

Advertisements.

Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line.

W. L. DOUGLAS \$3 SHOE.

The only \$3 SEAMLESS shoe in the world, without tacks or nails. Finest calf, perfect fit, and warranted.



H.W. JOHNS' ASBESTOS PLASTIC STOVE-LINING.

One of the most desirable articles for the household ever produced. Easily applied by any one at less than half the cost of brick linings.

ASBESTOS COVERING.

For Furnaces, Furnace Pipes, etc. Fire-Proof, Non-Conducting. 83 per cent. of Fuel saved.

THE AMERICAN BELL TELEPHONE CO.

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



LYON & HEALY State & Monroe Sts., Chicago. Catalogue of Band Instruments, Uniforms and Equipments.

PROSPECTUS OF THE Scientific American

FOR 1887. The Most Popular Scientific Paper in the World. Only \$3.00 a Year, including Postage.

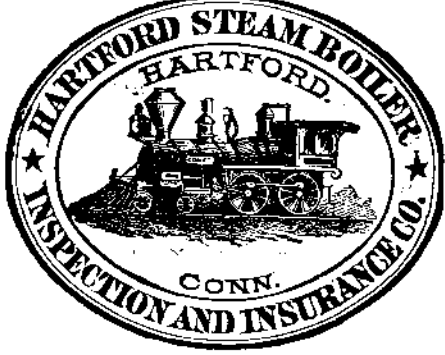
This widely circulated and splendidly illustrated paper is published weekly. Every number contains sixteen pages of useful information.

Terms of Subscription.—One copy of the SCIENTIFIC AMERICAN will be sent for one year—52 numbers—postage prepaid.

THE Scientific American Supplement. This is a separate and distinct publication from THE SCIENTIFIC AMERICAN.

To Foreign Subscribers.—Under the facilities of the Postal Union, the SCIENTIFIC AMERICAN is now sent by post direct from New York.

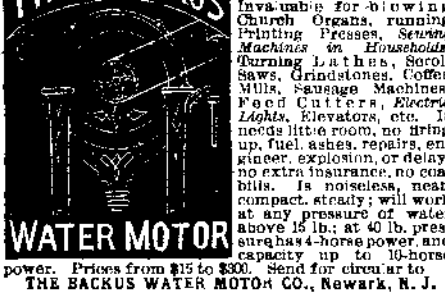
PRINTING INKS. THE "Scientific American" is printed with CEASER JOHNSON & CO.'S INK.



USEFUL BOOKS.

Manufacturers, Agriculturists, Chemists, Engineers, Mechanics, Builders, men of leisure, and professional men.

MUNN & CO., 361 Broadway, New York.



THE BACKUS WATER MOTOR. SUPPLIES FROM HYDRANT PRESSURE.

\$500 Per Month.

To competent Business Men accepting exclusive city agency for sale of our NATIONAL AUTOMATIC GAS-SAVING GOVERNORS.

CHANDLER & FARQUHAR 177 Washington St. BOSTON. New England Agents for BARNES' FOOT POWER MACHINERY.

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.

Hyatt Pure Water Co.



HYATT PURE WATER COMPANY, TRIBUNE BUILDING, NEW YORK.

MAGIC LANTERNS

And STEREOPTICONS, all prices. Views illustrating every subject for PUBLIC EXHIBITIONS.

WEITMYER PATENT FURNACE BOILERS OF EVERY DESCRIPTION. IDE Automatic Engines, Traction and Portable Engines.

THE BRIDGEPORT WOOD FINISHING CO. G.M. BREINIG, AGENT, PRINCIPAL OFFICE A MANUFACTURER NEW MILFORD CONN.

SAWS Wanted 50,000 Sawyers and SAW S Lumbermen to send us their full address for a copy of Emerson's Book of SAWS.

PROSPECTING MINERAL LANDS A SPECIALTY. ARTESIAN WELLS BORED ROUND AND STRAIGHT.

JENKINS BROS. VALVES.

THE ENDORSEMENT OF FIRST-CLASS ENGINEERS AND MECHANICS THROUGHOUT THE COUNTRY has fully demonstrated these valves to possess the following advantages over all other valves now in use.

Shafting and Gearing, Textile Machinery, ELEVATORS, ETC.



THE BEST STEAM PUMP.

Van Duzen's Patent Steam Pump. Incomparable in cheapness and efficiency. Needs no care or skill; cannot get out of order; has no moving parts.



WANTED—Machine for turning Wooden Bowls. Second-hand or new; complete. Address, J. H. STILL, Tilbury Centre, Ontario.

NEGATIVE FREE. On receipt of two 2 cent postage paid, to any address, a sample American Film Negative and full description of the newly perfected process of making film negatives.

JENKINS BROS. VALVES.

THE ENDORSEMENT OF FIRST-CLASS ENGINEERS AND MECHANICS THROUGHOUT THE COUNTRY has fully demonstrated these valves to possess the following advantages over all other valves now in use.

McINTOSH, SEYMOUR & CO. AUBURN, N. Y. Automatic Cut-off Engines.

Economy in Fuel Consumption, Close Regulation, Great Durability and Simplicity, Perfect Workmanship and Design.