and crayon holder, J. S. Birch 267.134	C	of
Lead or crayon holder, J. Hoffman 267,309	Stamp canceling and registering machine, Wood-	01
Lifting jack, J L. Ellis	row & Henderson 267,301	fo
Lifting jack, Hoag & Hervey 267,081	Steam holler E. I. Moore 967 241	
Lime, composition for treating sulphates of, R.	Stone, manufacture of artificial, H. B. McIntyre., 267,239	lal
Josia	Stone. marble, etc., artificial, R. Josia 267,217	fic
Liquors. apparatus for refining, purifying, and	Stopper. See Bottle stopper.	-
aging alcoholic, L. A. De Lime 267,065	Stove D Brix 267143	
Lock. See Nut Lock. Seal lock.	Sulky, W. M. Boyd	tri
Lock and latch, combined, E. Bourquin 267,139	Surveying instrument, K. Freeman 267,178	cir

We renew our request that correspondents, in referring o former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after reasonable time should repeat them. If not then pubished, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, we cannot be expected to spend time and labor to btain such information without remuneration. Any numbers of the SCIENTIFIC AMERICAN SUPPLE. ENT referred to in these columns may be had at this flice. Price 10 cents each.

Correspondents sending samples of minerals, etc., or examination. should be careful to distinctly mark or abel their specimens so as to avoid error in their identi-

(1) W. P. S. asks how to arrange two elecric call bells on one wire, half mile apart, with open vessel was it made? A. Steamer Alaska-6 days 22 ircuit batteries, so that they will work. How many hours.

(8) A. E. 19 inquires: Will you inform me what is used by the American ladies to bleach a brown hair to a light golden color? A. Peroxide of hydrogen as recommended in SUPPLEMENT, No. 349, is now used with success.

(9) K. E. H. asks: What is the most rapid vay of making a barrel of sirup of wild cherry without heat? A. Take five troy ounces of the bark in coarse powder and thoroughly moisten it with water; allow it thus to stand for twenty-four hours, and then pack it tightly in a percolator and add more water until a quart bas passed; to this and twenty-eight ounces of sugar, and dissolve it by agitation. This process affords a fine sirup with all the virtues of the bark unimpaired by the injurious action of heat.

(10) J. H. asks: What is the fastest time on record from New York to Queenstown, and by what

(11) J. F. S. writes: Please give me a good in separate chapters. The use of electricity for lightreceipt for preventing the hair of the head from falling out? Try the following, which has been successfully used: Aromatic spirits of ammonia, two ounces; gly. | the construction of electro-magnets and instruments for cerine and rose water each, two onnces; tincture of can- measuring electrical currents. The workis handsomely thanides, one-half ounce; alcohol, sufficient to clarify printed and is well illustrated. the mixture

(12) T. N. writes: A friend has a common flat boat, 16 feet wide, 75 feet long. He wants to run it by steam, with side wheels. Will two common slide valve engine, 71/2 inch bore by 3 feet stroke direct to shaft, turn wheels 12 feet in diameter, 9 inch x 3½ feet bucket, and run the boat 7 miles an hour? A. Yes; but we think your wheel should not be over 101% or 11 feet diameter.

(13) W. D. K. writes : I have a cistern which does not hold water. Upon letting it get dry it is evident that the leak is not in any one place, but is general by percolation throughout the walls and sides. Will cement remedy this, and if so, which kind is best, and in what proportions of materials? If not by cement how can the trouble be remedied? A. We would advise cementing it over with a cement made by mixing silicate of soda solution to a paste with quicklime.

(14) D. G. P. asks what is the best form of condenser for a steam launch, 30 feet long? What should it be made of-copper or brass? A. The cheapest and lightest form is a keel condenser, that is, a copper pipe outside the boat, fitted alongside of the keel, and running aft from the engine to the stern post, and then returned on the opposite side and the end connected to the air pump

(15) R. asks: Which will be most economical of fuel in driving a 20 ft. catamaran-a screw or paddle wheel; in either case to be placed between the boat, and of course free from dead water? Have plenty of depth of water for screw. A. We are of the opinion that a screw will give the best results, as the weight of the machinery will be less, consequently the boat draws less water than with paddle wheel. 2. What is the best method of feeding a small boiler, i.e. what will be the surest and require least attention? A. There is no mode of feeding that is reliable without attention. It is usual to have two independent means, say a feed pump and an injector.

(16) L. F. writes: In your issue of May 27, 1882, p. 332, the Massachusetts Railroad Commissioners recommend the drilling of the stay-bolts in locomotive boilers, $\frac{3}{4}$ in deep, $\frac{5}{16}$ in diameter. Please inform me what is the return or benefit. A. These braces almost invariably break or crack at the edge of the plate, and by so drilling the braces a break is discovered at once by the leak through the hole drilled in the brace. 2. Why is it in making silver solder we use or combine the two metals, silver and brass, in certain proportions, so the solder will melt at a lower temperature than the article we are soldering? How does the combining the two metals lower the melting point of the composition? A. It has never been satisfactorily explained.

(17) D. & H. S. write: We are using a large quantity of borax for welding cast steel to iron, and we believe that you can tell us the best way to prepare it for application. We now pulverize it by attrition. or second relates to making moulds and castings, also the perhaps you may say by grinding, and then apply it to galvano-plastic art; the third treats of working metals, the heated metal with a small ladle or spoon, and by such as rolling, drawing, spinning, bending, cutting, this method much of it flows off into the fire, and, as we think, is a waste. Can you tell us of any better method? the decoration of metals, etching, polishing, enameling, If you can so tell ns, we shall be glad to pay you for it. A. Powder your borax in the manner you describe, and of the motors, including the steam engine, hot air, gas, heat it is an iron pot gently until it ceases to boil, and and water motors, while the final chapter will treat of then to fusion. Pour it out on a flag stone, and when cool break into pieces and use. In this manner less HAND BOOK OF TENNESSEE. Prepared by need be used. It will not boil upon the metal, and consequently less loss will be incurred.

(18) W. R. asks what makes the rumbling noise in what they call the whistling buoy at Sandy Hook. A. The "whistling buoy," off Sandy Hook, is a heavy shell of iron which takes in air when it is raised by the waves, and when it falls forces the air through a pipe ending with a whistle like a steam whistle. The note of the whistle is very "low.

(19) D. F. writes: I would like to have you decide a point in dispute. I have a tubular boiler which I use for thrasbing from June to October, after which it is laid up. I used to clean it out well, and fill up with clean water, and let it stand so when not in usc. Last winter a boiler maker told me to fill the boiler to the dome with water, then put in 5 gallons of black oil, fire up until I had 20 pounds steam, then blow off slowly. This, he said, left the oil covering the inside of boiler and all the flues. prevented rusting, and took off any scale remaining in boiler. Which is the best plan to adopt? A. Cleaning out and refilling your hoiler was proper as far as it went, but if you did not boil the water it still contained air, which is a source of trouble. If you get up steam with the boiler full and blow a little steam from the safety valve, all the air will blow out, then and low barometer and other meteorological pheshut every outlet tight. You will find your boiler in the nomena upon the interpretation of which our Signal best condition for work at the beginning of the season, Service weather indications are founded; and shows and free from rust inside. This is the universal practice how by a proper study of the weather maps everybody with boilers used for house heating in this climate, where may become usefully weatherwise. there are thousands in use that are steamed only about How To KEEP A STORE. By Samuel H. there is any scale-removing virtue in the oil. Tannic acid or a weak decoction of oak or hemlock bark is much used for removing scale where hard water is used.

ing and other purposes also receives proper attention. In an appendix the author gives various formulæ for

KATE SANBORN'S SUNSHINE CALENDAR FOR Consists of a pictorial card on 1853. Consists of a pictorial card of the year is Lettering for Draughtsmen.—1 sheet, 25 cts.; 5 for \$1; mounted. Appropriate poesy for each 50 for \$8.50. One-third discount to trade. W. A. Lorenz, day. James R. Osgood & Co., publishers, Boston. C. T. Dillugham, agent, 678 Broadway, New York. Wated —Four miles second-hand T-rail for framway. Weight about 30 pounds to yard. G. Gunby Jordan, Columbus, Ga.

NAUTISCH-TECHNISCHES WOERTERBUCH DER MARINE Bearbeiter von P. E. Dabovich. Pola, 1882.

The peculiarity of this new technical dictionary consists in its polyglot character, four languages being represented, viz, German, Italian, French, and English It appears in parts of eighty pages each. The twelfth part brings it to SCH of the first volume, in which German and Italian terms (mixed) lead, while the German words are followed by Italian ones, or Italian by German and both of these by French, and that by English. The different languages are distinguished by the type, Italian and English being in *italics* of different fonts, French in spaced Roman letters, and the German in plain Roman.

GIORNALE DI ARLIGLIERIA E GENIO. Roma 1882.

We have received part second for May, 1882, of this handsomely illustrated journal. A considerable portion of the plates as well as the letter press is devoted to the application of the electric light to military purposes. This is followed by an illustrated article on the effects of dynamite, and other matters of interest to military men

JOURNAL D'HYGIENE is a weekly paper published by Dr. Prosper de Pietra Stanta, at 54 Ave. de Wagram, Paris, at 20 francs, foreign 22 francs. Each number contains 16 pages about half the size of these, filled with interesting and useful reading connected with this important subject.

ILLUSTRIRTES HAND UND HULFSBUCH FUER DEN PRAKTISCHEN METALLARBEITER. Von H. Schuberth. Hartleben, Vienna, Pest, Leipzig: 1882. Illustrated Handbook and Practical Metal Workers' Assistant.

This practical and exhaustive work is intended to cover the entire domain of technical metal working, while the sciences that bear upon the subject are also briefly explained so far as they interest the artisan. The work is issued in parts of forty-eight pages each, ten of which have already been received, and five more are to follow, so that the complete work will consist of seven hundred and twenty pages, illustrated with three hundred wood cuts and fifteen colored plates. Price in Germany, 15 cents per part; \$2.25 for the entire work. The book is divided into six sections, the first being devoted to the metals, their occurrence and preparation, their chemical properties and qualitative tests. The welding, soldering, riveting, etc. The fourth describes varnishing, etc. , in the fifth we are to have a description geometry, mechanics, and drawing.

A. W. Hawkins, State Commissioner of Agriculture, Statistics, Mines, and Im-migrations; assisted by Henry E. Colton, Geologist and Mining Engineer. Nashville, Tenn. 1882.

Describes briefly the geography, topography, and geology of Tennessee, its useful minerals and their outcroppings; its timber, agricultural products and capabilities; railways, educational, social, and political institutions; the natural and civil divisions of the State and their several characteristics; and gives much other information of interest to intending settlers and investors in mines and other properties within the State,

POINT LACE AND DIAMONDS. By George A. Baker, Jr. New York: R. Worthington.

A new edition of Mr. Baker's pretty little book of society verses, with some additions. Mr. Baker is clever at verse making-so clever that it seems a pity that he should spend his time over such triffes

How to BE WEATHERWISE. A New View of our Weather System. By Isaac P. Noyes. New York: Fowler & Wells, 25 cents.

Explains briefly the conditions and effects of high

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication offic asearly as Thursday morning to appear in next issue.

dan, Columbus, Ga.

Foot Lathes. W. E. Lewis, Cleveland, O.

Want nice model, in proportion, of 8 wheel car, with metal wheels, axles, etc. G. B. Thompson, Pittson, Pa. Emery Grinding Machinery of all kinds. Latest style and designs at reduced prices. Send for descriptive catalogue and price list of the celebrated Lehigh Emery Wheels. Lehigh Valley Emery Wheel Co., Lehighton

Blake's Belt Studs. The strongest and best fastening for leather and rubber belts. Greene, Tweed & Co., N. Y

In stock, ready for immediate delivery, all new, 24 in. Rotary bed Single Surfacer; No. 3 Wardwell's patent Saw Bench; 20 in. Upright Drill Press, hand feed, quick return ; Cady Engine Lathe, 13 in. by 4 ft. Send for list of 2,000 new and second-band machines. Rollstone Mchn. Co., 95 Liberty St., New York.

To make Violins, write James Roblee, Syracuse, N. Y Water parified for all purposes, from household supplies to those of largest cities, by the improved filters manufactured by the Newark Filtering Co., 177 Commerce St. Newark, N. J.

American Fruit Drier, Free Pamphlet, See ad., p. 334 Am. Twist Drill Co., Meredith, N. H., make Pat. Chuck Jaws, Emery Wheels, Grinders, automatic Knife Grinders. Fire Brick. Tile, and Clay Retorts, all shapes. Bornerg

& O'Brien, M'f'rs, 23d St., above Race, Phila.. Pa. Peck's Patent Drop Press. See adv., page 334

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y. Drop Forgings. Billings & Spencer Co. See adv., p. 333.

Brass & Copper in sheets, wire & blanks. See ad. p. 332. The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 5.000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free,

The Improved Hydraulic Jacks. Punches, and Tube Expanders. R. Dudgeon. 24 Columbia St., New York. Diamond Saws. J. Dickinson, 64 Nassau St., N. Y. Eagle Anvils, 10 cents per pound. Fully warranted

Tightand Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus, adv. p. 332.

Garmore's Artificial Ear Drums for relief of partial or entire deafness. Invented by one who has been deaf thirty years. Simple and scientific in construction; not observable in use. Send for circular. John Garmore, S. W. cor. 5th and Race Sts., Cincinnati, O.

Pure Turkey Emery, Glue Composition, Rouge, and Pumice for polishers. Greene, Tweed Co., New York.

Heliographic or Blue Process Paper to take copies of Drawings, at Keuffel & Esser, 127 Fulton St., New York. Pays well on small investment.-Stereopticons. Magic

Lanterns, and Views illustrating every subject for public exhibitions. Lanterns for colleges, Sunday-schools, and home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y.

Cutters for Teeth of Gear Wheels formed entirely by machinery, The Pratt & Whitney Co. Hartford, Conn. Catechism of the Locomotive. 625 pages, 250 engravings. Most accurate, complete, and easily understood book on the Locomotive, Price \$2.50, Send for catalogue

of railroad books. The Railroad Gazette, 73 B'way, N.Y. Trevor's Patent Key Seat Cutter. Trevor & Co., Lock port, N. Y. See page 332.

Assays and Analyses of ores and all commercial pro ducts. Advice given and investigations made in all branches of chemical industry. Send or circular. N. Y. Assay Laboratory, 40 Broadway, New York.

Wanted.-A second-hand centrifugal machine for liquids Address, with description and price, P. O. Box 3396, Boston, Mass.

Small patented articles, or light machinery, made and introduced. Gaynor & Fitzgerald, New Haven.Conn. Lubricator, See advt., Detroit Lubricator Co., p 318, Bostwick's Giant Riding Saw Machine, adv., page 313. See New American File Co.'s Advertisement, p. 318. Steam Pumps. See adv. Smith, Vaile & Co., p. 316. Common Sense Dry Kiln. Adapted to drying of all material where kiln, etc., drying houses are used. See p.318. The Sweetland Chuck. See illus. adv., p. 318. Knives for Woodworking Machinery Bookbinders, and Paper Mills. Taylor, Stiles & Co., Riegelsville, N. J.

Red Jacket Adjustable Force Pump. See adv., p. 302. Woodwork'g Mach'y, Rollstone Mach. Co. Adv., p. 302. Cope & Maxwell M'f'g Co.'s Pump adv., page 285.

Steel Stamps and Pattern Letters. The best made. J. F.W.Dorman, 21 German St., Baltimore, Catalogue free, For Power & Economy, Alcott's Turbine, Mt.Holly, N. J. Presses, Dies, Tools for working Sheet Metals, etc. Fruitand other Can Tools, E. W. Bliss, Brooklyn, N. Y. Presses & Dies (fruit cans) Ayar Mach, Wks., Salem, N.J. Split Polleys at low prices, and of same strength and ppearance as Whole Pulleys. Yocom & Son's Shafting Works. Drinker St., Philadelphia. Pa.

For Mill Mach'y & Mill Furnishing, see illus, adv. p.300, Supplement Catalogue .- Persons in pursuit of information on any special engineering mechanical, or scientific subject, can have catalogue of contents of the Sci-ENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLIMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York, Machinery for Light. Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y. Presses & Dies. Ferracute Mach, Co., Bridgeton. N. J.

Adrectiszments.

Inside Page, each insertion - - - 75 cents a line, Back Page, each insertion - - - \$1.00 a line. (About eight words to a line.)

Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Adver-lisements must be received at publication office as early as Thursday morning to appear in next issue.



TO CAPITALISTS: I will give one-fourth (4) interest in mynewiy invented Palace Cattle Car to a responsible party who will furnish means to develop the same. Separate stalls for each animal. Feed carried on car. Cattle watered at any R. R. tank. Readily changed into common freight car. Address WM. T. ABBOTT, Fort Wayne, Ind. Palac



ATOR, VINIBLE DROP, Isguaranteed to be 1. A perfect nsurance esginat the cutting of Valvesests.Cylinder and Governor Valves of the engine. In the average of the average of oil, coal, and packing. 3. It will immer more speed in the revolutions of the engine, say from one te two strokes per minute, thus increasing the power hompson, 211 River St. Tr(y, N.Y.

of the engine. M'f'd by Holland & Thompso



Patents for Sale.—The Weber and Scovel patents for manufacture of Sugar and Sirup and Glucose out of Sorghum Cane, issued by Canadian Government. Samples of sugar sent. Address J. L. RAY, Champaign, Ill.



lication of the SCIENTIFIC AMERICAN, continue to examine Improvements, and to act as Solicitors of Patents

NEW BOOKS AND PUBLICATIONS.

Machines and Secondary Batteries.) By and the entertainment of the more experienced. Gustav Glaser De Cew. Wien, Pest, Leip-THE MODERN HOUSE CARPENTER'S zig: A. Hartleben, 1883. pp. 264.

This is the first volume of an electro technical library, by Mr. Claser De Cew. The author gives a clear description of the continuous and alternating current dynamo electric machines, and a history of the development of these mechanisms; the physical laws governing the ter. The information is well selected, well put, abunconstruction of the machines, the merits and demerits dant for so small a book, and, so far as necessary, of the several kinds. Secondary batteries are discussed clearly illustrated by diagrams,

Terry. New York: Fowler & Wells. 12mo, pp. 406. \$1.50.

The author seeks to give to young men beginning or contemplating a venture in retail trading the benefit of 30 years' experience in merchandising. The author's

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