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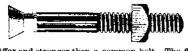
**GVERMAN WHEEL CO.** 

A. G. SPALDING & BROS., Special Agents,

COLD FORGED PRODUCT.

# Fluted Tire Bolt

Patented Nov. 11, 1890; Oct. 20, 1891.



is stiffer and stronger than a common holt. The fluted shank prevents the bolt from turning in the rim and tire.

COLD **FORGED** 

MACHINE SCREWS STOVE BOLTS LOCK CAP SCREWS SIDE KNOB SCREWS THREADED WIRES

### AMERICAN SCREW COMPANY. PROVIDENCE, R. I.



THE Motor of 19th Century can be used any place, to do any work, and by any one. No Boiler! No Steam! No Ashes! No Gauges! No Engineer! A perfectly safe Motor for all places and purposes. Cost of operation about one cent an hour to each indicated horse power. For circulars, etc., address er. For circulars, etc., addres CHARTER GAS ENGINE CO. P. O. Box 148. Sterling, III

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Poole Bros. Celestial Planisphere and Celestial Handbook just published.
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### For Power Produced, our **GAS ENGINE**

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## Your Wife's Watch

ought to be equal to yours; at least.

Her minutes cost her more than yours and bring her less. You see that at dinner time, at supper time, at breakfast time, and—well, all the time. Haven't you learned her needs? She needs a watch that she can risk anywhere; accurate, stylish and genuine—and not expensive: the new, quick-winding Waterbury. Handsome as a hundred dollar watch, though it costs only \$15 down to \$4.

It is cased in gold, filled, coin-silver, etc. It is stem-winding and setting, a jeweled movement. It may save a costlier one Every, involve keeps keeps this watch in all styles.



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 forty-five years experience, and now have innequaled facilities for the preparation of Patent Prawings, 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 intrusted to them is done with special care and promptness, on very reasonable terms.

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# Prevents Office Headache. Mistakes in Addition.



Solves with great rapidity and absolute accuracy all arith-metical problems.

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60% of time in doing the work. And all the time look-

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Forward.

FELT & TARRANT MFG. CO., 52-56 Illinois St., Chicago.

# KODAK

Our New Films are giving perfect satisfaction They are highly sensitive, and repeated tests show that they retain this sensitiveness as well as glass plates. No other films are so free from imperfections; none so uniform; none so reliable Our film doesn't frill.

Eastman Kodak Co.,

Rochester, N. Y.

Boiler Coverings, Millboard, Roofing, Building Felt, Liquid Paints, Etc. DESCRIPTIVE PRICE LIST AND SAMPLES SENT FREE. H. W. JOHNS MFG. CO., 87 Maiden Lane, N.Y.



AIR SHIPS, Hydrogen Generators, Aerial Apparatus, and Patent Gas Proof Fabrics Prof. Carl E. Myers, Balloon Farm, Frankfort, N. Y.



CAN BE WORKED LIKE A METAL. DELAWARE HARD FIBRE CO. WILMINGTON DEL.



# The Smith Premier Typewriter

Embodies the most Progressive Mechanical Principles.

All the Essential Features Greatly Perfected.

Perfect and Permanent Alignment.

Easiest Running, and Nearly Silent.

All type cleaned in Ten Seconds without Soiling the Hands. The Smith Premier Typewriter Co., Syracuse, N. Y., U. S. A. We have 20 branch offices in the principal cities throughout the United States.

IT WILL CONVINCE YOU OF OUR ABILITY TO SUPPLY TOILET PAPER FOR LESS MONEY THAN IT CAN BE OB-TAINED ELSEWHERE A.P.W.PAPER CO. ALBANY, NY.

Goods have been imitated, but never equaled. They are beyond comparison. Why? Because they are thoroughly reliable, practical, durable, and are never misrepresented. They are all guaranteed, and a trial will prove and convince you that what we say is the truth. Supplied by leading dealers throughout the United States. Send for catalogue of Valves, Whistles, Lubricators, Oil and Grease Cups, etc., and mention SCI. AM. The Lunkenheimer Company, successor to THE LUNKENHEIMER BRASS MFG. CO., Cincinnati, O., U. S. A.

ACTING WANTED DIR FINE TOOLS IN EVERYSHOP CATALOGUE G.H.BESLY& CO.

PATENT JACKET KETTLES Plain or Porcelain Lined.
Tested to 100 lb. pressure. Send for Lists.
BARRON. AVERY CO.,
S. Front & Reed Streets, Phinadelphia, Pa.



SCIENTIFIC AMERICAN SUPPLE-MENT. Any desired back number of the SCIENTIFIC AMERICAN SUPPLEMENT can be had at this office for 10 cents. Also to be had of newsdealers in all parts of the country.

# GENTLEMAN'S



YOUR OWN ENGINEER. Launches 19 to 60 feet in length, with automatic chinery. No Smoke. No Engineer. No Danger. No Dirt.

PADDILE YOUR OWN CANOE.
Family Row and Sail Boats. Fishing and Hunting Boats. Manufactured by

THOMAS KANE & CO., Chicago, III.

Send for catalogue specifying line desired.



# **ELECTRICAL** \* MINING \* MACHINERY

Electric Mine Locomotives, Electric Drills, Electric Coal Cutters, Electric Pumps, Electric Hoists.

WE ARE THE ONLY HOUSE IN THIS COUNTRY FURNISHING ELECTRICAL MINING MACHINERY

### GENERAL ELECTRIC COMPANY, DISTRICT OFFICES:

Patents in all the principal countries of the world.

MUNN & CO., Solicitors of Patents,

361 Broadway, New York.

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All business outside the U. S. transacted by Thomson-Hous on International Electric Co., 44 Broad St., New York

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803 Atlantic Avenue.

803 Atlantic Avenue.

804 Boston, Mass.

505 Arch Street.

906 Arch Street.

907 Atlantic Avenue.

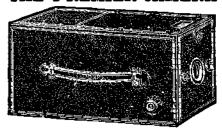
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IS THE BEST IN MARKET.

Simple of Manipulation. Plates or Films are used. The Shutter is always set.

### PRICE \$18.00.

Send for Catalogue and copy of Modern Photography. WE MAKE ALL KINDS OF CAMERAS.

ROCHESTER OPTICAL COMPANY, 14 S. Water St., ROCHESTER, N. Y.



# THE FOX SAFETY RAZOR.

adjustable blade; sil-ver plated frames. Price \$2 by mail, free. E. LOTHAR SCHMITZ, 92 & 94 Reade St., New York.

# The American Bell Telephone Company 125 MILK ST., BOSTON, MASS.

This Company owns the Letters Patent No. 186,787, granted to Alexander Graham Bell, January 30, 1877, the scope of which has been defined by the Supreme Court of the United States in the following terms:

"The patent itself is for the mechanical structure of an electric telephone to be used to produce the electrical action on which the first patent rests. The third claim is for the use in such instruments of a diaphragm, made of a plate of iron or steel, or other material capable of inductive action; the fifth, of a permanent magnet constructed as described, with a coil upon the end or ends nearest the plate; the sixth, of a sounding box as described; the seventh, of a speaking or hearing tube as described for conveying the sounds; and the eighth, of a permanent magnet and plate combined. The claim is not for these several things in and of themselves, but for an electric telephone in the construction of which these things or any of them are used."

This Company also owns Letters Patent No. 463,569, granted to Emile Berliner, November 17, 1891, for a Combined Telegraph and Telephone; and controls Letters Patent No. 474,231, granted to Thomas A. Edison, May 3, 1892, for a Speaking Telegraph, which cover fundamental inventions and embrace all forms of microphone transmitters and of carbon telephones.

