

Advertisements.

The value of the SCIENTIFIC AMERICAN as an advertising medium cannot be over-estimated. Its circulation is ten times greater than that of any similar journal now published.

RATES OF ADVERTISING. Back Page.....\$1.00 a line. Inside Page.....75 cents a line.

DECALCOMANIE - \$1's worth or over, & instructions, mailed. W. A. KINSON & Co., 122 Broadway.

\$10 A Day for all. Stencil tool, samples free. Address A. J. FULLAM, Springfield, Vt.

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YOU CAN SOLDER your own tin ware without a soldering iron by buying one bottle of Wilson's Prepared Solder.

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PATENTS COMBINING ABSOLUTE Practicality, Usefulness, and Economy, introduced and sold on terms entirely satisfactory to all.

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PATENTS OF PRACTICAL UTILITY and Real Merit negotiated on the most favorable terms.

R. BALL & CO., Worcester, Mass. Manufacturers of the latest improved patent Planers, Woodworth's, and Gray & Wood's Planers.

Wrought Iron Pipe for Steam, Gas and Fireworks, etc. JOHN ASHCROFT, 59 John St., N. Y.

Sheet and Roll Brass, BRASS AND COPPER WIRE, German Silver, etc., Manufactured by the THOMAS MANUFACTURING CO.

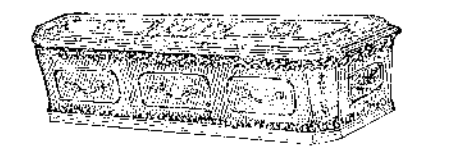
FOR STEAM ENGINES, BOILERS, SAW MILLS, Cotton Gins, address the ALBERTSON AND DOUGLASS MACHINE CO., New London, Conn.

STOCKS, DIES, AND SCREW PLATES, Hooks, and other Clamps. JOHN ASHCROFT, 59 John St., New York.

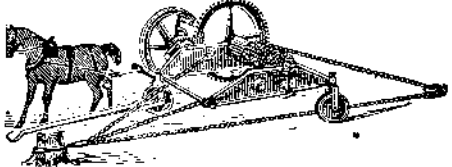
PORTABLE STEAM ENGINES, COMBINING the maximum of efficiency, durability, and economy with the minimum of weight and price.

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Dye's Patent Stump Extractor and Building Remover. Pronounced by competent judges and Agricultural Fairs to be superior to any other machine ever known or exhibited.

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TALLOW LUBRICATORS, and a General assortment of Brass Work, of superior quality at low prices, at Cincinnati Brass Works.

WOODWORTH PLANERS A SPECIALTY - From new patterns of the most approved style and workmanship.

Sault's Patent FRICTIONLESS Locomotive Valves, etc. Applied to all; requires no changes.

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IMPROVED - Tapley's Patent Self-Feeding Hand, Foot, or Horse Power Rip, Cross Cut, Scroll Saw Machines Combined. Prices Reduced. Send for illustrated circular.

STONE'S RIVER UTILITY WORKS, of Murfreesboro, Tenn. Manufacture large quantities of Red Cedar Wooden Ware - Churns, Tubs, Pails, Chests, etc.

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NEW BOOKS FOR CARPENTERS - ARCHITECTURE IN DETAIL. MODERN AMERICAN ARCHITECTURE. THE PRACTICAL STAIR BUILDER.

THE 21ST ANNUAL EXHIBITION OF American Manufactures & the Mechanic Arts, Under the direction and Superintendence of the MARYLAND INSTITUTE.

FIRE EXTINGUISHER ALWAYS READY FOR INSTANT USE. Indorsed by the Government, the entire Insurance Companies, and all Chiefs of Fire Departments.

STEAM-BOILER Leaking Stopped. No Hamburg. Receipt \$2. A. Belchambers, Ripley, N. Y.

BOILER FELTING SAVES TWENTY-FIVE PER CENT OF FUEL. JOHN ASHCROFT, 50 John St., New York.

\$325 A MONTH and expenses! 28 new articles. H. B. SHAW, Alfred, Me.

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Brick Machine. LAFLE'S NEW IRON CLAD has more advantages combined in one machine than any other ever invented. It makes common brick of very superior quality.

PLATINUM. H. M. Raynor, 749 Broadway, N. Y.

LE COUNT'S PATENT HOLLOW LATHE DOG is Light, thin, and of at least Double the Strength of others. They have Good Steel Screws, well fitted and Hardened.

FOR BRASS LATHES and all Machinery connected with Brass Finishing and Fitting Line Improved Lathes for making large valves, etc.

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WOOD-WORKING MACHINERY, The SUBSCRIBER is the New York Agent for all the Manufacturers, and sells at their prices.

A BOOK THAT EVERYBODY SHOULD HAVE. WELLS' EVERY MAN HIS OWN LAWYER AND BUSINESS FORM BOOK.

Is a Complete and Reliable Guide in all matters of Law and Business Transactions for EVERY STATE IN THE UNION. THE ENTIRE LEADING PRESS OF THE COUNTRY unqualifiedly endorse the work.

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CHARLES A. SEELY, CONSULTING Chemical Analytical Chemist, No. 25 Pine Street, New York. Assays and Analyses of all kinds. Advice, Instruction, reports, etc., on the useful arts.

Philadelphia Advertisements.

FOR SALE - The Patent Right to Manufacture Paper from the Hibiscus Plant. Address 44 STUART & PETERSON, Philadelphia, Pa.

ROBERT McCALVEY, Manufacturer of HOISTING MACHINES AND DUMB WAITERS. 26 13th 602 Cherry St., Philadelphia, Pa.

Woodworth Planers. Woodworking Machinery generally. Manufactured corner Fifteenth and Penn Avenue, Phila. POWER & DAVIS.

Bridesburg Manf'g Co., Office No. 45 North Front Street, PHILADELPHIA, Pa. Manufacture all kinds of Cotton and Woolen Machinery including their new Self-Acting Mules and Looms.

SMITH'S IMPROVED WOODWORTH PLANER AND MATCHER, Sash and Door, Molding, Mortising, and Tenoning Machines, Scroll Saws, Saw Mills, etc., at reduced prices. Address CHAS. H. SMITH 135 North 3d St., Philadelphia, Pa.

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POWERLOOMS, Improved Drop Box Spooling, Winding, Reaming, Dyeing, and Sizing Machines, Self-Acting Wool Scouring Machines, Hydra Extractors, etc., at reduced prices. Address CHAS. H. SMITH 135 North 3d St., Philadelphia, Pa.

MERRICK & SONS, Southwark Foundry, PHILADELPHIA, Pa. MANUFACTURE Steam Hammers of Nasmyth and Davy styles.

Apparatus for Making Sugar from Beet Root & Cane Juice, and for Refineries working Sugar & Molasses Gas Machinery of every description. Oscillating Engines having

SLIDE VALVES worked by ECCENTRIC. Patterns on hand of sizes - 3x10, 10x12, 14x14, 18x15.

AMERICAN TINNED SHEET IRON. Coating uniform over the entire surface, by an entirely new and patented process. All sizes and gages on hand and made to order.

PAGE'S GREAT WATER FLAME Coal, Patented Lime Kiln will burn No. 1 finishing lime with any coal or wood, mixed or separate, in same kiln. Rights for sale by C. D. PAGE, Rochester, N. Y.

OIL! OIL!! OIL!!! FIRST PREMIUM.....PARIS, 1867 Grand Silver Medal and Diploma!

WORLD'S FAIR - London, 1862. TWO PRIZE MEDALS AWARDED. PEASE'S IMPROVED OILS!

Engine, Signal, Lard, and Premium Petroleum is the Best Made for Railroads, Steamers, and for Machinery and Burning.

F. S. PEASE, Oil Manufacturer, Nos. 61 and 63 Main Street, Buffalo, N. Y. N. B. - Reliable orders filled for any part of the world.

BUERK'S WATCHMAN'S TIME DETECTOR. Important for all large Corporations and Manufacturing concerns - capable of controlling with the utmost accuracy the motion of a watchman or pattern as the same reaches different stations of his beat.

FABER du FAUR, Engineer and Metalurgist, 39 Park Row, New York. Calculations on Motive Power, Strength of Structures, and other mechanical problems. Machinery selected.

WANTED -- Agents. \$75 to \$200 per Month, Everywhere, male and female, to introduce the GENUINE IMPROVED COMMON SENSE FAMILY SEWING MACHINE.

CHARLES A. SEELY, CONSULTING Chemical Analytical Chemist, No. 25 Pine Street, New York. Assays and Analyses of all kinds. Advice, Instruction, reports, etc., on the useful arts.

CAN I OBTAIN A PATENT? - For Advice and instructions address MUNN & CO., 37 Park Row, New York for TWENTY YEARS Attorneys for American and Foreign Patents. Careless and Patent applications prepared. The SCIENTIFIC AMERICAN \$4 a year \$6.00. Patent rights have been prepared by M. & Co.

LES INVENTEURS - Avis important. Les inventeurs non familiers avec la langue Anglaise, et qui préfereraient nous communiquer leurs inventions en Français nous adresser dans leur langue natale. Evitez vous un dessin et la description concise pour nous adresser. Faites communiquer vos projets en confiance. MUNN & CO., Scientific American Office No. 37 Park Row New York