

which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH

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

January 23, 1877,

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.

Alarm and punch, W. H. Barr..... 186,523
Aniline dyes, preparing, L. Leigh..... 186,485
Animal trap, T. Belknap..... 186,448
Animal trap, A. Reed..... 186,424
Axle for plows, B. C. Bradley..... 186,409
Bale tie, B. Hempstead..... 186,560
Bale tie, W. B. Hayden (r)..... 7,471
Bale tie, I. A. Kilmer..... 186,579
Bather's appliance, Hackett & Coats..... 186,422
Bee hive, J. A. Barker..... 186,525
Beehive, A. G. Hill..... 186,562
Blow gun and arrow, L. C. White..... 186,651
Bolster and step, spinning, W. S. Luseomb..... 186,486
Bolting reel, M. Buck..... 186,537
Boom and sa attachment, F. Norwood..... 186,603
Boot and gaiter strap, S. Hodgins..... 186,563
Bottle protector, W. C. Stokes..... 186,635
Bottle stopper, J. M. Hoyt..... 186,476
Broadcast sower, Buist & Alden..... 186,410
Building block, M. Nolan..... 186,604
Bureau bedstead, C. H. Smith..... 186,632
Burial case, J. Askins..... 186,516
Button gaiter boot, J. A. Batchelder..... 186,526
Calendar, F. Ratchiff..... 186,622
Caloric engine, F. Brown..... 186,535
Car coupling, A. Allen..... 186,514
Car coupling, G. W. Hudson..... 186,568
Car coupling, W. W. McCollum..... 186,591
Car wheels, manufacture of, J. K. Sax..... 186,500
Carpet beater and sweeper, C. Elsasser..... 186,550
Carpet sweeper, E. K. Bruckenridge..... 186,456
Carriage, J. W. Post..... 186,615
Carriage clip, G. F. Smith..... 186,502
Carriage tops, support for, A. Goodyear..... 186,555
Cartridge, H. Buffington..... 186,460
Cartridges, capping and uncapping, G. L. Bailey..... 186,406
Caster, J. L. Bond..... 186,534
Casting valve seats, J. Berry..... 186,449
Churn, W. F. Gray..... 186,420
Churn, J. W. Smith..... 186,501
Churn, J. Tull..... 186,641
Cider and wine press, B. B. Bollinger..... 186,452
Cigar, J. Schalscha..... 186,628
Cloth cutting machine, A. Warth..... 186,643
Clothes drier, A. A. Peterson..... 186,612
Clothes line reel, J. H. Le Row..... 186,586
Clothes pounder, E. R. Hampton..... 186,474
Coal scuttle, C. S. Irwin..... 186,481
Copyholder, F. H. Joyner..... 186,480
Corn harvester, C. D. Reed..... 186,497
Corn harvester, A. Wilson..... 186,653
Cotton press, J. T. Burr..... 186,538
Cotton stalk cutter, Johnston, Cairne & Johnston..... 186,479
Countersink, D. J. Adams..... 186,513
Cultivator, E. H. & S. D. Perkins..... 186,611
Cultivator and cotton chopper, J. N. Gardner..... 186,571
Curry comb, U. G. White..... 186,632
Dampier, automatic, M. W. Daily..... 186,518
Dental engine attachment, E. T. Starr..... 186,504
Dental plates, stamping, C. F. Barnard..... 186,522
Dental plugger, C. King..... 186,580
Derrick, portable, B. Jackson..... 186,574
Die for forging hammers, D. Maydole..... 186,590
Door bell, J. P. Connell..... 186,416
Draught equalizer, G. W. Harrington..... 186,557
Draughtsmen's compasses, J. B. Fricke..... 186,419
Drill jar, F. E. Quinn..... 186,617
Dumping scow, Bird & Boegs..... 186,530
Dyeing silks, process for, J. Rau..... 186,626
Earth closet, L. Altemus..... 186,446
Eaves trough, J. F. Biegelaa..... 186,529
Electric motor, D. Ward..... 186,642
Electric railroad signal, J. D. Hughson..... 186,572
Electric thermostat, E. J. Frost..... 186,553
Electric train signal, L. L. Ferris..... 186,467
Electric telegraph, R. K. Boyle..... 186,453
Elevator for buildings, M. Bragaldi..... 186,455
Evaporating apparatus, D. Watson..... 186,645
Evaporator, open pan juice, D. Watson..... 186,646
Eyeglass, F. P. Iannarone..... 186,573
Fan, automatic, S. F. Gray..... 186,473
Feathering paddle wheel, W. C. Thompson..... 186,639
Fence, O. Cleaveland..... 186,543
Fence, O. H. Smith..... 186,631
Fire alarm bell striker, W. Donaldson..... 186,545
Fire kindler, J. McFarland..... 186,593
Fire shield, W. T. Vose..... 186,444
Flooding, O. S. Dickinson..... 186,463
Folding bier, W. White..... 186,650
Force pump, H. T. Drain..... 186,464
Force pump, C. H. McKeehan..... 186,594
Fruit jar, J. T. Schaffer..... 186,629
Gas burner, B. Donohue (r)..... 7,470
Gas stove, W. M. Jackson (r)..... 7,474
Gate, automatic, E. J. Coler..... 186,415
Grain separator, A. W. & C. T. Kendrick..... 186,578
Grain drill, J. C. Baker..... 186,407
Grain elevator, J. L. McLaughlin..... 186,596
Grain register, L. Poole..... 186,614
Grate bar for furnaces, L. P. Rider..... 186,436
Grinding mill, A. W. Straub..... 186,440
Hame and trimming, G. F. Eberhard..... 186,547
Hammers, manufacture of, D. Maydole..... 186,588
Hand rest, J. Ridge..... 186,625
Hanger for garments, L. Hellmann..... 186,559
Harness buckle, M. Huerta..... 186,569
Harness saddle tree, W. H. Bustin..... 186,461
Harrow and land roller, W. M. Stehley..... 186,506
Harvester rake, O. Cooley..... 186,413
Hat holder, P. H. Miner..... 186,488
Hat rack and seat, C. Whittaker..... 186,648
Head rest, W. L. Miltz..... 186,487
Hook eyes, manufacture of, J. Robson..... 186,437
Horse collar, A. Rutherford..... 186,627
Horse hay fork, H. Fisher..... 186,468
Horse hay fork, J. Orr..... 186,607

Horse-hampering device, W. H. Means..... 186,597
Horseshoe, Cornish & Hunt..... 186,544
Horseshoe, T. Thistlewood (r)..... 7,476
Ice cream freezer, J. F. Rote..... 186,438
Ice houses, preserving ice in, T. Krausch..... 186,581
Ice machine, R. H. Lucas..... 186,589
Index for books, Snider & Wolf..... 186,633
Injectors, compressing, W. R. Jones..... 186,576
Injector, W. Randall..... 186,619
Jug, etc., T. G. Hargrave..... 186,557
Keys, making machine, A. Shogren..... 186,439
Knob latch, reversible, Griscom & Grossman..... 186,556
Lamp black, making, J. Rogers..... 186,498
Lamp chimney cleaner, C. P. Palmer..... 186,609
Lamp extinguisher, C. T. Colby..... 186,414
Lantern, J. Hughes (r)..... 7,472
Leech, artificial, F. F. McDonald..... 186,592
Letter box, E. T. Marsh..... 186,429
Lighting rod clip, A. Snook..... 186,503
Lips, etc., attaching, F. G. Niedringhaus et al..... 186,433
Lock for pianos, etc., A. S. Blake..... 186,450
Locomotive exhaust, E. Longstreth..... 186,587
Locomotive exhaustpipe, J. C. Farmer..... 186,417
Lubricating compound, C. Toppan..... 186,640
Malt crushers, attachment to, C. Stoil..... 186,636
Mariner's compass, W. Thomson..... 186,638
Meat cutter, C. B. Andrews..... 186,515
Meat, extract of, H. Naumann..... 186,605
Milk cooler, Kinyon & Brown..... 186,482
Millstone dressing tool, M. L. Mowrer..... 186,491
Mosquito net frame, Lathrop & Salvaterre..... 186,583
Moth trap, R. McInturf..... 186,430
Neck yoke, metal, W. H. Johnson..... 186,425
Nut lock, W. C. Gould..... 186,421
Ore for roasting, preparing, Z. A. Willard..... 186,655
Ores, treating, Z. A. Willard..... 186,654
Paneled chair seat, J. M. Waters..... 186,644
Paper box, J. P. Buckingham..... 186,459
Paper collar, Averill & Ginn..... 186,517
Pessary, C. N. Fowler..... 186,469
Pianofortes, etc., stringing, G. Morgan..... 186,490
Pipe tongs, S. N. Jessop..... 186,575
Pipes, joining, J. F. Parsons..... 186,435
Plow, T. M. Moore..... 186,601
Plug tobacco machine, T. W. Prather..... 186,496
Pocket book lock, F. F. Weiss..... 186,510
Pottery in kilns, thimble for, E. Leak..... 186,585
Poultry, H. E. Cauty..... 186,540
Power hammer, T. Shaw (r)..... 7,475
Pump, deep well, W. S. Blunt..... 186,498
Pumping engine, Carr & Arthur..... 186,539
Quicksilver furnace, S. Charles..... 186,542
Railroad joint, S. Forman..... 186,552
Railroad rail joint, S. Ray..... 186,623
Railroad signal, A. M. Bodley..... 186,531
Railroad switch, D. Rousseau..... 186,626
Railroad ticket, B. C. Pole..... 186,613
Railway car heater, J. O. Osborne..... 186,495
Reciprocating churn, N. J. Miller..... 186,599
Reed organ stop action, W. D. Parker..... 186,610
Refrigerator, W. P. Whitson..... 186,619
Registering device for bottles, E. Zahringer..... 186,512
Revolving chair, C. C. Clay..... 186,462
Revolving cultivator, G. Stevenson..... 186,634
Revolving fire arm, H. L. Gardner..... 186,470
Revolving fire arm, D. B. Wesson..... 186,509
Revolving fire arm, S. W. Wood..... 186,445
Rock drill, S. Ingersoll (r)..... 7,473
Rolling hoop iron, F. Hickman..... 186,561
Running gear for wagons, M. D. Bennett..... 186,528
Sash balance, Eichenlaub & Gabriel..... 186,549
Sawing steel rails, C. R. Jacoby..... 186,423
Saws, guide for circular, C. I. Chaffee..... 186,511
Scaffolding, A. Blondin..... 186,451
Scaffolding, B. J. Potts..... 186,616
Scoop, E. A. Barnes..... 186,520
Scoop, E. A. Barnes..... 186,521
Screw driver, etc., fire arm, B. B. Hotchkiss..... 186,566
Screw machine, metal, N. C. Hubbel..... 186,477
Seat, reversible, L. T. Stanley..... 186,505
Seine boats, lookout pole for, O. Jones..... 186,424
Sewing machine, C. B. True..... 186,441
Sewing machine shuttle, D. W. Brown..... 186,536
Sewing straw braid, J. O'Neil..... 186,434
Shaft coupling, J. H. Belser..... 186,527
Show case, H. Houghton..... 186,567
Signaling by reflected light, H. C. Mance..... 186,427
Skelping die, H. C. Evans..... 186,551
Slate, C. F. Rapp..... 186,621
Slate, reversible hinge, Van Kannel & Papp..... 186,443
Sled tongue, J. P. Lawson..... 186,484
Snap hook, A. B. Tanner..... 186,637
Sofa bedstead, W. Ott..... 186,608
Spike puller, J. Douglass..... 186,546
Spouts, strainers, attaching, F. G. Niedringhaus et al..... 186,432
Spring whiffetree, A. Assman..... 186,405
Squirt can, J. W. Tallmadge..... 186,442
Steam, superheating, C. J. Eames..... 186,465
Steam boiler circulating device, W. Ord..... 186,493
Steam generator, A. Winton..... 186,511
Steam pump valve gear, B. S. Lawson..... 186,584
Stench trap, T. Boldemann..... 186,532
Stone compound, artificial, C. Welland..... 186,647
Stoneware jar, D. S. Chesebro..... 186,412
Stool, spring supported, W. C. Huffman..... 186,570
Stove board, J. S. Brooks..... 186,458
Stove platform, C. E. L. Holmes..... 186,475
Tape loom, R. Mueller..... 186,602
Tea steeping device, Woodward & Jeffords..... 186,656
Telegraph alarm and signal, T. A. Edison..... 186,348
Tightening roller, etc., Erskine & Weed..... 186,466
Tobacco press, N. B. Jones..... 186,577
Tool carrier, dental, J. W. Gilbert..... 186,471
Toy, A. Fritz..... 186,418
Toy trumpet, F. McLaughlin..... 186,595
Traction engine, J. S. Lake..... 186,582
Treadle, C. Hopkins..... 186,564
Trimming, M. P. Bray..... 186,454
Tug attachment, harness, D. W. Brodnax..... 186,457
Tug carrier, G. Jeakle..... 186,478
Umbrella runner, P. Molloy..... 186,600
Umbrella runner and tip cup, O. M. Smith..... 186,630
Valve, T. Boldemann..... 186,533
Vapor burner, M. L. Ballard..... 186,519
Vehicle top support, Marlatt & Wright..... 186,428
Veneers, composition, C. H. Land..... 186,483
Wagon brake, R. M. Baker..... 186,447
Wagon brake lever, J. G. Morton..... 186,489
Wagon lock, F. Rakes..... 186,618
Wagon, side spring, J. Ledwith..... 186,426
Wardrobe bedstead, W. Sutcliffe..... 186,507
Washing machine, J. Myers..... 186,431
Washing machine, C. K. Rogers..... 186,499
Watch escapement, N. Meyers..... 186,598
Water pipe, lateral, W. L. Church..... 186,411
Waterproof hose, J. Murphy..... 186,492
Water tube, boiler, etc., W. B. Glover..... 186,472
Water tube boiler, etc., W. Ord..... 186,494
Weather strip, E. C. Underwood..... 186,508
Welt trimmer, W. R. Barton..... 186,524
Wheel brake, B. B. Hotchkiss..... 186,565
Wheelbarrow and cultivator, J. D. O'Callaghan..... 186,606
Windlass hoist, J. & H. Fulmer..... 186,564

DESIGNS PATENTED.

- 9,712, 9,713.—CORSET.—M. Adler, New Haven, Conn.
9,714.—STOVES.—W. A. King, Dayton, Ohio.
9,715.—STOVE.—W. Sanford et al., Brooklyn, N. Y.
9,716.—SKIRT PROTECTOR.—R. Werner, Hoboken, N. J.
9,717.—SOAP.—T. Worsley, Philadelphia, Pa.
9,718.—INKSTANDS.—E. G. Cate, Bridgeport, Ohio.

[A copy of any of the above patents may be had by remitting one dollar to MUNN & CO., 37 Park Row, New York city.]

Advertisements.

Inside Page, each insertion --- 75 cents a line.
Back Page, each insertion --- \$1.00 a line.
Engravings may heat advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Friday morning to appear in next issue.

FOR SALE CHEAP.
Two British Patents
of special value to Chair Makers or parties producing Cabinet Makers or Builders' Hardware. The articles patented in Great Britain are successfully introduced in this market under an American patent. But little capital is required in producing the articles ready for market, and they sell quickly at a liberal remunerative price. Illustrated catalogues of the American Goods will be sent, and detailed information given, on application addressed to POST OFFICE BOX 3393, New York City.



Makers also of the Dazzle Black, Baking and Sicilian Varnishes, and all the best quality of Varnishes. These are all made in Europe or America, for PURITY, COLOR and DURABILITY.

Send for Circular and Descriptive Price List.

UPRIGHT DRILL PRESSES, H. BICKFORD, Cincinnati, Ohio.

WANTED—Men to solicit orders for our goods. Permanent Employment, good salary. Traveling expenses paid by company. UNION INDUSTRIAL WORKS, Cincinnati.

Now Ready. ILLUSTRATED HISTORY OF THE CENTENNIAL EXHIBITION OF 1876.

The Full History and progress of the Exhibition, Maps of the Grounds, Engravings of the Buildings, and accounts of all the most notable Scientific and Mechanical objects, profusely illustrated with Engravings, are given in the Scientific American Supplement for the year 1876. This work consists of Two Large Volumes, comprising over 800 quarto pages, equal in quantity of reading matter to over Seven Thousand ordinary book pages. The space devoted to the great INTERNATIONAL EXHIBITION is very extensive, and probably forms the most complete and full history of the affair that can be obtained. The illustrations pertaining to the Exhibition are more than 450 in number. A copious Special Index of all matters relating to the Exhibition is given. Those who desire to possess a complete and splendid Illustrated Record of the Centennial Exposition should have the SCIENTIFIC AMERICAN SUPPLEMENT for 1876.

In addition to this splendid History of the Centennial Exhibition, the SCIENTIFIC AMERICAN SUPPLEMENT for 1876 contains a vast amount of reading matter of great value for reference and preservation. It presents to the reader, in attractive form, full accounts of the Advances made during the year in all the chief departments of Science and the Useful Arts, covering the progress in Chemistry and Metallurgy, Mechanics and Engineering, Electricity, Light, Heat, Sound, Architecture, Photography, Technology, Pisciculture, Agriculture, Botany, Horticulture, Rural and Household Economy, Materia Medica, Hygiene, Natural History, Zoology, Microscopy, Meteorology, Terrestrial Physics, Geography, Geology, Mineralogy, Astronomy. The whole illustrated by over Two Thousand Six Hundred Engravings. The wide scope of this splendid work, its surprising variety of contents, its wealth of illustration, render it the most valuable contribution to scientific literature extant, while in price it is probably the most economical.

THE SCIENTIFIC AMERICAN SUPPLEMENT for 1876, complete, is supplied, stitched in paper, at the low price of \$5. Strongly bound, both volumes in one book, \$6.50. Bound in two separate books, \$4 each, or \$8 for the two. Sold at the leading Bookstores and News Offices, and by MUNN & CO., Publishers, 37 Park Row, New York.

N. B.—We supply the SCIENTIFIC AMERICAN and SUPPLEMENT for 1877 to subscribers at the combined rate of \$7 for the two papers, we paying postage. Any person who has already subscribed to the SCIENTIFIC AMERICAN for 1877 may obtain either the SUPPLEMENT for 1876 complete, or for 1877, as preferred, by remitting to us the difference between \$7 and the amount already paid on his subscription for SCIENTIFIC AMERICAN.

MUNN & CO., PUBLISHERS.

THE DINGEE & CONARD CO'S BEAUTIFUL EVER-BLOOMING ROSES

Strong Pot Plants, suitable for immediate flowering, sent safely by mail, postpaid. 5 splendid varieties, your choice, all labeled, for \$1; 12 for \$2; 19 for \$3; 26 for \$4; 35 for \$5. For 10 cents each additional, one Magnificent Premium Rose to every dollar's worth ordered. Send for our NEW GUIDE TO ROSE CULTURE, and choose from over 300 finest sorts. We make Roses a Great Specialty, and are the largest Rose-growers in America. Refer to 100,000 customers in the United States and Canada. THE DINGEE & CONARD CO., ROSE-GROWERS West Grove, Chester Co., Pa.

WASHINGTON

Life Ins. Co. of N.Y.

155 BROADWAY.

Sound to the Core! Its Management "Able, Prudent, and Honorable!"

Read the following Official Certificates:

INSURANCE DEPARTMENT, ALBANY, January 23d, 1877.

To the Editors of the Evening Journal:

Having caused a personal examination to be made of the condition and affairs of the Washington Life Insurance Company of New York, as of the 31st day of December, 1876, by Hon. John A. McCall, Jr., Deputy Superintendent, duly appointed by me for that purpose, and deeming it for the public interests that the result of his investigation should be published, I herewith enclose his report for publication.

Very respectfully yours,

W. SMYTH, Acting Superintendent.

ALBANY, January 23d, 1877.

Hon. William Smyth, Acting Supt. New York Insurance Department:

I respectfully report that in accordance with the provisions contained in your appointment No. 362, dated December 20th, 1876, and with the assistance of Messrs. Ballard, Willis and W. H. Smyth, I have completed an examination of the Washington Life Insurance Company of New York City.

The very satisfactory condition of the company as exhibited below is attributable to the management of its affairs by able, prudent and honorable men. It gives me pleasure to state that in a minute and exacting investigation I find nothing to condemn, but, on the contrary, much to commend.

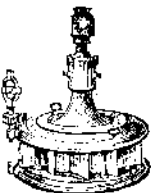
Complete schedules of mortgages, deferred premiums, and real estate investments as of December 31st, 1876, being the date of examination, have been placed on file in the department.

The following are the assets and liabilities:

Table with columns for Assets and Liabilities. Assets include Real estate (\$159,284 80), Bonds and mortgages (2,394,252 79), Cash in bank and office (116,654 18), etc. Total admitted assets: \$5,173,278 83.

LIABILITIES. Net value of outstanding policies \$4,337,644 00. Unpaid losses and commitments not due 43,306 82. Premiums paid in advance 2,388 51. Unpaid dividends to stockholders 346 50. Salaries, rent, &c. 3,000 00. Total liabilities as to policyholders \$4,386,685 83. Surplus as regards policyholders 786,593 00. Aggregate \$5,173,278 83. Capital stock \$125,000 00.

Respectfully submitted, JOHN A. MCCALL, Jr., Deputy Supt. CYRUS CURTISS, President. CYRUS MUNN, Assistant Secretary. W. A. BREWER, Jr., Vice-President. E. S. FRENCH, Sup't of Agencies. W. HAXTUN, Secretary. B. W. MCCREADY, M. D., Medical Examiner.



THE SUCCESS.

The Bollinger Water Wheel, so favorably known, has been purchased and improved, and will hereafter be built and sold by me under the name THE SUCCESS. Not only a premium, but the first premium, was awarded to this wheel, as now improved, at the Centennial. Send for descriptive pamphlet to S. M. SMITH, York, Pa.

WANTED.—SECOND-HAND WOOLEN MACHINERY, in good order, Carding, Spinning, and Weaving Jeans and Satinets. Parties wishing to sell address, giving price, &c., JOHN T. DULANY, Belton, Texas.

Say where you saw this.



Champion Combination and Youth's Combination Foot Lathes, Amateur Steam Engines & Boilers, Cylinder Saws and Stave Machines. Send \$1.00 for price. Strange's Cylinder Saw & Mfg. Co. Taunton Mass.