

trunk; from aft side of stern post to after end of center board, 13 feet 6 inches.

(16) C. E. B. asks in what connection is an air pump used with a marine engine. A. To discharge the water, air, and vapor collected in the condenser.

(17) S. S. P. will find full directions for making row boats in SUPPLEMENTS No. 25, 26, 30, 32, 37, and 39.

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

W. B.—The quartzite (No. 1) can only be worked by mechanical means. We know of no substance which will corrode or dissolve the stone in the way you suggest. No. 2 is a limestone containing iron pyrites, of no value. We have not received the other specimen.—E. R.—It is calcareous tufa or travertine, carbonate of lime deposited from calcareous waters. It often forms beds of limestone which can be used for architectural purposes. The Coliseum at Rome is built of this rock.—C. E. R.—It is a decomposed feldspathic rock, useful in the manufacture of porcelains and white ware. Value 3 or 4 dollars per ton, washed and ground.—C. T.—Hornblende slate, contains no silver.—W. L. W.—Sample (in pen box) consists of magnetite, a valuable ore of iron.

COMMUNICATIONS RECEIVED.

- A Cheap Rowing Machine. By C. W. F.
On Gun Boats, etc. By J. J. C.
On Traveling Rocks. By C. F.
On Finding the Distances of Inaccessible Points. By P. McC.
On Ice Yachts. By F. B. C.
On Horse Railroads. By S. G.
On Ice Yachts. By S. J. D.
On Edison Generator. By G. F. P.
On Ice Yachts. A. C. C.
On Mineral Discovery. W. G. C. B.
On Molecules. By J. W. C.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

November 11, 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, or any patent issued since 1867, 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.

Table listing inventions such as: Aeration of water, apparatus for showing the...; Air forcing apparatus, J. F. Barker...; Alloy for journal bearings, B. J. Downs...; Auger, C. Brinton...; Barges, boats, etc., construction of, R. G. Jones...; Basket, metallic, Clark & Wells...; Bed bottom, J. P. Mallette...; Bed spring, H. Henley...; Beehive, C. W. Sappenfeld...; Belt, electro-therapeutic, C. N. West...; Belt fastener, A. Clunan...; Billiard table corner iron, H. A. Benedict...; Boot and shoe cleaning and polishing machine, P. Hille...; Boot and shoe heel, J. E. Mitchell...; Boot and shoe sole buffing machine, Winslow & Fifield...; Boot treed mechanism, W. S. Hall...; Bottle and stopper, H. B. Anderson...; Bottle stopper, W. Von Hofe...; Bracelet, T. G. Brown...; Bridge, R. B. Vardell...; Broiler, W. H. Harrison...; Brush, galvanic, B. H. Bobb...; Buckle, trace, T. J. Smith...; Butter working machine, J. S. Lash...; Button, L. W. Barnes...; Button, boot and shoe, G. H. W. Curtis...; Can for hermetically sealed goods, C. C. Lane...; Can top, F. Wilcox...; Capsule filling apparatus, F. E. Davenport...; Car coupling, G. W. Bolton...; Car door, grain, Miller & Susemihl...; Car, dumping, S. D. King...; Car lighting and ventilating apparatus, W. H. Smith...; Car replacer, M. Herrens...; Car starter, T. S. Taylor...; Carriage body corner plate, P. Anderson...; Cartridge capping and crimping tool, S. V. Kennedy...; Cartridge shells, machine for capping, A. L. Howard...; Casts of the human form, etc., apparatus for taking, J. E. Johnson...; Chandelier, extension, T. D. Hotchkiss...; Chisel, turning, F. Hanson...; Cider mill, J. L. Barnes...; Clock escapement, R. S. Abernethy...; Clock lock work, A. L. Atwood...; Cloth finishing machines, etc., apparatus for guiding and delivering woven fabrics to, J. Kerr...; Clutch, friction, H. C. Crowell...; Cock key, extension water, P. H. Regan...; Cock or faucet, C. A. Blessing...; Cock or valve, C. A. Blessing...; Coffee roaster, S. M. Poff...; Colors, apparatus and process of fixing, G. H. Smith...; Cooker, steam, S. L. Farrar...; Corn sheller, Ward & Irish...; Corpse cooler, W. White...; Corset, E. K. Bullock...; Corset, E. J. Wood...; Corset clasp, A. B. Curtis...; Cotton chopper and cultivator, combined, J. P. Prairie...; Cotton cleaner, J. W. Thorn...

Table listing inventions such as: Cotton sprinkler, J. Schler...; Door fastener, W. Williams...; Drain pipe, J. H. Blose...; Drawer lock, N. A. Hull...; Drawing or roving can, C. O. Beck...; Dredging machine, G. Uhl...; Dressing case, F. Koskul...; Drying vegetables, etc., screen to be used in, A. D. Chase...; Egg and fruit carrier, J. Merlette, Jr...; Egg holder, J. S. Birch...; Egg tester, W. S. Burnham...; Embroidering machine, J. C. Wellens...; Fare box, G. Beadle...; Feed bag for horses, E. Forbes...; Fence, flood, A. J. Heady...; Fence link, barb, C. A. Sherman...; Fence post, C. B. De Wolfe...; Filter, A. S. Cook...; Firearm, magazine, C. W. Baldwin (r)...; Firearms, ornamentation of, O. Bodenstein (r)...; Fire escape and portable water pipe, Drake & Hammett...; Fire extinguisher, automatic, J. W. Bishop...; Floor, fireproof, L. F. Beckwith...; Furnace feeder, Campbell & Hyland...; Furnace regulator, C. H. White...; Garden rakes, manufacture of, J. H. Smith...; Gas, apparatus for making coal, C. W. Isbell...; Gas, scrubber for making, C. W. Isbell...; Gate, A. O. Dean...; Gate, J. S. Henshaw...; Gate, T. F. Metcalfe...; Glass dish, Wahl & Weimann...; Gleaner and hay rake, W. A. Stark...; Goods, apparatus for facilitating payment and delivery of, J. C. White...; Grain binders, cord holder and cutter for, O. O. Storie...; Grain drill, S. B. Hart...; Grain meter, W. & T. P. Carr...; Grain separator, G. E. Passage...; Grain separator, W. I. Sibley...; Grate bar, rocking, F. B. Stevens...; Harness, A. W. & A. L. Lawton...; Harness, device for suspending and detaching, J. O. Knapp...; Harrow and clod crusher, J. M. Murphy...; Harvester, A. R. Reese...; Hat punching machine, A. L. F. Mitchell...; Hat shearing and finishing machine, A. L. F. Mitchell...; Hats, band fastener for use in the manufacture of felt, House & Wheeler...; Hats, stretching and finishing felt, House & Wheeler...; Hay cap, F. Watkins...; Head rest, adjustable, A. B. Manwarring...; Heat transmitting apparatus, G. R. Prowse...; Hermetic closing of receptacles, T. G. F. Dolby...; Hinge for telephone boxes or cases, T. A. Watson...; Hog scalding, D. F. Coffman...; Honeycomb foundation, artificial, J. E. Hetherington (r)...; Horse power machine, J. L. Moore...; Hose reel, T. J. Cain...; Implement seat, J. Kelly...; Key ring, G. W. Jopson...; Key seats, machine for cutting, W. W. Trevor...; Knitting tubular fabrics, machine for, B. L. Stowe...; Lamp, W. H. Smith...; Lamp black, apparatus for making, P. Neff...; Lamp, car, W. H. Smith...; Lamp, marine signal, F. J. Dennis...; Lantern, L. Henkle...; Lantern, dissolving view, H. Keevil...; Lathe attachment for turning lathe centers, S. Brown...; Leather, artificial, C. H. Knelles...; Lighting device, H. Arn...; Limb, artificial, A. A. Norman...; Locomotive engine, H. F. Shaw...; Loom shuttle, H. J. Miller...; Mail bag fastening, C. Bried...; Map cabinet, G. H. Grant...; Marble and stone, making artificial, J. H. Thorp...; Matting and smelting furnace, combined, L. Stevens...; Meat preserving apparatus, W. I. Goodin...; Meats, preventing mould upon, L. Fagersten...; Metal plates, machine for hanging, J. T. Bassett...; Millstone dressing machine, W. Griscoon...; Millstone dressing machine, E. H. C. A. T. Vulpus...; Mixing, crushing, and drying granular materials, apparatus for, J. N. Fleming...; Motor, J. Romig...; Mower, lawn, A. J. Whiteomb...; Needles, machine for making, C. D. Wrightington...; Nutlock, H. C. Hill...; Odometer, A. Yount...; Oil tester, kerosene, T. D. Pinckney...; Optical illusions, apparatus for producing, Pepper & Walker...; Ordnance, breech-loading, W. Palliser...; Packing for surface condensers, tube, J. S. Wilson...; Padlock, Frederick & Trump...; Padlock, permutation, F. O. Carlson...; Paper bag machine, W. C. Cross...; Paper damping machine, R. M. Hoe...; Paper dish, corrugated, C. Ingersoll...; Paper pulp from wood, process and machinery for making, H. A. Frambach...; Pavement, stone, J. Luck...; Pianoforte harmony attachment, G. A. Radinsky...; Picture frames, manufacture of, A. Komp...; Pipe joint, H. Broome...; Pipewrench, H. Rhyn (r)...; Pipe wrench, J. H. Vinton...; Piston for hydraulic and other cylinders, F. A. Bishop...; Plant and vine culture, C. H. Sikes...; Planter, corn, cotton, and seed, Culp & Montague...; Planters, check rower for corn, Rollins & Hudson...; Plow, Crook & Huffman...; Plow, reversible, O. Haskin...; Plow, sulky, A. K. Munson...; Plows, seeding and fertilizing attachment for, G. C. Beal...; Pocket knife, H. S. & R. S. Landis...; Printing machine, calico, F. Baylies et al...; Printing machine delivery apparatus, J. T. Hawkins...; Printing machine, die and plate, E. Hewitt...; Printing machine, reciprocating, J. T. Hawkins...; Printing paper bags, machine for, A. C. Getten...; Pulverizing apparatus, M. Golding...; Pump, lifting, E. Barnes...; Radiator, York & Wilson...; Radiators, blow off valve for steam, W. Burlingame...; Railwayrail sprinkler, M. F. Craig...; Railway signal, J. C. West...; Railway signaling, H. W. Spang...; Railway tie, O. E. Mullarky...; Railway track, elevated street, S. Dodson...; Reducing, mixing, and sifting machine, N. Bassett...; Refrigerator, H. W. Cass...; Rein rest, driving, G. P. Williams...; Rivet, J. B. Cornell...; Rock drill, E. J. Williams...; Roller mill adjustment, Nagel & Kaemp...; Roofing, composite, P. A. Bell...; Rope reel, C. N. Cass...; Rotary engine, G. Murray, Jr...; Ruler, parallel, F. R. Honey...; Saw clamp, S. Petty...; Saw handle, crosscut, E. R. Osgood...; Saw tooth, insertible, J. Ohlen...; Scarf, H. Selvage...; Scythe sharpener, steel, W. Dow...; Seal lock, F. W. Mix...; Seeding machine, Martin & Stewart...; Seeds, machine for cleaning grass, J. L. Fisher...; Service pipe box, P. 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