

Advertisements.

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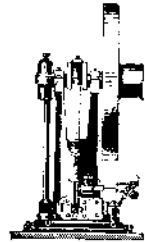
Victor Bicycles!



For pleasure, business, recreation, and for anything you could use a bicycle for. VICTORS ARE BEST! Send for catalogue.

Overman Wheel Co., Makers, Chicopee Falls, Mass.

THE COPYING PAD.—HOW TO MAKE and how to use; with an engraving. Practical directions how to prepare the gelatine pad, and also the aniline ink by which the copies are made; how to apply the written letter to the pad; how to take off copies of the letter. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 438. Price 10 cents. For sale at this office and by all newsdealers in all parts of the country.



OTTO GAS ENGINES.

Over 25,000 Sold. Horizontal Otto Gas Engines. Vertical Otto Gas Engines. Twin Cylinder Otto Gas Engines. Combined Otto Gas Engines and Pumps. Combined Otto Gas Engines and Dynamos.

OTTO GAS ENGINE WORKS, CHICAGO, PHILADELPHIA.

New York Agency, 18 Vesey Street.

THE AMERICAN BELL TELEPHONE CO.

95 MILK ST., BOSTON, MASS.

This Company owns the Letters Patent granted to Alexander Graham Bell, March 7th, 1876, No. 174,465, and January 30th, 1877, No. 186,787.

The transmission of Speech by all known forms of Electric Speaking Telephones infringes the right secured to this Company by the above patents, and renders each individual user of telephones not furnished by it or its licensees responsible for such unlawful use, and all the consequences thereof, and liable to suit therefor.

THE BRIDGEPORT WOOD FINISHING CO. G. M. BREINIG, AGENT, PRINCIPAL OFFICE AT MANUFACTORY NEW MILFORD, CONN. WHEELERS PATENT WOOD FILLER. BREINIGS LITHOGEN SILICATE PAINT. LITHOGEN PRIMER, WOOD STAINS. SILEX FLINT AND FELDSPAR.



\$85 Lovell Diamond Safety \$85

Diamond Frame, Steel Drop Forgings, Steel Tubing, Adjustable Ball Bearings to all Running Parts, including Pedals, Suspension Saddle, Finest material money can buy. Finished in enamel and nickel.

Strictly high grade in every particular. No better machine made at any price.

JOHN P. LOVELL ARMS CO., 147 Washington Street, BOSTON, MASS.

IDEAL MUSICAL BOX

In the latest invention in Swiss Musical Boxes it is the sweetest and most perfect instrument for the parlor. Any number of tunes can be obtained for it. The largest stock of Musical Boxes in America. Send 4 cent stamp for illustrated catalogue.

JACOT & SON, 300 BROADWAY, NEW YORK.



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UNEQUALED For House, Barn, Factory, etc. For Shed or Outbuilding.

Sample free if you state size of roof. 42 West Broadway, New York City.

INDIANA PAINT & ROOFING CO.

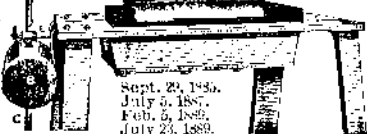
ALUMINUM.—DESCRIPTION OF THE method of manufacturing this metal from cryolite as practiced at the Alliance Aluminum Works at Walsend. With 3 figures. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 731. Price 10 cents. To be had at this office and from all newsdealers.



FORGING AND WELDING BY PETROLEUM AIR BLAST FIRES. All Oil Below Burners.

REPRESENTED BY Wm. Pickett, Son & Co., 170 Lake St., Chicago; and St. Louis, W. S. Collins, 171 Dway, New York; Chilton Jones, Gananoque, Ont., G. M. Smith, Los Angeles, Cal.; Alden Spear's Sons & Co., 3 Central Wharf, Boston; Kalamazoo Spring & Axle Co., Kalamazoo, Mich.

THE AERATED FUEL COMPANY, Springfield, Mass.



THE BACKUS WATER MOTOR. THE BACKUS EXHAUST FAN. With or without Governor. Supplies from hydrant pressure the cheapest power known. A Wonderful Air Mover. For drying all kinds of goods (special Dryers built and results guaranteed).

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For sale by all Photo. Stock Dealers. THE EASTMAN COMPANY, ROCHESTER, N. Y.

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Send 8 cents in stamps for our Woodworkers' Tool Catalogue No. 12, 200 pages, 70 illustrations. The most complete catalogue of these goods ever issued.

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Shipman Automatic Steam Engine. KEROSENE OIL FUEL. STATIONARY and MARINE. 1, 2, 4, 6, and 8 Horse Power Single, and 8, 12, and 16 Horse Power Compound.

WORKING MODELS and Experimental Machinery, metal or wood, made to order by MASON & RAUCH, successors to J. F. Werner, 47 & 49 Centre Street, New York.

H.W. JOHNS' ASBESTOS STEAM PACKING. Boiler Coverings, Millboard, Roofing, Building Felt, Liquid Paints, Etc.

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THE PENNA. DIAMOND DRILL & MFG. CO. BIRDSBORO, PA., Builders of High Class Steam Engines, Diamond Drilling and General Machinery.

FLORIDA STEAM AND HOT WATER HEATERS. FOR WARMING RESIDENCES, STORES, HOTELS, BUSINESS BLOCKS, CHURCHES AND PUBLIC BUILDINGS BY STEAM OR HOT WATER.

A Substitute for Coal or Coke. 100 Gallons of Oil against 2,400 Pounds of Coal. A SYSTEM FOR BURNING CRUDE PETROLEUM.

CUTLER DESK. BEST IN THE WORLD.

SYRACUSE MALLEABLE IRON WORKS. W. B. BURNS PROPRIETOR.

OTIS ELEVATORS

THE STANDARD OF THE WORLD For all kinds of PASSENGER and FREIGHT Elevator Service.

OTIS BROTHERS & CO. General Offices, NEW YORK.

GRAVES ELEVATORS. L. S. GRAVES & SON, ROCHESTER, N. Y.

TO BUSINESS MEN

The value of the SCIENTIFIC AMERICAN as an advertising medium cannot be overestimated. Its circulation is many times greater than that of any similar journal now published. It goes into all the States and Territories, and is read in all the principal libraries and reading rooms of the world.

WIRE ROPE

Address JOHN A. ROEBLING'S SONS, Manufacturer of Wire Ropes, Trenton, N. J., or 117 Liberty Street, New York.

CHEMICAL ICE MACHINES

Steam and Belt Machines to make 700 Pounds Ice in Twenty-four Hours.

C. H. DE LAMATER & CO., Foot West 13th St., New York.

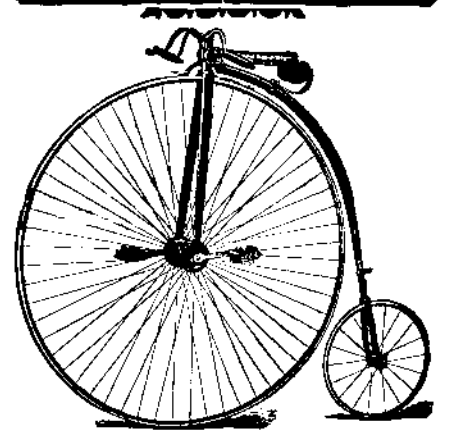
POP SAFETY VALVE WATER RELIEF VALVE IMPROVED STEAM GAGE STEAM ENGINE INDICATOR

Single Bell Chime Whistle, and all instruments used in connection with Steam, Air and Water. Sole Agents for Clark's Lumen Fire Hose. NEW YORK, LONDON, 98 Oliver St. BOSTON, MASS.

JENKINS STANDARD PACKING!

BASE BALL.—A DESCRIPTION OF the great national game of the United States, by an English writer, Jno. Newton Crane, with diagram of the field and 71 illustrations of players.

VOLUNTEER COLUMBIA.



Price, \$90. A high-grade wheel in every respect, with the essential qualities of the Expert Columbia, no metal but steel being used in its construction.

THE BEST MACHINE for the MONEY. We make all the popular style of high grade machines. Illustrated Catalogue free.

POPE MFG. CO., 77 Franklin St., BOSTON. BRANCH HOUSES: 12 Warren St., NEW YORK. 291 Wabash Ave., CHICAGO.

THE PRACTICAL LOW PRICED \$15 TYPEWRITER. Catalogue free. Address Typewriter Department, POPE MFG. CO., Boston, New York, Chicago.

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