

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 office as early as Thursday morning to appear in next issue.

\$30,000 cash will be given as a bonus to secure location of satisfactory manufacturing establishment in growing Western town, near good coal and having competing railroads. Address, with references, Western Town, Box 773, New York, stating character of business and present capital.

Mechanics' Watch. \$10. Circul's free. Birch, 38 Dey St., N.Y. Turkey Emery. Star Glue, Pumice, Walrus Leather, Polishers' Supplies. Greene, Tweed & Co., 118 Chambers St., N. Y.

Patent for sale.—G. Neu, 171 W. Liberty St., Cin., O. Davis' Invalid Bed, described in another column, with huck mattress, hair or cotton top, \$25. Rights for sale. Geo. B. Davis, Richmond, Va.

Machinist and Fine Tool Maker wanted. One that has had experience on watch tools and fine model work. Steady employment and pay every week. Wm. Essick & Co., Reading, Pa.

Second-hand Upright Engine, in excellent order, for sale. 6 to 8 H.P. Trump Bros. Mach. Co., Wilmington, Del. Rolled Nickel Anodes, Grain Nickel, Nickel Salts, Platers' Supplies. Greene, Tweed & Co., New York.

Constant Current Electric Generator. Price, \$3. Constant Current Cure Company, 207 Main St., Buffalo, N. Y. Send for circular. See advertisement, p. 253.

For Sale.—A complete set of Patterns, Flasks, and Core Arbors, for making Cast Iron Flanged Pipe, Elbows, Tees, and Greenhouse Fittings. Will be sold low to clean out a branch of a business. Address C, Box 1358, New York.

A pair of 15 x 24 Engines, good as new, for sale cheap, as they must be removed. J. C. Todd, 10 Barclay St., N.Y.

Superintendent wanted.—A man competent to superintend a works employing about 300 hands in building machinery and tools, and in manufacturing goods for a regular trade. None but a first-class man in all respects need apply. Address B, Box 2333, New York.

Ajax Metals for Locomotive Boxes, Journal Bearings, etc. Sold in ingots or castings. See adv., p. 236.

New Comb'd Milling and Gear Cutting Machines, large range. C. A. Condé & Co., Makers, Philadelphia, Pa.

A valuable article on the Treatment of Acute Rheumatism, by Alfred Stillé, M.D., will be found in SCIENTIFIC AMERICAN SUPPLEMENT, No. 238. Anything from the pen of this eminent and experienced physician is interesting and instructive.

Foot Lathes, Fret Saws, 6c. 90 pp. E. Brown, Lowell, Mass.

"How to Keep Boilers Clean," and other valuable information for steam users and engineers. Book of sixty-four pages, published by Jas. F. Hotchkiss, 84 John St., New York, mailed free to any address.

Alden Crushers. Westinghouse Mach. Co., Pittsb'g, Pa.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringer Rolls and Moulded Goods Specialties.

Cope & Maxwell M'fg Co.'s Pump adv., page 254.

Punching Presses & Shears for Metal-workers, Power Drill Presses. \$25 upward. Power & Foot Lathes. Low Prices. Peerless L'unch & Shear Co., 1158 Liberty St., N.Y.

Pure Oak Leather Belting. C. W. Arny & Son, Manufacturers, Philadelphia. Correspondence solicited.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Wood-Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

Experts in Patent Causes and Mechanical Counsel. Park Benjamin & Bro. 234 Broadway, New York.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

Peck's Patent Drop Press. See adv., page 269.

National Steel Tube Cleaner for boiler tubes. Adjustable, durable. Chalmers-Spence Co., 10 Cortlandt St., N.Y.

Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsb'g, Pa.

Best Oak Tanned Leather Belting. Wm. F. Forepaugh, Jr. & Bros., 531 Jefferson St., Philadelphia, Pa.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, importers Vienna lime, crocus, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.

Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 233.

The Sweetland Chuck. See illus. adv., p. 233.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Solomon's Parallel Vise, Taylor, Stiles & Co., Riegelsville, N. J. Skinner's Chuck. Universal, and Eccentric. See p. 236.

For Machinists' Tools, see Whitcomb's adv., p. 238.

Draughtsman's Sensitive Paper. T. H. McCollin, Phila., Pa.

Electric Lights.—Thomson Houston System of the Arc type. Estimates given and contracts made. 631 Arch, Phil.

Common Sense Dry Kiln. Adapted to drying all of material where kiln, etc., drying houses are used. See p. 254.

4 to 40 H. P. Steam Engines. See adv. p. 254.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs. 23d St., above Race, Phila., Pa.

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

Supplee Steam Engine. See adv. p. 270.

Ore Breaker, Crusher, and Pulverizer. Smaller sizes run by horse power. See p. 285. Totten & Co., Pittsburg.

Saw Mill Machinery. Stearns Mfg. Co. See p. 269.

Paragon School Desk Extension Slides. See adv. p. 269.

Brass & Copper in sheets, wire & blanks. See ad. p. 269.

CONSTANT CURRENT CURE COMPANY, 207 Main St., Buffalo, N. Y.

SIRS: I am compelled to say that, contrary to my expectations, the Generator you sent me has performed a miraculous cure in my case. For seven weeks I had been almost distracted with neuralgia in my head. I had tried every prescription and remedy known, but without avail. When your package came by mail, I applied the electrodes with little hope for relief I confess; but in twenty minutes the terrible pain that had been torturing me for seven weeks DISAPPEARED ENTIRELY. I consider it only justice to acquaint you with these facts. R. R. GREER, 270 Leonard St., Brooklyn, E. D.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability. Write for information. C. H. Brown & Co., Fitchburg, Mass.

Ball's Variable Cut-off Engine. See adv., page 269.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 15,000 Crank Shafts, and 10,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

Wren's Patent Grate Bar. See adv. page 269.

Millstone Dressing Diamonds. Simple, effective, and durable. J. Dickinson, 64 Nassau street, New York.

The I. B. Davis Patent Feed Pump. See adv., p. 270.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Eagle Anvils, 10 cents per pound. Fully warranted.

Geiser's Patent Grain Thrasher, Peerless, Portable, and Traction Engine. Geiser Mfg. Co., Waynesboro, Pa.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 269.

For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 270.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 268.

Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions, Sunday schools, colleges, and home entertainment. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

New Economizer Portable Engine. See illus. adv. p. 270.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn.

For Shafts, Pulleys, or Hangers, call and see stock kept at 75 Liberty St., N. Y. Wm. Sellers & Co.

Wm. Sellers & Co., Phila., have introduced a new Injector, worked by a single motion of a lever.

Don't buy a Steam Pump until you have written Valley Machine Co., Easthampton, Mass.

Improved Skinner Portable Engines. Erie, Pa.



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 given to inquirers.

We renew our request that correspondents, in referring to 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 a reasonable time should repeat them. If not then published, 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, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

(1) F. G. asks how to make a good cement for fastening sheets of pasteboard together. It must be waterproof. A. Good pitch and gutta percha (about equal parts) are fused together, and to nine parts of this are added three parts of boiled oil and one-fifth part of litharge; continue the heat with stirring until thorough union of the ingredients is effected. This is applied hot or cooled somewhat, and thinned with a small quantity of benzole or turpentine oil.

(2) A. B. B. asks for a simple and reliable method of testing coal oil. A. Place a small sample of the oil to be tested in a cup partially immersed in a vessel of water, and having placed the bulb of a good thermometer in the oil, heat the water gradually, and as the temperature of the oil rises apply the flame of a burning taper to its surface, and note on the thermometer the degree at which it inflames. This should not occur below 120° Fah. Many of the standard oils inflame only at temperatures 150° or higher.

English Patents Issued to Americans.

From September 13 to September 23, 1881, inclusive. Albumen, manufacture of. W. H. Hillman, N. Y. city. Cigar lighter. C. H. Vibbard et al., Aurora, N. Y. Corset, M. Cohn, New York city. Crayon holder. C. W. Livermore, Providence, R. I. Door knob. C. C. Harrington, Newton, Mass. Dynamo-electric machine (2). T. A. Edison, Menlo Park, N. J. Electric cable. P. B. Delany et al., New York city. Electric lamp. E. M. Fox, New York city. Electric lamp. A. E. Brown, Cleveland, Ohio. Electrical alarm apparatus. H. C. Roome, Jersey City, N. J. Fastening device for dash boards. C. F. Littlejohn et al., New Haven, Conn. Hair pin. Mary T. Foote, Boston, Mass. Heel blank machine. J. W. Brooks, Boston, Mass. Lamp burner, W. Painter, Baltimore, Md. Life boat. G. B. Berrell, Pennsylvania. Needle. R. Crowley, New York city. Paving block. W. Hunt, New York city. Reflector. W. Wheeler, Massachusetts.

Railway signaling apparatus (2). W. W. Gary, Boston, Mass. Sawing machinery. F. Myers, New York city. Sewing machine. F. G. Altman et al., Medina, Mo. Show case. L. G. Blood, New York city. Stitching buttons, Morley Sewing Machine Company, Holyoke, Mass. Telegraph cable. J. B. Henck, Jr., Boston, Mass.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending September 27, 1881, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 37 Park Row, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Table listing inventions and their patent numbers, including items like Acid, method of and apparatus for volatilizing, Auger, hollow, J. C. Kimes, Axle box, car, J. Harris (2), etc.

Table listing inventions and their patent numbers, including items like Engine. See Traction engine, Evaporator. See Hot air register evaporator, Exercising machine, J. L. Bennett, Expansion joint, J. B. White, etc.

Pump, W. S. Laney.....	247,663
Pump, A. T. Sheets.....	247,696
Pump bucket, chain, W. E. Doty.....	247,622
Pump, double acting, J. Henwood.....	247,642
Pump, feed, L. Stewart.....	247,704
Rack. See Clothes rack.	
Railway balloon and electric tramway and truck, C. F. McGlashan.....	247,571
Railway, traction rope, S. H. Terry.....	247,523
Reaping machine, J. Johnson.....	247,653
Reflector, W. Wheeler.....	247,589
Register. See Passenger register.	
Register and alarm, S. F. Payne.....	247,577
Regulator. See Electric regulator.	
Rendering tank valve, R. Whelan.....	247,724
Revolution indicator for marine engines, A. Mensing.....	247,673
Ring. See Key ring.	
Rocking chair, E. Kettler.....	247,656
Rocking chair, folding, L. S. Hayes.....	247,622
Rocking chair, platform, Belersdorf & Bunker.....	247,472
Rod. See Ladder brace rod.	
Roller. See Gate roller. Land roller.	
Rolling mill, C. Lewis.....	247,665
Roof, W. Barry.....	247,596
Roof and roof pavement, illuminating, T. Hyatt (r).....	9,883
Saddle, harness, B. H. Brand.....	247,604
Salt drying apparatus, J. H. W. Biggs.....	247,598
Sash fastener, W. Miller.....	247,675
Sash holder, J. B. Baumberger.....	247,531
Sash tightener, J. B. Yeagley.....	247,728
Saw guard, circular, J. G. Groff.....	247,558
Saw mill, portable, W. N. Whipple.....	247,726
Saw sawage, W. S. Reeder.....	247,687
Scarf, neck, W. A. Spencer.....	247,584
Screw cutting die stock, L. H. Sanderson.....	247,581
Screw driver, Mallett & Furbish.....	247,609
Seeding machine, S. C. Mendenhall.....	247,572
Separator. See Ore separator.	
Sewing, book, E. S. Boynton.....	247,475
Sewing machine needles, machine for grooving, S. C. Kingman (r).....	9,884
Sheep, remedy for cure of scab in, Brittain, Rolley & McGeorge.....	247,479
Shovel. See Cultivator shovel.	
Show stand, W. Miller.....	247,676
Silos, preserving ensilage, J. M. Bailey.....	247,595
Skins, machine for shaving, House & Castle.....	247,648
Sail propeller, J. L. Ray.....	247,686
Soldering apparatus, can, A. S. Munger.....	247,510
Spark arrester, steam boiler, J. Westinghouse.....	247,722
Spindle and bearing therefor, J. C. Stanley.....	247,522
Sponge holder for slate pencils, Coles & Luckhurst.....	247,616
Spool blanks, machine for cutting, E. Allen.....	247,593
Spooling machine spool holding attachment, W. Clark.....	247,536
Spoon, sheet metal, M. Fowler.....	247,554
Stamp batteries, ore feeder for, E. Coleman.....	247,615
Stamp, hand, O. H. Tappan.....	247,710
Stand. See Music stand. Show stand.	
Steam boiler, P. Fitzgibbons.....	247,551
Steam engines, method of and apparatus for regulating, H. Davey.....	247,619
Stone, art of and apparatus for cutting or dividing, H. S. Maxim.....	247,569
Stonc, artificial, Grünzweig & Hartmann.....	247,636
Stove fire pot, J. H. Doughty.....	247,623
Stove, magazine, F. J. Gould.....	247,633
Stump extractor, W. A. Stoddard.....	247,705
Swing, W. S. Tothill.....	247,524
Telephonic repeater, E. T. Gilliland.....	247,631
Tent pins, machine for making, F. W. Evers.....	247,626
Thill coupling, P. E. Shirk.....	247,699
Throttle and governor, combined, I. Purdie.....	247,685
Timber with preservative fluids, treating, S. B. Bouton.....	247,602
Tire upsetting machine, G. B. Libby.....	247,667
Traction engine, Westinghouse, Moore & Westinghouse.....	247,723
Valve. See Rendering tank valve.	
Valve and valve gear, I. H. Alfre.....	247,594
Valve and valve guide, W. Bury.....	247,609
Valve, balanced slide, S. Whinery.....	247,725
Valve, steam engine, J. W. Hayes.....	247,641
Vapor bath, electro-thermal, J. H. Markham.....	247,670
Vehicle, passenger, F. B. Brownell.....	247,608
Velocipede, W. Hillman.....	247,643
Veneer for furniture, muslin, R. Parke.....	247,514
Vessel, W. L. C. Ackermann.....	247,526
Vessels, torpedo guard for, W. H. Walker.....	247,717
Wagon bed lifter, J. R. Stone.....	247,706
Washing machine, J. I. Graves.....	247,634
Washing machine, boiler, J. Williams.....	247,525
Watch escapement, E. Wensch.....	247,721
Watch meter, piston, J. H. Coombs.....	247,617
Wheat beater, B. R. Hawley.....	247,640
Wheel. See Paddlewheel.	
Wire stretcher, C. W. Black.....	247,599
Wire tightener, S. Campbell.....	247,612

DESIGNS.

Carpet, H. Horan.....	12,494
Carpet, W. L. Jacobs.....	12,495, 12,496
Carpet, J. Pegel.....	12,498
Drawer pull, C. F. Mosman.....	12,500
Horn chair, C. B. Fletcher.....	12,490
Type, font of printing, G. F. Giesecke.....	12,491 to 12,493
Type, font of printing, C. Müller.....	12,497
Wall paper, E. Leissner.....	12,499, 12,501

TRADE MARKS.

Axes, W. C. Kelly & Co.....	8,684
Axes, Weed & Becker Manufacturing Co.....	8,678, 8,637
Beverage, A. Jameson.....	8,683
Brandy, Cazade, Crooks & Reynaud.....	8,670
Buckets, well, Frewitt, Spurr & Co.....	8,688
Catarrh and hay fever cure, H. D. Sanford.....	8,689
China, porcelain, and earthenware, R. V. Briesen.....	8,665
Cigars, Bengochea & Fernandez.....	8,663
Cigars, Rivero, Martinez & Co.....	8,679
Corn extractor, N. C. Polson.....	8,677
Cutlery, pocket, J. Russell Cutlery Company.....	8,681
Gelatine, Townsend & Baremore.....	8,675
Hose for pumps and engines, Wannalanset Manufacturing Company.....	8,686
Medical compound, certain, Coussens & Tabler.....	8,666, 8,668
Mowers, lawn, Carr & Hobson.....	8,669
Oil, illuminating, Sone & Fleming Manufacturing Company.....	8,672, 8,673, 8,674
Ointment, pile, Coussens & Tabler.....	8,667
Print, Billings, Taylor & Co.....	8,664
Paints, compounds for reducing oil, D. Rockwood.....	8,680
Starch, C. Morningstar & Co.....	8,685
Tobacco, chewing, G. S. Schwartz & Co.....	8,690
Watch cases, Duerer Watch Case Manufacturing Company.....	8,671
Wine, champagne, G. H. Mumm & Co.....	8,676

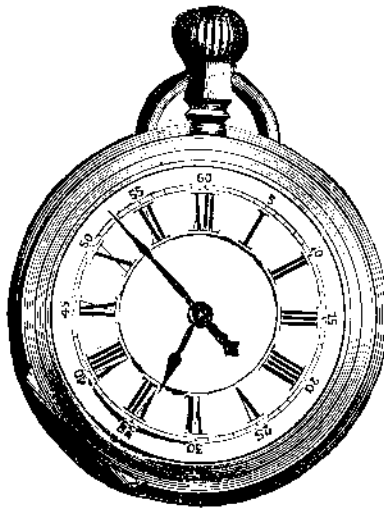
Advertisements.

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. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

**BAND SAW BLADES** New Patent Process. Send for sample and catalogue. H. A. KIMBALL, Agt., 614 Filbert St., Philadelphia, Pa.

MINERAL WOOL.

This fireproof and indestructible material successfully prevents loss of heat by radiation, keeps frost from water pipes, deadens sounds, checks spread of fire in walls, partitions, floors of dwellings. 25 cts. per cubic foot.  
 U. S. MINERAL WOOL CO., 16 Cortlandt St., N. Y.



WATCHES ALMOST GIVEN AWAY.

OUR TWO DOLLAR WATCH.

It is the common practice of the Gold and Silver refiners of England, France, Germany and Switzerland to purchase from the Pawnbrokers of their respective countries all the gold and silver watches which have been unredeemed simply for the sake of the gold and silver cases. The works are then sold to a celebrated watch firm who have made a specialty of this business. This firm place the works in the hands of skillful workmen who set to work and put them in as good condition as possible. These watches are every variety of movement, some of them being very fine and perfect time-keepers, others not quite so good, but averaging good, so that take these watches right straight through, they are certainly the best value for the money ever offered. The cases are strong white metal. Altogether there could not be a better investment as you are sure in every case to get your money's worth and in most cases a great deal more than the trifling cost, while in most cases you are sure to get a splendid time-keeper. We have put the price right down to lowest point, viz.—We will send a watch by express for **Two Dollars, Two Watches** by express for **3.75**, **Special**—We will send One Watch by Registered Mail, postage paid, for **Two Dollars** and **Twenty-Five Cents**, **Two Watches** by Registered Mail, for **Four Dollars**. Send Post Office Order or Registered Letter. **NOTICE**—We will send six Watches by express for **Ten Dollars**, if ordered within 30 days from date of this paper. Get five of your friends to send with you and we will send you a **Seventh** on this paper and Order at once, we will select the best Watches for you.

**WORLD MANUFACTURING CO.**  
 122 Nassau Street, New York.

WATER ELEVATOR, OR STEAM JET PUMP.

Has no valves or moving parts. With 60 lb. steam pressure will elevate hot or cold water 50 ft., and hose for fire purposes. **Cheap and Best Pump made.** A 1 1/2 in. pump, price \$7.50, will throw a 1/2 stream of water 40 ft.; 2 1/2 in. pump, price \$14, at 60 lb. pressure, elevates 70 ft. gal. 28 ft. per hour. All pumps guaranteed. State for what purpose wanted, and write for prices, etc.  
**VAN DUZEN & TIFT, Cincinnati, O.**

INDUSTRIAL CHEMISTRY.—THE

most important changes in the Industrial Applications of Chemistry within the last few years. By J. W. Mallet. An interesting résumé, treating of the following subjects: General Chemical Treatment of Textile Materials. Bleaching, including the Manufacture of Chloride of Lime. Preparation of Dye Stuffs. Artificial Coloring Matters. Mordants. Dyeing, Calico Printing. Tanning. India-rubber and Gums. Resins. Containing in SCIENTIFIC AMERICAN SUPPLEMENT, No. 291. Price 10 cents. To be had at this office and from all newsdealers.

**WOOD WORKING MACHINERY.**  
 PLANING MATCHING MOLDING MORTISING  
 TENONING CARVING MACHINES  
 BAND & SCROLL SAWS  
 UNIVERSAL VARIETY WOOD WORKERS &c &c.  
**J. A. FAY & CO.**  
 CINCINNATI, O. U. S. A.

THE PHENOMENA OF HYPNOTISM.—

A paper, by Drs. Bourneville and Regnard, of the Salpêtrière, elucidating certain phenomena of catalepsy which were formerly referred to so-called "magnetism." The Theory of magnetism. Methods of magnetizing animals and plants. Deleuze's method. Fava's method. Phenomena of hypnotism known to the Ancients. Processes employed at the Salpêtrière for producing hypnotism. Experiments of the authors. The production of catalepsy. Fascination. Hallucination. Illustrated with fourteen figures, showing the behavior of patients under various influences. Contains in SCIENTIFIC AMERICAN SUPPLEMENT, No. 295. Price 10 cents. To be had at this office and from all newsdealers.

**DEAN BROS' STEAM PUMP WORKS, INDIANAPOLIS, IND.**  
 Boiler Feeders, Fire Pumps, Pumping Machinery for all purposes.  
 Send for Catalog

**PLANTING FOR PROFIT.—ABSTRACT** of a paper read by Mr. T. Mason, before the Michigan State Horticultural Society, giving an enumeration of the varieties of fruit which are most sought for and readily disposed of in the market, at the best prices. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 298. Price 10 cents. To be had at this office and from all newsdealers.

A Square Offer

By an Old and Reliable Firm! Read and Act!

We want One Hundred Thousand new subscribers before Jan. 1, 1882, and we fully expect to get them, for we give a larger and better paper than any other publishers, and more valuable and desirable Premiums, for less money. We appeal to every reader of this paper to read and consider this advertisement carefully, get a copy of THE POST, and then go to work among friends and neighbors. **THE SATURDAY EVENING POST is the Oldest, Cheapest, and Best Family Paper in America.** It is a large 16-page weekly, elegantly printed on tinted paper, folded, cut, and bound. It comes every week, and contains more interesting reading than any four One-Dollar publications.

WHAT WE GIVE AWAY!

**1st. For One Dollar**, if received before Nov. 25, we will send THE POST six months—26 weeks—and as a Premium give 100 Pieces of Choice Music, or The Only Instantaneous Guide to the Piano, Organ, or Melodeon, with eleven pieces of music, which enables any one, without previous knowledge or practice, to play any of the popular airs on the instruments named at sight. This statement may seem incredible, but it is absolutely true. This is not a worthless chart, costing a few cents, but a system entirely new, and different from anything heretofore produced. It is pronounced invaluable, and all we claim for it, by Teachers, Professionals, and over 5,000 purchasers. No experience or musical knowledge necessary. A few minutes' practice with THE GUIDE, and ordinary common sense, enables any child or person to play airs and accompaniments by note at sight.  
**2d. For Two Dollars**, received on or before Nov. 25, we will send THE POST one year—52 weeks—and as Premium The Only Instantaneous Guide—described above—and one hundred and eleven pieces of popular music. This is practically giving each year's subscriber Premiums worth \$5, while THE POST alone is well worth \$2 a year without premium.

AN IMMENSE OFFER TO CLUB RAISERS!

Club Raisers should send \$1 for a 6-mos. subscription at once. If accompanied by a promise to raise a club, we will send by return mail THE GUIDE AND 111 PIECES OF POPULAR MUSIC!

For a club of ten 6-months subscribers, accompanied by Ten Dollars, if received before Nov. 25, we will give the sender a good substantial watch—a good time-keeper in solid metal case. For a club of ten yearly subscribers, accompanied by Twenty Dollars, we will give the sender a good and beautiful

SOLID ALUMINUM GOLD WATCH.

The manufacturers claim that this watch will not vary if wound regularly; that the case will retain the color of gold; that the best jewelers cannot tell them from gold watches; that the jewels are genuine; that the movement is the genuine American—in fact, they claim for this watch every merit possessed by a gold watch costing \$100 to \$200. We have contracted for 10,000 of these justly celebrated watches, each one of which is named at sight. Each Premium gift has been offered before for such a trifling service. This Premium to Club Raisers is well worth \$20, and can be sold readily at that price if not wanted personally. Remember, every six-months subscriber gets a choice of either 100 pieces of popular music or the Guide and Eleven Pieces of music; every yearly subscriber gets the Guide and One Hundred and Eleven Pieces of Popular Music! Watches we give to club raisers only. The Premiums may be sent to one address and the paper to another. Bear in mind we are old and reliable publishers, well known in this city for over fifty years, and we cannot afford to treat you unfairly. We say this because many seemingly tempting offers are made by parties who have no guarantee or reputation. We believe every reader of this advertisement will at least send a 6-months trial subscription, and we hope you will be wise enough to

THIS REALLY  
 \$20 WATCH GIVEN AWAY!

Your neighbors and friends will all like the paper, and be delighted with the Premiums. As these offers are limited to Nov. 25, next, you have no time to lose; as this advertisement will not appear again, cut it out, and don't lose sight of it or the date.  
 All yearly subscribers will receive the paper from date of receipt to January, 1882. Remittances should be made by Post Office money order, registered letter, or bank draft.  
 Address, The Saturday Evening Post, No. 726 Sanson-st., Philadelphia, Penn.

**A \$6.00 REVOLVER FREE TO YOU.**  
**THE WORLD RENOWNED BLUE JACKET**  
 IVORY HANDLE GOLD PLATED CYLINDER  
 ENGRAVED AND ENAMELED

Weight 7 1/2 ounces. THIS CUT IS 2-3 SIZE. **THE BLUE JACKET** is the most elegant Revolver in the world, as well as the most perfect and beautiful in design and finish. It is made of the very best steel. The barrel and frame is Nickel Silver-plated, with Gold-plated Cylinder, Ivory Stock, and the whole beautifully engraved and enameled, making a beautiful contrast of four different colors. The cut represents only two-thirds the actual size, and as it is impossible to show the beautiful contrast of Gold, Silver, Blue and Ivory, it conveys but a slight idea of this handsome weapon. It is simply beautiful beyond description. It is the first IVORY HANDLE ENAMELED AND ENGRAVED REVOLVER ever sold for less than \$6.00, and is the most remarkable bargain we ever offered in firearms. This Revolver cannot be made to-day for twice what we are offering it for, and it will be long time before we shall be able to offer another such bargain. The best result only when these are sold, no more can be had except at the price of \$6.00. **THE BLUE JACKET** is well known as a Revolver in the world, and the new Russian Model Hip Stock **BLUE JACKET** is a hand, enabling you to hold it firmly and steadily. It has a finely rifled barrel, positive stop-action holding the cylinder firmly in place, and uses the extra-long cartridge. With the **BLUE JACKET** you can shoot a squirrel particle from the tallest tree. We guarantee its shooting qualities, and if you are not perfectly satisfied with it we will refund the money every time. We purchased the Revolver a less than one-fourth the price we give you, and we wish to give all the same time introduce our publication **THE HOUSEHOLD GUEST MAGAZINE**. If you will send us \$2.00, and TEN CENTS EXTRA to help pay postage, we will mail the Magazine one year, and the REVOLVER FREE of all other charges. **THE HOUSEHOLD GUEST MAGAZINE** contains 22 quarto pages, with handsome illustrated Engraved Cover, and is filled with choice Illustrations from all parts of the world. Stories by the best authors; Poets; Anecdotes; Sketches; Illustrated Fishes; Department; useful information; Statistics; Assorted Correspondents; Household Notes; The Kitchen; Ladies' Items; The Toilet Table; The Garden; Wit, Humor, &c. It is now in its fourth year, has a large circulation, and the regular price for a year's subscription has always been \$1.50.  
**FREE TO YOU.** If you will cut this advertisement out, show it to your friends, and get club orders to you, and send us \$14.00, with 70 cents extra in stamps to help pay postage, we will send you the Revolver and Magazine free for your trouble. **PLEASE BEAR IN MIND** that each one in the club will also get the Revolver and Magazine, and when full amount \$14.70 is sent with the club order, we will put in a box of cartridges for each Revolver. As to our reliability, we refer to any New York Publishers or Merchants. Send money by Registered Letter or Post Office Order at our risk.  
 Address, **E. C. RIDEOUT & CO., 10 Barclay Street, N. Y.**  
 THE TARGET illustrated here was made with the BLUE JACKET at 27 yards. Every shot being put in a bull's-eye one inch in diameter. **CUT THIS OUT, IT WILL NOT APPEAR AGAIN.**

**VIOLIN OUTFITS.**  
 Consisting of Violin, Bow, and Teacher, Sent to any part of the United States on 1 to 3 days trial before buying.  
 at \$3.50, \$7., \$12. & \$22. each. Send Stamp for Beautifully Illustrated 32 page Catalogue of Violins, Guitars, Basses, Cornets, Flutes, and all kinds of Musical Instruments, Music Boxes, &c. **Lowest Prices.** Mail Orders a Specialty. C. W. Story, 26 Central St., Boston, Mass.

**ELEVATORS**  
 HAND POWER AND HYDRAULIC  
 FREIGHT & PASSENGER  
 SHAFTING PULLEYS & HANGERS  
**L. S. GRANES & SON ROCHESTER, N. Y.**

**BACTERIA AS A CAUSE OF DISEASE** in Plants. By Prof. T. J. Burkill.—In this paper the author shows, from careful investigations and experiments made by him, that certain common diseases of trees, such as the "Yellows" of the peach, are due to bacteria analogous to those that produce diseases in animals. Illustrated with 38 figures. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 297. Price 10 cents. To be had at this office and from all newsdealers.

**INVENTORS**  
 There has never been a better time to sell good inventions or to secure capital for the purpose of developing them. Money is unusually plentiful and capitalists are actively seeking good investments. We undertake the sale of patents, entire or in part, secure partners, and form joint stock companies. Highest references given. Circulars free.  
**E. L. RICHARDS & CO.,**  
 733 Broadway, New York.

**THE WELLAND CANAL.—FULL DETAILS** of construction of the recently-completed enlarged Ship Canal around the Falls of Niagara, by the Dominion of Canada. With map showing connections. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 300. Price 10 cents. To be had at this office and from all newsdealers.

**PATENTS.**  
 MESSRS. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN, continue to examine Improvements, and to act as Solicitors of Patents for Inventors.  
 In this line of business they have had thirty-five years' experience, and now have unequalled facilities for the preparation of Patent Drawings, Specifications, and the prosecution of Applications for Patents in the United States, Canada, and Foreign Countries. Messrs. Munn & Co. also attend to the preparation of Caveats, Copyrights for Books, Labels, Reissues, Assignments, and Reports on Infringements of Patents. All business entrusted to them is done with special care and promptness, on very reasonable terms.  
 A pamphlet sent free of charge, on application, containing full information about Patents and how to procure them; directions concerning Labels, Copyrights, Designs, Patents, Appeals, Reissues, Infringements, Assignments, Rejected Cases, Hints on the Sale of Patents, etc.  
 We also send, free of charge, a Synopsis of Foreign Patent Laws, showing the cost and method of securing patents in all the principal countries of the world.  
**MUNN & CO., Solicitors of Patents,**  
 37 Park Row, New York.  
 BRANCH OFFICE.—Corner of F and 7th Streets, Washington, D. C.