

Advertisements.

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COLD FORGED PRODUCT.

"Rogers' Drive Screw."

Patented May 10, July 19, 1887;
July 10, 1888;
July 19, 1892.

It is cheaper than a common screw, and, being cold forged, the entire surface has a metallic skin. For applying steps to Electric Light Poles, it has no superior.

Send for samples to

AMERICAN SCREW CO.
PROVIDENCE, R. I.

THOMPSON IMPROVED INDICATOR

Manufactured solely by
American Steam Gauge Co.
5,000 IN USE.
Adopted by the U. S. Navy on all the government cruisers and gunboats to be built.
Also Manufactured by
POP SAFETY VALVES,
STEAM PRESSURE GAUGES, ETC.

34 Chardon Street, Boston, Mass.

OIL WELL SUPPLY CO.

91 & 92 WATER STREET,
PITTSBURG, PA.
Manufacturers of everything needed for
ARTESIAN WELLS
for either Gas, Oil, Water, or Mineral Tests.
Boilers, Engines, Pipe, Cordage,
Drilling Tools, etc. Illustrated
catalogue, price lists, and dis-
count sheets on request.

LIFE SAVING DEVICES.—A COL-
lection of suggestions of devices for communicating be-
tween the shore and stranded vessels, offered to the
London Daily Graphic by various correspondents. With
100 illustrations. Contained in SCIENTIFIC AMERICAN
SUPPLEMENT, Nos. 848, 849, 850, 851, 852,
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864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874,
875, 876, 877, 878, 879, 880, 881, 882, 883, 884,
885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895,
896, 897, 898, 899, 900, 901, 902, 903, 904, 905,
906, 907, 908, 909, 910, 911, 912, 913, 914, 915,
916, 917, 918, 919, 920, 921, 922, 923, 924, 925,
926, 927, 928, 929, 930, 931, 932, 933, 934, 935,
936, 937, 938, 939, 940, 941, 942, 943, 944, 945,
946, 947, 948, 949, 950, 951, 952, 953, 954, 955,
956, 957, 958, 959, 960, 961, 962, 963, 964, 965,
966, 967, 968, 969, 970, 971, 972, 973, 974, 975,
976, 977, 978, 979, 980, 981, 982, 983, 984, 985,
986, 987, 988, 989, 990, 991, 992, 993, 994, 995,
996, 997, 998, 999, 1000. To be had
at this office and from all newsdealers.

WM. GRAVER TANK WORKS,

(INCORPORATED.)
Manufacturers of Iron and Steel
STORAGE TANKS.
OFFICE,
3d Floor, Rookery Bldg.
CHICAGO, ILL.

Drive the minutes

or they will drive you.

Don't put off the comfort and solid satisfaction you may gain for yourself or some one you want to make happy; by an accurate jeweled time-keeper, handsome and genuine: It is the new, quick-winding Waterbury watch. \$4 to \$15.

The Newburyport Herald man says of his Waterbury: "It is a better time-keeper than a hundred-dollar watch a friend of mine bought some months ago."

All jewelers sell it in forty styles.

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In this line of business they have had forty-five years' experience, and now have unexcelled 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 intrusted to them is done with special care and promptness, on very reasonable terms.

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MUNN & CO., Solicitors of Patents,
361 Broadway, New York.
BRANCH OFFICES.—Nos. 622 and 624 F Street, Pa-
cific Building, near 7th Street, Washington, D. C.

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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, N.Y.

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The Columbus Model Folding Kodaks combine the desirable features of a complete view camera with the compactness of a Kodak.

Recent Improvements include the iris diaphragm shutter with pneumatic release, double swing back and sliding front. Can be used with long focus or wide angle lenses.

Easily adapted to stereoscopic work. Made in three sizes: 4 x 5, 5 x 7 and 6 1/2 x 8 1/2.

EASTMAN KODAK CO.

Send for
Catalogue.

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42 to 50 H.P. THE Motor of 19th Century
Can be used anywhere, to do any work, and by any one. No Boiler! No Fire! 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
CHARTER GAS ENGINE CO.,
P. O. Box 146, Sterling, Ill.

PATENT JACKET KETTLES

Plain or Porcelain Lined.
Tested to 100 lb. pressure. Send for Lists.
BARROWS-SAVERY CO.,
S. Front & Reed Streets, Philadelphia, Pa.



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.

ZINC ETCHING
HALFTONE PROCESS

Printer

OF
Engravings
MAGAZINES,
BOOKS,
CATALOGUE WORK
A SPECIALTY
SOUVENIRS.

A. H. KELLOGG

SCOTT & BOWNE BUILDING
New York.

ASTRONOMY

Poole Bros. Celestial Planisphere and
Celestial Handbook just published.
For descriptive circular address
POOLE BROS., CHICAGO, ILL.

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GAS AND GASOLINE
ENGINES.
1 1/2 to 100 h. p. Can
be used in cities or
in country independent
of gas works
or gas machines.
No Boiler,
No Danger,
No Engineer.
OTTO GAS ENGINE WORKS, PHILADELPHIA.

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Small Articles Manufactured in Quantities.
Inventions perfected and developed. Working in Alu-
minum a specialty. S. P. Deussen, Designer and
Builder of Fine Machinery, 143 Centre St., New York.

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MOTORS, and
DYNAMOS,
from 1-1/2 h. p. to 15 h. p.
Belts, Annunciators, Batteries,
etc. No Toys, but Standard
Goods. Complete illustrated
catalogue sent on receipt of
25c. postage.
The Holtzer-Cabot Electric Co.
94 Franklin St., Boston, Mass.

H.W. JOHNS' ASBESTOS STEAM PACKING

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

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.

The McCONNELL
Germ Proof Filters
REMOVE MICROBES
—AND—
All Kinds of Disease Germs.
Is a Filter and Cooler Combined.
The ice as it melts is filtered.
No other gravity filter does this.
The McConnell Filter Co.
BUFFALO, N. Y.

Electric Motors

FOR ALL POWER PURPOSES.
MILLS, FACTORIES, SHOPS, LOCOMOTIVE WORKS, ETC., OPERATED BY OUR
ELECTRIC MOTORS.

Are Cleaner, Healthier, Give Greater Returns for Outlay, than those Operated by Other Methods.
PROFIT—ECONOMY.

GENERAL ELECTRIC COMPANY,
DISTRICT OFFICES:

44 Broad Street..... New York.
173 and 175 Adams Street..... Chicago, Ill.
Fifth and Race Streets..... Cincinnati, O.
Equitable Building..... Atlanta, Ga.
15 First Street..... San Francisco, Cal.
All business outside the U. S. transacted by Thomson-Houston International Electric Co. 44 Broad St. New York

ENGINES, BOILERS & MACHINE TOOLS.
Complete outfits furnished. Send for pri-
ces and 300 p. catalogue. W. P. DAVIS, Rochester, N. Y.

Can't Help
KEEPING AHEAD
Left to itself upon the
coast, Columbia trueness
passes everything.
All about Columbias in Book about Col-
umbias, free on application to Columbia agen-
cies, or by mail for two two-cent stamps.
Pope Mfg. Co., Boston, New York, Chicago.

ELECTRO MOTOR. SIMPLE. HOW TO
make. By G. M. Hopkins.—Description of a small electro
motor devised and constructed with a view to assisting
amateurs to make a motor which might be driven with
advantage by a current derived from a battery, and
which would have sufficient power to operate a foot
lathe or any machine requiring not over one man power,
with 11 figures. Contained in SCIENTIFIC AMERICAN
SUPPLEMENT, No. 641. Price 10 cents. To be had at
this office and from all newsdealers.

STEVENS PATENT
SPRING INSIDE CALIPERS
Leader, No. 72.
Price, by mail, postpaid.
4 inch.....\$0.75 | 5 inch.....\$0.80 | 6 inch.....\$0.85
These goods exact for neatness and fine finish,
any other make. Ideal and Leader Spring Di-
viders and Calipers, Ideal Surface Gauges,
Depth Gauges, and Fine Machinists' Tools.
Illustrated catalogue free to all.
J. STEVENS ARMS & TOOL CO.,
P. O. Box 280 Chicopee Falls, Mass.

WELL DRILLING MACHINERY,
MANUFACTURED BY
WILLIAMS BROTHERS,
ITHACA, N. Y.,
Mounted and on Sills, for
deep or shallow wells,
with steam or horse
power.
Send for
Catalogue.
ADDRESS
Williams Brothers
ITHACA, N. Y.

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 mechan-
ical 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 in-
ductive 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 de-
scribed; the seventh, of a speaking or
hearing tube as described for conveying
the sounds; and the eighth, of a perma-
nent magnet and plate combined. The
claim is not for these several things in
and of themselves, but for an electric tel-
ephone in the construction of which these
things or any of them are used."

This Company also owns Letters Pa-
tent No. 463,569, granted to Emile Ber-
liner, 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 funda-
mental inventions and embrace all forms
of microphone transmitters and of car-
bon telephones.

IMPROVED CHARTER
2 TO 50 ACTUAL H.P.
GAS ENGINES
USING GAS, COAL GAS, NATURAL GAS,
SAFETY VALVE, PRODUCE GAS
RELIABLE, ECONOMICAL, SIMPLE
DELICATE PARTS
H.W. CALDWELL & SON,
SOLE MFG'S.
WASHINGTON & UNION STS. CHICAGO, ILL.

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