

ETNA

INSURANCE CO. HARTFORD CONN.
 CASH CAPITAL \$4,000,000
 LOSSES PAID IN 66 YEARS \$5,000,000
 The Largest and Strongest Company.
 L. J. HENDEL, PRES. W. H. CLARK, ASST. Secy.

A CURIOUS AUTOGRAPH.

"At another time I saw on a desk a scrap of paper that had on it a comical likeness or image of a human skeleton in miniature—a profile view of the skull, the ribs, and the other bones, even to the foot. I wondered who the senatorial artist was, and in handling the paper I chanced to turn it another way. And what do you think it was? It was not meant for a skeleton, after all. It was nothing else than a very hasty autograph of Senator—"

Read *The Recollections of a Boy-Page in the U. S. Senate*, in the December number of ST. NICHOLAS, if you cannot make out the autograph; the article will interest old and young. This is the Christmas issue, containing contributions from Whittier, Trowbridge, Stockton, Boyesen, Mary Mapes Dodge, Miss Alcott, and others. It costs but 25 cents and makes a superb present for a child. All dealers sell it. Now is a good time to subscribe (\$3.00 a year) through dealers or the publishers, The Century Co. New-York.

SAVE MONEY
 BY SENDING FOR A COPY OF OUR GRAND HOLIDAY CATALOGUE before buying your Christmas Presents. Whether for young or old, nothing is so sure to please as a handsome book, and our catalogue places an almost endless variety before you to select from at from 30 to 50 per cent. below the regular retail prices. We will send a copy by mail FREE to any address. ESTEY & AUSTIN, 301-305 Washington St., opp. "Old South," Boston, Mass.

AMERICAN Electrical Exhibition
 TO BE HELD IN
 Mass. Charitable Mech. Ass'n Bldg.,
 HUNTINGTON AVE., BOSTON, MASS.

TO OPEN
 Monday Dec. 1, 1884.
 TO CLOSE
 Saturday, Jan'y 3, 1885.
 SPECIAL NOVELTIES MAY STILL OBTAIN SPACE.

FREE! FREE!

To introduce our New and Popular Books at once, we make the following liberal offer for the Holiday: The person telling us the longest verse in the Bible before Jan. 1st, will receive a \$100 Gold Hunting Case Lady's Watch worth \$50.00. If there be more than one correct answer the second will receive a Solid Silver, Stem Winding, Gentleman's Watch worth \$25.00, the third a key winding Silver Watch. Each person must send with their answer 30 stamps, for postage, for which they will receive 7 Valuable and Popular Books as follows: 1. Manual of Etiquette, for ladies and gentlemen, a guide to politeness and good breeding, giving the rules of modern etiquette for all occasions. 2. The Standard Letter Writer, for ladies and gentlemen. A complete guide to correspondence, giving plain directions for the composition of letters of every kind with illustrations for use and examples. 3. Winter Evening Reading Book, a large collection of Acting Characters, Tableaux, Games, Puzzles, &c., for social gatherings, private theatricals and evening amusements. 4. Dictionary, Recitations and Readings, a large and choice collection for school exhibitions and public and private entertainments. 5. Parlor Magic and Chemical Experiments, a book which tells how to perform hundreds of amusing tricks in magic and instructive experiments with simple agents. 6. Sixteen Complete Stories, by popular authors, embracing love, humorous and detective stories, stories of society life, of adventure, of railway life, etc., all very interesting. 7. Fancy Work for Home Adornment, an entirely new work upon this subject, containing easy and practical instructions for making fancy baskets, wall pockets, brackets, needle work, embroidery, etc., etc., profusely and elegantly illustrated. Cut this out and name paper. Address: E. G. BABCOCK & CO., CENTERBROOK, CONN.

You need the Best Family, Religious, and Literary Weekly Newspaper.
THE INDEPENDENT, New York.
 The *Pell Mall Gazette*, of London, says it is "One of the ablest weeklies in existence."
 \$3 per year; \$5 for two years.
 "TRIAL TRIP," 30 cents for a month. Send card for Free Sample Copy. Address
THE INDEPENDENT, New York City.

A. A. GRIFING IRON CO
 STEAM HEATING Apparatus
 SOLE MANUFACTURERS
BUNDY STEAM RADIATOR
 750 COMMUNIPAW AVE.
 JERSEY CITY, N. J.

FREE TO ANY LADY
 If you are the mother who will agree to show our catalogue and price list of Rubber Goods to her friends and try to induce her to buy for us. We will send you free, post-paid two full sized, LADIES' GOSSAMER RUBBER WATER PROOF GARMENTS, as a sample, and one of our handsome Colored Covers 44 page Catalogues with wholesale price list showing how you can make a nice profit right at home. Send 50 cents for postage, packing, &c., (stamps or silver taken). Cut this out and send it to: B. A. BABCOCK & CO., CENTERBROOK, CONN.

RUBBER BACK SQUARE PACKING.
 BEST IN THE WORLD.
 For Packing the Piston Rods and Valve Stems of Steam Engines and Pumps.
 It represents that part of the packing which, when in use, is in contact with the Piston Rod. A, the elastic back, which keeps the part B against the rod with sufficient pressure to be steam-tight, and yet creates but little friction.
 This Packing is made in lengths of about 20 feet, and of all sizes from 1/4 to 2 inches square.
NEW YORK BELTING & PACKING CO.,
 JOHN H. CHEEVER, Treas. Nos. 13 & 15 PARK ROW, Opp. ASTOR HOUSE, NEW YORK.
 JOHN D. CHEEVER, Dep'y Treas. Branches: 305 CHESTNUT ST., Philadelphia. 151 LAKE ST., Chicago. 524 & 54 SUMNER ST., Boston.

CUTLER'S POCKET INHALER
 AND
 Carbolate of Iodine INHALANT.
 A cure for Catarrh, Bronchitis, Asthma, and all diseases of the Throat and Lungs—even Consumption. It will break up a Cold at once. It is the King of Cough Medicines. A few inhalations will correct the most Offensive Breath. It may be carried as handily as a penknife, and is guaranteed to accomplish all that is claimed for it.
 As a preventive it is in truth the "magical Amulet" with which one may bid defiance to Cholera, Yellow Fever, and all Miasmatic and Infectious diseases. It has been thoroughly tested in various hospitals and localities infected with Malaria, Small Pox, Diphtheria, etc., and of the great number of persons, including Physicians and Nurses, who used the INHALER as a preventive, not one is known to have been attacked with any of the diseases to which they were exposed.
 Patented through the agency of the SCIENTIFIC AMERICAN in 1873, this Inhaler has since had a larger and more extensive sale than any Medical Instrument ever invented.
 It is approved by physicians of every school, and endorsed by the leading medical journals of the world.
 Over 400,000 in use.
 Sold by Druggists for \$1.00. By Mail, \$1.25.
 W. H. SMITH & CO., PROP'S.
 410 Michigan St., Buffalo, N. Y.

AN OPTICAL WONDER For Pleasure and business
 A NEW, original, cheap Lantern, for projecting and enlarging photos, maps, chromo cards, opaque pictures and objects. Works like magic, delights and mystifies all. With 450 Pictures, No. 1, \$2.50; No. 2, \$5.00; by mail, 25c extra. No. 2, \$5.00; by mail, 50c extra. **MAMMOTH WONDER CATALOGUE FREE**
 HARBACH ORGAN CO., Philadelphia.

A MAGNIFICENT OFFER.
 1 Silver-Plated Butter Knife, 1 Silver-Plated Sugar Shell, 6 Silver-Steel Tea Spoons in handsome case and Six Months Subscription to "HOME GUEST," the Popular Illustrated Magazine, all sent just for 10c. In stamps to pay postage, packing, &c. 60 Day Offer. Public Home Guest, Hartford, Conn.

HEALTHY MOTHERS AND HEALTHY CHILDREN.
 A scientific treatise of 451 pages, written in plain language, giving valuable information concerning the Diseases of Women, and also on the Diseases of Children. How removed and prevented. A valuable book for women. Price \$2.00. Local General Agents wanted. Send for circulars.
BROWN, ELLIOTT & SPEARS, Silver Creek, N. Y.

REID'S LIGHTNING BRACE Specially designed for Light Boring, Screw Driving, Etc. Agents wanted.
 NICKEL PLATED, WITH TWO BITS, ROSEWOOD TRIMMINGS, \$2.75 POST-PAID.
 A. H. REID
 1635 BARKER ST., PHILAD'A.

THE HARDEN STAR HAND GRENADE FIRE EXTINGUISHER
 Puts Out Fire Instantly.
 See editorial notice in SCIENTIFIC AMERICAN of November 23d, 1884.
 Send for circulars. Address
 Harden Hand Grenade Fire Extinguisher Co.,
 205 Wabash Ave., Chicago.
 10 Oliver St., Boston, or
 95 West Broadway, New York

OPTICAL GOODS
 Microscopes, Telescopes, Field and Opera Glasses, Magic Lanterns, etc.; also, Barometers, Thermometers, Galvanoscopes, Batteries, Drawing, Drawing, Dairy, and other Scientific Instruments. 182 pp. Catalogue free.
PRENTICE & SON, Opticians, 176 Broadway, N. Y.

MALLEABLE AND FINE GRAY IRON ALSO STEEL
 THOMAS DEVLIN & CO. FINE TUNING JAPANNING AND PATTERNS
 LEHIGH AVE. & AMERICAN ST. PHILA.

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-eight 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,
 361 Broadway, New York.
 BRANCH OFFICE—Corner of F and 7th Streets, Washington, D. C.

THE LAWSON NON-EXPLOSIVE BOILER
 This is the only steam boiler ever devised in strict compliance with the demands of natural laws. It gives complete immunity against explosions, delivers dry steam, prevents all incrustation and deposit on the bottom plates, affords safety with high pressure, and secures great economy. The invention is applicable to every style of boiler, and can be readily applied, internally or externally, to new or old boilers. Licenses granted on liberal terms to manufacturers. Send for description.
LAWSON NON-EXPLOSIVE BOILER CO.,
 155 and 157 Broadway, N. Y.

WATCHMAKERS.
 Before buying, see the Whitcomb Lathe and the Webster Foot Wheel, made by the AMERICAN WATCH TOOL CO., Waltham, Mass. CATALOGUES FREE.

Sent Free To find out what THE PHRENOLOGICAL JOURNAL is like now, send your address on postal card to No. 733 Broadway, New York City. N.B.—List of book on Phrenology, Physiognomy, Health, etc., FREE.

Remington Standard Type-Writer.
 The important improvements just added double the value of the machine, and greatly increase the strength, which it maintains over all competitors.
 Wyckoff, Seamans & Benedict,
 281 & 283 Brodway, NEW YORK.

ELECTRICAL WORLD
 An Illustrated 24 Page Weekly devoted to ELECTRICITY and its PRACTICAL APPLICATIONS. Every one should read it who cares to know what is taking place in this active field of progress, which offers unequalled attractions to Inventors, Mechanics, Chemists, Capitalists, Students, and all bright young men seeking an advantageous start in life. Sample copy free. Subscription \$3.00 a year. Send \$1.00 for four months on trial. Address THE ELECTRICAL WORLD, 9 Murray St., New York.

BARNES' Patent Foot and Steam Power Machinery. Complete outfits for Actual Workshop Business. Lathes for Wood or Metal, Circular Saws, Scroll Saws, Formers, Mortisers, Tenoners, etc., etc. Machines on trial if desired. Descriptive Catalogue and Price List Free. **W. F. & JOHN BARNES,** No. 1999 Main St., Rockford, Ill.

SEBASTIAN, MAY & CO.'S IMPROVED 360 Screw Cutting Lathe.
 Designed for actual work; no toy lathes for wood or metal. Drill Presses, Chucks, Drills, Dogs, and machinists' and amateurs' outfits. Lathes on trial. Catalogues mailed on application.
 185 & 187 W. Pearl St., Cincinnati, Ohio.

THE PAYNE AUTOMATIC ENGINE
 Gives more power from same amount of fuel and water than any engine made, and 50 per cent more power than rated at. All engines warranted. All sizes and styles, 2 to 250 horse power. Send for prices and catalogue A. S.
H. W. PAYNE & SONS,
 P. O. Box 1207, Elmira, N. Y.

New Catalogue of Valuable Papers
 contained in SCIENTIFIC AMERICAN SUPPLEMENT, sent free of charge to any address.
MUNN & CO., 361 Broadway, N. Y.

A LOVELY CHRISTMAS GIFT.
 Every Christmas we make the little folks a Christmas Present. This year we have something nice and pretty. To introduce our goods in every home we will send to any boy or girl free of charge, if you will send 25c. for postage, &c., 3 pretty Dolls with beautiful life-like features, pretty curls and big eyes or bangs and dark eyes, and wardrobe of 22 Dresses, Hats, &c.; one elegant gilt-bound floral Autograph Album illustrated with birds, ferns, scrolls, &c.; five lovely Christmas Cards, one pretty Birthday Card and a 60p. Illustrated Holiday Book. **ACME MFG. CO.,** Ivoryton, Conn.

ROOTS' NEW IRON BLOWER.
 POSITIVE BLAST.
IRON REVOLVERS, PERFECTLY BALANCED,
 Has Fewer Parts than any other Blower.
P. H. & F. M. ROOTS, Manufacturers,
 CONNERSVILLE, IND.
 S. S. TOWNSEND, Gen. Agt., 29 Cortland St., 9 Day St., COOKE & CO., Selling Agts., 23 Cortland Street, JAS. BEGGS & CO., Selling Agts., 9 Day Street, NEW YORK.
 SEND FOR PRICED CATALOGUE.

FRET SAW OR BRACKET WOODS,
 IN CHOICE AND RARE VARIETY,
 PLANNED READY FOR USE.
 ALSO LATEST BOOKS OF DESIGNS.
GEO. W. READ & CO.,
 Manufacturers Mahogany and other Cabinet Woods.
 186 to 200 LEWIS ST., N. Y.

FOUNDRY PRACTICE.
 ADVERTISERS wish to produce a Reliable Book on all kinds of Foundry Practice, embodying the results of actual experience in different parts of the world, in Iron—Malleable, Cast, etc. Steel, Brass, and other work. Persons qualified to contribute practical information—which will be paid for—should address G. H., office of THE IRONMONGER, 42 Cannon Street, London, E. C. The Editor-in-Chief will arrange the purely literary side of the matter, so that those having the requisite knowledge need not hesitate to apply on account of their lack of literary experience. Drawings should be furnished where they can be used advantageously.

SCROLL SAW DESIGNS. Send for New Catalogue.
L. H. RUSSELL, Stratford, Conn.
SEND FOR LIST OF FINISHED PULLEYS, at 4 cts. per pound. ROUGH PULLEYS, at 2 1/2 cts. per pound.
The JOHN T. NOYE MFG. CO., BUFFALO, N. Y.

SHEPARD'S CELEBRATED \$50 Screw Cutting Foot Lathe.
 Foot and Power Lathes, Drill Presses, Scrolls, Saw Attachments, Chucks, Mandrels, Twist Drills, Dogs, Calipers, etc. Send for catalogue of outfits for amateurs or artisans. Address: **H. L. SHEPARD, Agent,** 134 E. Second St., Cincinnati, O.

Syracuse Malleable Iron Works
VARICOCELE Painless sure cure. Book free. Circular Agency, 150 Fulton St., N. Y.

FREE TRIAL. Send for NERVITA, a certain cure for Nervous Debility, Loss of Memory, Headache, etc. Price 10c. per package. Write to A. C. MILLIN, Box 752, CHICAGO, Ill.

WHISKY HABITS
 cured with Double Chloride of Gold. We challenge investigation. 10,000 Cures. Books free. **The LESLIE E. KEELY CO.,** DWIGHT, ILL.

OPIUM

FOREIGN PATENTS.
 Their Cost Reduced.
 The expenses attending the procuring of patents in most foreign countries having been considerably reduced, the obstacle of cost is no longer in the way of a large proportion of our inventors patenting their inventions abroad.
CANADA.—The cost of a patent in Canada is even less than the cost of a United States patent, and the former includes the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, British Columbia, and Manitoba.
 The number of our patentees who avail themselves of the cheap and easy method now offered for obtaining patents in Canada is very large, and is steadily increasing.
ENGLAND.—The new English law, which went into force on Jan. 1st, enables parties to secure patents in Great Britain on very moderate terms. A British patent includes England, Scotland, Wales, Ireland, and the Channel Islands. Great Britain is the acknowledged financial and commercial center of the world, and her goods are sent to every quarter of the globe. A good invention is likely to realize as much for the patentee in England as his United States patent produces for him at home, and the small cost now renders it possible for almost every patentee in this country to secure a patent in Great Britain, where his rights are as well protected as in the United States.
OTHER COUNTRIES.—Patents are also obtained on very reasonable terms in France, Belgium, Germany, Austria, Russia, Italy, Spain (the latter includes Cuba and all the other Spanish Colonies), Brazil, British India, Australia, and the other British Colonies.
 An experience of THIRTY-EIGHT years has enabled the publishers of THE SCIENTIFIC AMERICAN to establish competent and trustworthy agencies in all the principal foreign countries, and it has always been their aim to have the business of their clients promptly and properly done and their interests faithfully guarded.
 A pamphlet containing a synopsis of the patent laws of all countries, including the cost for each, and other information useful to persons contemplating the procuring of patents abroad, may be had on application to this office.
MUNN & CO., Editors and Proprietors of THE SCIENTIFIC AMERICAN, cordially invite all persons desiring any information relative to patents, or the registry of trade-marks, in this country or abroad, to call at their offices, 361 Broadway. Examination of inventions, consultation, and advice free. Inquiries by mail promptly answered.
 Address, **MUNN & CO.,**
 Publishers and Patent Solicitors,
 361 Broadway, New York.
 Branch Office, cor. F and 7th Streets, opposite Patent Office Washington, D. C.