A good receiving instrument may be made of a tubular magnet and single helix, the latter being surrounded by an external soft iron case upon which the plate may be laid loosely. 3. About what size and quantity of wire is required for electro-magnets, and what is the length of the permanent magnets? A. An ordinary sounder helix will answer for a short circuit.

(40) W. E. says: Is there anything besides water that will cut Russian isinglass, and keep it in liquid form? A. It is soluble also in warm wine spirit, in strong acetic acid, and in diluted muriatic and nitric acids.

What kind of leather should I get for a polishing belt for lathe use? A. We believe that skeepskin is usually employed for fine work. There are dealers who make a specialty of such materials.

(41) L. T. D. asks: What is the best substance for the hands for those using the horizontal bar and trapeze? A. Pulverized rosin is, we think, given the preference.

(42) G. H. S. says, in reply to a correspondent who asked if coal oil (kerosene) will make the hair grow: I can say truthfully that it will. I am now 37 years of age; and about 8 years ago my hair gradually commenced to fall out, and in one year I was almost entirely bald. I wore a wig for about 2 hours a day for 3 years, that is, whenever I had occasion to go out. I used various preparations; the hair would grow a little, and then drop out; so that I almost despaired of having it grow any more. An engineer recommended me to try kerosene oil, as a relative of his had used it with success. I first had it tried on a dog. I found it did not injure his hair in the least; I next tried it on my arms and legs (for I was afraid of it), and I found that it strengthened the hair and new hair formed after four months' use, once a week. I next tried it on my head, cautiously; and it was not a great while before new hair or fuzz began to grow; and at the present time I have a pretty good head of hair. As soon as my head begins to get any dandruff, I wash it with oil.

(43) A. B. and others who ask as to perspiration of the feet: The unpleasant odor you mention is caused primarily by the impregnation of the leather with putrescible organic exhalations, various ammonia salts, acetic acid, etc., from the excessive perspiration of the feet within, or moisture without, and from the more or less imperfect fixing of the gelatin contained in the hide by the process of tanning. Under such continued conditions, of heat, moisture, etc., the leather, if not properly cared for, will suffer a species of slow decay, hence the odor. This may be obviated in great part by a frequent change of underclothing for the feet, and by keeping the leather as dry as possible, and well oiled. An unpleasant odor from shoes is often occasioned by the use of poor blacking.

(44) W. J. B. asks: How can I polish malleable iron castings after they have been nickel-plated? A. Use a buffing wheel.

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

A. H. F. & Co.—The shells have not been received.—R. S. N.—Judging from the small sample you send, the paper is impregnated with an insoluble lead soap, probably by saturating the paper with a strong soap solution and then immersing in a solution of sugar of lead.—M. P. B.—It is a slag from some iron furnace. The small red crystals are cyano-nitride of titanium.—H. A. S.—Some of the enamels from cooking utensils contain antimony; but in the powder which you send us, which consists principally of organic matters, we found no indications of the metal.—P. A. L.—It is a granitic rock containing small crystals or iron pyrites (sulphide of iron) and chalcopyrite (sulphide of copper), also a considerable quantity of oxide and carbonate of iron.—C. L. V.—The large piece is magnesian limestone, the smaller, red-colored fragment is jasper. The piece of an arrowhead is of flint.

L. D. asks: How is Florida water made?—J. McM. asks: What is the best way to break down butter from rolls to tubs, and from tubs to rolls? What is the best method of salting and coloring butter?

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On the Madstone. By W.

On a Perpetual Motion. By C. E. N.

On the Planet Vulcan. By A. F. G.

Also inquiries and answers from the following:

L. W. S.—C. A. H.—B. A. J.—E. J. W.—J. I.—W. W.—A. A. I.—M. M. H.—J. T. B.—L. D. D.—L. S. B.—C. W.—G. E. D. B.—C. W. C.—R. W., Jr.—C. R.—B. & W.—W. J. B.—S. M. L.—E. V. B.—W. R. McC.—P. W. W.—H. A. P.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who makes cheap achromatic microscopes? Who sells telephones, and what do they cost? Who sells galvanic bands or belts, for medical purposes? Who sells incubators, and what do they cost? Who makes the best pony planer and the best saw table?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," 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

April 17, 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.

Aerated beverage flavor, J. Matthews 189,764
Anchor, F. A. Buck 189,601
Anti-friction compound, G. E. Behrens 189,684
Bale ties, twisting, E. E. & I. A. Kilmer 189,748
Bath tub, C. E. L. Holmes 189,559
Bed bottom, spring, J. H. Frizelle 189,553
Bedstead, wardrobe, C. Pabst 189,776
Beer barrel, vent, F. Schultz 189,795
Beer faucet, P. Lyons 189,760
Boiler flue cleaner, J. S. Smith 189,666
Boot and shoe, W. J. Watkins 189,819
Boot jack, Doisy & Sarrazin 189,708
Boots, cementing rubber, R. S. Woodford 189,827
Bottle stopper, J. Slim 189,801
Bottle stopper, valve nozzle, C. Cristadoro 189,611
Bottle washer, E. Turbeville 189,669
Brick, T. F. Adams 189,676
Broom and brush rack, J. B. Clark, Jr 189,600
Burglar alarm, W. J. Smith 189,803
Burial casket, C. F. Spencer 189,809
Butter worker, H. A. Clow 189,608
Button, B. Bailey 189,595
Car coupling, G. Bower 189,689
Car coupling, C. C. Dow 189,710
Car coupling, W. B. Dunning 189,614
Car coupling, J. Lips 189,634
Car coupling, A. C. Rumble 189,791
Car heater, T. Keech 189,743
Carbureter, J. M. Palmer 189,645
Carriage shaft, J. A. J. Sawyer 189,657
Chain links, ornamental, E. F. Seery 189,797
Chains, link for, J. J. Freeman 189,619
Chair seats, J. Lemman 189,757, 189,758
Chandelier, friction clutch, J. H. Seaman 189,580
Chamber case, G. Vorrath 189,818
Chamber closet, E. Smith 189,802
Chuck for gas fittings, etc., J. Powell 189,652
Churn, G. S. Bell 189,685
Churn dasher, W. M. Landreth 189,631
Cider and wine press, J. Schoepflin 189,658
Clamp, J. G. Mole 189,767
Clamp for making frames, J. Zimmerman 189,831
Clothes pounder, Roberts, Rowe & Lane 189,577
Coffin, cast iron exterior, R. Beachman 189,596
Coin detecter, W. Painter (r) 7,620
Confectionery, putting up, H. H. Snow 189,807
Copy book, Requa & Dunn 189,574
Corn planter, H. W. Mayerhoff 189,766
Corn planter, dropper and marker, Silisbee *et al.* 189,581
Corn sheller, J. E. Lewis (r) 7,616
Corset, L. A. Palmer 189,777
Corset, E. S. Weldon 189,672
Cotton picker, J. Tripp 189,815
Crimping pin, hair, A. M. Smith 189,804
Cultivator, harrow, Saur & Wilson 189,792
Cultivator shovels, attaching, R. Elwood 189,550
Curtain fixtures, A. B. Shaw 189,660, 189,798
Cutter head, oscillating, J. R. Locke 189,635
Dental foil condenser, Hood & Reynolds 189,735
Desk, C. H. King 189,749
Ditcher, W. R. Peet 189,647
Door checks, C. S. Whipple 189,822, 189,823, 189,824, 189,825
Dredging machine, J. W. Philbrick 189,650
Drying and cooling, C. H. Hersey 189,625
Drying ground wheat, C. S. Fuller (r) 7,618
Electro-magnetic engine, M. Egger 189,714
Electro-magnet, armature, H. Stroh 189,584
Fan, J. G. Schmidt 189,793
Faucet, A. Fuller (r) 7,619
File, P. Heffernan 189,733
Fire arm, front sight, F. W. Freund 189,721
Fire bar, furnace, E. & G. E. Rowland 189,789
Fish and other traps, B. F. Smith 189,805
Flower stand, folding, S. R. Pay 189,571
Flowers, etc., mounting, L. L. Lewinsohn 189,759
Flue ditcher, W. W. Snyder 189,667
Fluting iron, B. B. Bignall 189,546
Fly fan, W. R. Fowler (r) 7,613
Fog horn, P. Thompson 189,587
Fruit drier, T. R. Kendall 189,746
Fruit jar, self-sealing, Earle & Perry 189,713
Gage glass, J. J. Paquette 189,778
Galvanic battery, M. W. Parrish 189,779
Gas apparatus, J. Rigby 189,575
Gas, producing, B. F. Greenough 189,727
Gas heater, soldering, G. R. Gleason 189,724
Gas key, A. G. Buzby 189,695
Gas, making, J. Rigby 189,576
Gas regulator, J. Bassemir 189,683
Gate, Kelter & Leickem 189,745
Gate, C. Pool 189,573
Gate, G. J. Tinsley 189,814
Gate, farm, O. F. Fuller 189,620
Gate, swinging, W. A. Ohaver 189,644
Glass, manufacture of, F. Siemens 189,800
Governor for engines, A. W. Browne 189,693
Grain separator, A. A. Balat 189,680
Grain separator, Ballard *et al.* 189,545
Grapnel for submerged piles, Bogert & Holmes 189,688
Grate, M. G. Bell 189,686
Guns, feeder for machine, J. P. Taylor 189,811
Harness buckle, E. G. Latta 189,632
Harness connection, F. Leclere 189,755
Harness pad, R. O. Burgess 189,694
Harvester elevator, Coddington & Kennedy 189,701
Harvester reel, C. W. & W. W. Marsh 189,566
Harvester, self-rake, I. N. & R. N. Cherry 189,605
Hay press, W. Kelly 189,744
Hay raker and loader, J. S. Hewitt 189,626
Heater, molasses, etc., B. F. Harper 189,732
Hinge for iron vessels, F. G. Neidringhaus *et al.* 189,639
Hoists, M. Pennypacker 189,648, 189,649
Hone, strop, and oil cup, Ketchum & Wilde 189,561
Hoop poles, splitting, G. B. Selden 189,659
Horse hay rake, M. P. Denney 189,707
Horseshoe, J. C. Brightman 189,692
Horseshoe, S. P. Fisher 189,718
Horseshoe nails, finishing, Mortimer *et al.* 189,769
Horseshoe nails, finishing, C. W. Woodford 189,589
Horseshoe nails, making, I. C. Tate 189,586
Hose, watertight, R. Cowen 189,610
Hot water, heating, S. & J. Bennett 189,687
Hydrant, J. K. Rugg 189,790
Hydraulic press, F. S. Kinney 189,630
Ice creeper, J. Crossley 189,708
Illuminating sign, C. H. Seawell 189,796
Incubator, C. C. Weston 189,820
Injector, J. Fergus 189,715
Ironing board, R. W. Hargrave 189,623
Ironing table, E. B. Smith 189,663
Ladder, N. S. Boynton 189,690
Lamp, N. L. Rigby 189,655
Lamp extinguisher, W. T. Wood 189,826
Lamp, hydrocarbon gas, R. W. Park 189,780
Lamp lighter, H. W. P. Colson 189,702
Lath, board, A. A. Smith 189,664
Lath machine, E. C. Dicey 189,613
Leaf turner, A. L. Clark 189,698
Leather cutting gage, G. F. Lindsay 189,563
Lock, seal, J. N. Smith 189,582
Locomotive engine, A. M. Cumming 189,704
Locomotive water stand pipe, H. Smith 189,665
Loom shuttle, C. Lewando 189,633
Loom staff picker, A. I. Earle 189,712
Lubricator, J. C. Lamb 189,752
Lubricator for steam engines, J. Powell 189,651
Malt kiln, H. Altenbrand 189,678
Mechanical movement, E. C. Hopping 189,738
Mechanical movement, J. E. Lewis (r) 7,617
Medicine glass, T. G. Boggs (r) 7,606
Millpick, J. Norman 189,772
Moulding machine, A. W. Stossmeister 189,812
Moulding sand sifter, J. Stackpole 189,583
Moulding and sheet metal, H. Miller 7,609
Mower, Douglas & Wemple 189,709
Music stand, J. D. & C. E. Alvord 189,544
Musical key board, G. N. Carozzi 189,548
Nursing bottle, J. Briere 189,691
Nut lock, J. D. Kennard 189,747
Nut lock, G. Neilson 189,642
Oil can, W. H. Bartels 189,682
Ore separator, W. Hooper 189,734
Organ action, reed, L. K. Fuller 189,554
Organ reed, L. K. Fuller 189,555
Pan and basin, G. Wright 189,590
Paper boxes, inserting staples in, H. R. Heyl (r) 7,608
Paper collar, S. S. Gray 189,726
Paper cutting machine, E. Schlenker (r) 7,612
Paper pulp engine, J. S. Warren 189,671
Pattern, metallic composition, J. Habermehl 189,729
Pencil sharpener, G. Agnew 189,592
Piano stringing device, G. Morgan 189,768
Picture exhibitor, F. Prince 189,784
Pipe coupling, M. Allen 189,593
Pipe tongs or wrench, E. R. Girvin 189,621
Pipe wrench, W. Eberhard 189,615
Pipe wrench, E. R. Mathews 189,567
Plow, W. Clore 189,607
Plow, H. Gale 189,722
Plow, J. M. Looker 189,636
Plow, reversible, E. C. Hodge 189,558
Potato digger, J. P. Maull 188,568
Printing roller, litho, W. H. Woodcock 189,828
Printing, colors for, C. H. O. Radde 189,654
Printing presses, Griffith & Byrne 189,556, 189,728
Printing press, W. H. Woodcock 189,829
Propeller, steering, J. H. Carpenter 189,603
Pulley, screw hoisting, L. T. Pyott (r) 7,611
Pump, chain, T. Wallis 189,670
Pump valve, W. E. Worthen 189,830
Pump, elastic bucket, T. Kenyon 189,629
Pumps, driving, ship's, Gordon & Baxter 189,622
Punching sheet metal, T. Rowan 189,656
Redistillation apparatus, P. G. Rooney 189,578
Reflector, etc., A. Pudigon 189,653
Revolving firearm, D. Moore (r) 7,610
Rice huller, E. H., L. L., & F. A. Graves 189,725
Ropewaygrip, A. S. Hallidie (r) 7,607
Sad iron, S. J. Bugh 189,602
Sash cord fastener, N. Holmes 189,560
Saw filing machine, S. V. Pattillo 189,646
Saw set, C. B. Hopkins 189,736
Sawing machine, W. F. & I. Barnes 189,681
Sawing machine, G. J. Kautz 189,628
Sawing shingles, H. J. Morton 189,638
Scales, platform, I. Rigdon 189,786
Screws, threading, J. A. Sheldon 189,661
Screws, threading, H. S. Ansdell 189,754
Scythe fastening, F. Ludden 189,565
Seed drill and harrow, T. J. Whitecar 189,821
Seeding machine, J. C. Baker 189,679
Sewing machine braider, G. H. W. Curtis 189,705
Sewing machine feed dog, H. Feyh 189,716
Sewing machine motor, Haworth & Newell 189,624
Sewing machine, shoe, J. Bond, Jr 189,599
Sewing machine shuttle, R. H. St. John (r) 7,615
Shade fixture, spring, P. W. Phillips 189,781
Shade holder and gas burner, F. S. Shirley 189,799
Sirup and sugar filter, etc., W. J. Allen 189,594
Skate, parlor, J. W. Post 189,783
Skid for handling boxes, A. Day 189,706
Sleigh knee, A. A. Abbott 189,675
Spouts and strainers, F. G. Neidringhaus 189,640, 189,641
Station indicator, J. P. Schmitz 189,794
Steam boiler, D. Sullivan 189,585
Steam trap, C. H. Yeager 189,591
Stench trap, P. F. Morey 189,570
Stench trap, H. W. Clapp 189,549
Stone and glass, polishing, A. Vogeley 189,817
Stove, C. A. Hamlin 189,557
Stove, lamp, G. H. Ferris 189,616
Stove, gas and heating, S. Rothschild, Jr 189,787
Stove, safety car, S. & G. R. Swartz 189,668
Stoves, water heater for, J. J. Elwood 189,551
Table easel, C. Fisher 189,617
Table, extension, J. E. Spraker 189,810
Table blocks, J. W. Norcross 189,773, 189,774
Tap and die, J. Flower 189,719
Tea and coffee pot, E. B. Manning 189,762
Telegraph, printing, Pope & Edison (r) 7,621
Telegraph signal box, S. D. Field 189,717
Ten pin ball, W. Woods 189,674
Tenon and mortise joint, W. F. Morton 189,770
Thread cutter, T. Masac 189,763
Thread, winding, W. Clark 189,697
Thread, spooling, J. W. West 189,673
Ticket reel, W. N. Evans 189,552
Tide power, H. Newhouse 189,643
Tire tightener, W. F. Rowe 189,788
Tobacco, marking plug, J. T. Drummond 189,711
Tobacco, marking plug, C. Peper 189,572
Tobacco package, P. Cauhape 189,604
Tobacco stick, M. M. Ledford 189,756
Tooth brush, Coakley & Lloyd 189,699
Toy dancer, B. F. Spayd 189,808
Toy money box, J. Hall (r) 7,614
Track cleaner car, J. N. Clark 189,696
Try squares, shade for, C. B. Hopkins 189,737
Tube welding furnace, W. B. Sandford 189,579
Umbrella tip cup, R. Lubrinski 189,564
Under garment, S. T. Converse 189,609
Valve, safety, A. Turnbull 189,816
Valve, steam slide, J. Gillies 189,723
Velocipede, Will & Uebele 186,588
Violin for practice, C. F. Albert 189,677
Vise, T. P. Hardy 189,731
Waffle iron, J. T. Lambert 189,753
Wagon brake lever, J. F. Klinglesmith 189,750
Wagon, platform, E. H. Booth 189,598
Warp regulator, W. Oothout 189,774
Wash board, Fisher & Warren 189,618
Wash boiler, W. McIlvain 189,765
Wash boiler attachment, C. Kamlah 189,742
Washstand, L. Slater 189,662
Washstand, portable, N. O. Bond 189,597
Washing composition, R. B. Hurd 189,739
Washing list indicator, H. E. Israel 189,740
Washing machine, Croushorn & McBee 189,612
Washing machine, E. L. Hancock 189,730
Watch winding device, W. H. Bracy 189,600
Watchman's time detector, J. A. J. Redier 189,785
Water closet, G. Jennings 189,741
Water closet, Kupferle & White 189,562
Water closet, F. Pohley 189,782
Water elevator, C. E. Lykke 189,761
Water engine, J. S. W. Johnson 189,627
Water filter, C. C. Morgan 189,771
Water filter, W. S. Snook 189,806
Water wheel, J. S. Boddie, Jr 189,547
Whip lashes, twisting, G. A. Martin 189,631
Whips, fitting sidings for, M. E. Moore 189,569
Wind wheel, A. J. Cobb 189,700
Windlass beam, variable power, D. Knowlton 189,751
Window screen, W. Flood 189,720
Writing fluid, J. M. Taylor 189,813

[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 head 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.

THE FIRST GREAT SALE OF
PATENTS AT AUCTION,
By GEO. W. KEELER, Auctioneer, Salesroom, 53 and 55 Liberty St., New York. The Exhibition of *Models and Drawings* will open on May 21st, and the sale will take place at 12 o'clock on May 31st. Send 10c. for catalogue.

$1 ADDING MACHINE. The very latest! For Bookkeepers, Merchants, and everybody! By mail, carefully packed, on receipt of price. HOLT & CO., Box 2452, Grand Rapids, Mich.

Steel Name Stamps.
N. Y. STENCIL WORKS, 87 Nassau St., N. Y.

WANTED — FOR MONCLOVA, STATE of Coahuila, Mexico, a man who knows how to make Star Candles, without the use of Sulphuric Acid, capable to put up and put in running order the necessary apparatus, superintend the manufacturing process, and teach same to the parties interested. Apply and state terms to GOLDFRANK, FRANK & CO., San Antonio, Texas.

HUB TURNING MACHINE. Illustrated circulars free. HUGO LUEBBEN, Sheboygan, Wis.

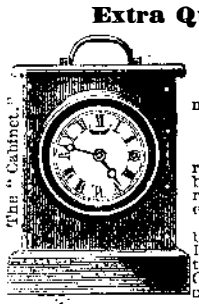
25¢ | MONKEY WRENCH | 35¢
A strong, convenient, and durable Tool, for the factory, shop, farm, etc. 8-inch, 25 cents; 10-inch, 35 cents. For circular, address BOX 1996, Phila., Pa.

POCKET COIN DETECTOR.
Size of a silver dollar. No counterfeit coin can be made it will not detect. 25 cents by mail. Agents Wanted. Liberal discounts. J. W. SUTTON, 95 Liberty St., New York.

TO MACHINISTS.
Wanted, at a large Anthracite Colliery, a machinist to take charge of the machinery and of the repair shop. Must be able to put up and take out pumps, engines, etc., and to handle men. Machinery must be kept in first-class running condition, and clean and neat. Address, giving references as to ability, sobriety, and good character, M. X., Post Office Box No. 5415, New York. None but a first-class man need apply.

BOYS Send 6c. for 100 page Catalogue of Presses, Type, Cuts, &c. Presses from $3 to $150. Illustrated Instructions worth $1. GORHAM & CO., Boston, Mass.

S. B. JEROME & CO.,
Extra Quality Clocks.
New Haven, Conn.
(Established 1856).



Manufacture various special, novel, and tasteful styles of
Detached Lever Time Pieces.
They have substantial and durable metal movements, with balance wheel like a watch; will run in any position, and are of especial value to the traveler.
They are suitable for the Library, the Family Room, the Dining Room, the Sleeping Room, the Shop, the Store, and the Cabin, and any place where correct time is desirable.

The "St. Nicholas," imitation morocco, (4½x4) $2.00
The "Souvenir," Turkey morocco, (4½x4) 2.50
The "Cabinet," black walnut, (6x4½), see cut 2.50
The "Boudoir," octagon, morocco, (5 in.) 3.50
The "Roslyn," Scotch plaid, (6x4½) 4.00
The "Melrose," Scotch plaid, (6x4½), mantel, 4.00
The "Holyrood," polished white holly, (6x4½), " 4.00

Accuracy and Durability Guaranteed.
Carefully packed and sent safely by mail, post-paid, on receipt of price.

IMPROVED CHIMNEY CAP.
Agents wanted for the sale of this Patent, with allowance of 20 per cent. FREDERICK LICHTENFELS, No. 33 Green St., Newark, N. J.

© 1877 SCIENTIFIC AMERICAN, INC.