Founded by Mathew Carey, 1785.

HENRY CAREY BAIRD & CO. STRIAL PUBLISHERS, BOOKSELLERS & IMPOR 810 Walnut St., Philadelphia, Pa., U. S. A.

To Our New and Revised Catalogue of Practical and Scientific Books, 92 pages, 800; a Catalogue of Books on Steam and the Steam Engine, Machinery, etr.; a Catalogue of Books on Sanitary Science. Gas Fitting, Plumbing, etc., and our other Catalogues and Circulurs, the whole covering every branch Science applied to the Arts, sent free and free of postage to any one in any part of the world who will furnish his address.

ELECTRICAL Thousands are successful ENGINEERING thons and salaries studyENGINEERING thons and salaries studyIng at home by our mail
TAUGHT system. We teach Electrical EaBY MAIL ing, Mechanical EngineerBY MAIL tric Lighting, Shorr Popular
Electrical Course, Elementary Mathematics, etc., by mail. Study in spare time only institute endorsed by Thomas A. Edison and others. Catalogue free.
ELECTRICAL ENGINEER INSTITUTE.
Dept. A, 248-242 W. 23d Street, New York.

Why Make Rubber Stamps?

Chicago. Simple process. Large profits. Circulars free, Barton Mfg. Co., Dept. A, 338 B'way, New York, U. S. A.



Edw Miller & Co., Meriden, Ct.

Mannactory Established 1761.

LEAD PENCILS, COLORMD PENCILS, SLATE
PENCILS, WRITING SLATES. STEEL PENS, GOLD
PENS, INKS, PENCIL CASES IN SILVER AND IN
COLD, STATIONERS' RUBBER GOODS, RULERS,

COLORS AND ARTIST'S MATERIALS.

78 Reade Street. - - New York, N. Y. Manufactory Established 1761.

The Ideal Hunting Shoe

The concentrated product of lifty years of shoemaking skill. Ten inches nigh, Bellows tongue, uppers gray color, soft as a glove, tough as steel, cannot barden. The best storm proof shoe ever placed on sale for Klondike, miners, surveyors, engineers, and any one requiring perfect toot protection. Thousand of pairs sold to satisfied patrons. Illus. Catalogue Free.

M. A. SMITH & SON, Manufacturers, 29 and 31 N.
13tb St., Philadelphia. Pa.



STUDY BICYCLES

The particular feature that distinguishes the

MONARCH Bevel-Gear CHAINI ESS

from other bicycles is its continuous frame connection, enclosing rear gear. A feature not found on any other wheel.

The frame is what a bicycle depends upon for strength. The Monarch frame is the strongest made. People who are riding Monarchs investigated and found "the quality" in the wheel.

Call and we will be pleased to show and explain their advantages. Write for our novel, interesting and instructive catalogue.

Monarch Bevel-Gear Chainless, \$60 Chain Models, - - - \$25 to \$40

MONARCH HEADQUARTERS, NEW YORK, N. Y. CHICAGO, ILL.

н		
J	Washingmachine, J. Arnold	647,433
H	Washing machine, H. Kleiman	647,306
	Water elevating and carrying apparatus, H. H.	
	Harless	646,984
	Water heater, R. Schlumberger	647, 157
ı	Waterworks system, P. J. Moran	
ı	Weighing and bagging machine, A. C. Bosworth.	
	Weighing machine, liquid, F. Handy	
	Well drilling machine, F. R. Wiedner	647,343
	Wheel. See Car wheel. Fifth wheel. Grinding	
	and polishing wheel. Traction wheel.	
ı	Wheel rims and means for holding covers of	
	pneumatic tubes thereto, J. Cottrell	647,077
	Winding machine, ball, J. R. Gammeter	647,256
.	Windmill regulator, automatic, Bruns & El-	
1	dredge	646.950
1	Window guard, H. Levy	647.419
4	Wire stretcher and tightener, P. E. Gold	
ı	Woven fabric, W. T. Smith	647.335
1	Yoke center and pole tip, combined neck, J. G.	
1	Rieff	€47,278

DESIGNS.

Н	NEG II COSS	
- 1	Badge, N. S. Boynton	32,462
-1	Relt hody, J. Livingston	32 521 1
-1	Bolster, body, G. G. Floyd	32.504
П	Bolster, body, G. G. Floyd. Bottle, S. R. Kelly.	32,471
. 1	Bettle, F. Schilling	32.470
П	Bracket roller E & Hartshorn	32 493
1	Bracket, roller, E. F. Hartshorn	32.508
	Butter cutting machine die, M. F. Meehan Button, collar, L. F. Adt Cigar pouch, J. J. Dittgen	39 188
П	Button, collar, L. F. Adt.	32.464
.	Cigar pouch . L. I. Dittgen	32 476
. 1	Elevator nozzle. hydraulic, G. 11. Evans	32 490
. 1	Elevator throat, hydraulic, G. H. Evans	32.500
.	Eve. F. P. Herrick	32.465
- 1	Eye, F. P. Herrick	32.522
П	Faucet handle, A. S. Hills	32,496
П	Faucet handle, A. D. Levy	32.495 32,487
П	Faucet handle, A. D. Levy	32,487
-1	Fruit picker, M. D. L. Hartley	32.489
П	Game board, E. F. Adams	32.518
-1	Heel plate, F. A. Spell	52.519
П	Heel plate, F. A. Snell. Hod. wood, C. T. McCarroll	32,491
П	Husking pin, R. F. Clark	32,483
Н	Inhalation apparatus easing, W. C. Clark	32.479
н	Inhalation apparatus feed pipe, W. C. Clark	32.480
Л	Husking pin, R. F. Clark. Inhalation apparatus casing, W. C. Clark. Inhalation apparatus feed pipe, W. C. Clark. Injectors, casing for blanks for double or com-	. 1
П	posite, Park & Williston	32,561
	Injectors, casing for double or composite, Park &	
П	Williston	32.502
П	Jar or receptacle, E. K. Leffingwell	32.472
	Lamp body, portable electric, J. S. Meade	32,507
	Lamp, vehicle, A. H. Atwood	32,506
П	Last, shoe, F. P. Olds	32.520
11	Machine leg, A. J. Gillespie	32,510
Н	Necktie fastener, F. J. Callaghan	32.466
П	Nut locking washer, .l. Dickason	32,492
П	Organ case, E. Eliniger	32.512
1	Piano case, P. G. Garber32,513 to	32,517
Л	Pin, L. M. Zell	32.4ti3
ч	Organ case, B. Ehniger. Piano case, P. G. Garber. Pin, L. M. Zell Pipe cleaner, F. J. Harding, Jr. Pitcher, H. Brunt. Plate or similar art icle. C. J. Ahrenfeldt 32.468,	32,482
П	Pitcher, H. Brunt	32.473
- 1	Plate or similar article, C. J. Abrenfeldt32.468,	32,469
- 1	Press frame, N. Du Brul. Rein supporter, T. W. McKelvy Scale beam. W. F. Stimpson.	32.511
П	Rein supporter, T. W. McKelvy	32.494
ч	Scale beam. W. F. Stimpson	32.503
- 1	Scraper, G. C. Bowles	32,484
-1	Spatula, E. C. Berger	32,481
- 1	Spoons, forks, ladies, etc., handle for, A. F. Jack-	20 445 8
- 1	Son.	
- 1	Spraying nozzle casing or cap, J. A. Watson	32,498
- 1	Staple extractor, M. Searls.	32,486 32,474
- 1	Statue, F. D. Higbee. Table leg brace piece, J. Gilson	20 500
П	Though partificial incious A (II Class	99 450
- 1	Tooth, artificial incisor, A. T. Glew.	20 400
П	Towel rack member, Reeves & Johnson Truck, vehicle, L. S. Buffington Twine holder, J. A. Thompsou Valve body, P. E. Apgar Weed chain hook, C. F. Heine	22 505
	Twine holder I . Thompson	29.475
П	Value holds, D. M. Annus	20 407
0	Wood abuin book C & Hoine	29 496
П	Work bag, M. J. Elliott	20 455
	WOLK DAR, M. J. EINOLL	04,411

TRADE MARKS

TRADE MARKS.	- 1
Antidote for malaria, Dr. Patton Medicine Com-	- 1
pany	34,473
Research Company	34.474
Canned corn. R. F. & G. H. Mitchell	34,477
Cleaning purposes, powder for, C. V. Boughton,	
34.465. Compounds for treatment of the skin and mucous	
membranes, 'I'. Wolfram Corsets and underwaists. ladies', Bay State Corset	34,468
Company Cotton goods, certain named, H. Norden. 34,45 to Elastic textile goods, Hub Gore Makers	34.452
Cotton goods, certain named, H. Norden. 34,45 to	34.451
Filler compounds or surfaces, Flood & Conklin	34,434
Company	34.467
Flour, F. G. Stritzinger & Company	34.464
Foods, certain named, J. Carter & Company Golf supplies and sundries, certain named, Na-	34.463
tional Cement and Rubber Manufacturing	
Company	34,455
Hair curlers, H. J. Rumrille Horse boots, D. L. Campau	34.455
Lithographs, certain named real and imitation.	
Lithotone Colortype Company	34,443
Meat extract, albumen, and preparations of al- bumen, Toril Eiweiss & Fleisch Extract Com-	
pany, Gesellschaft mit Beschrankter Haf-	
tung	34,460
R. Kovacic	34,471
Medicinal preparation for certain named uses.	
Soule Medical Company	34,472
Oat food Washburn Croshy Company	34,462
Oat food, Washburn, Crosby Company Pencils. penholders, and steel pens, lead, Eagle	01,102
Pencil Company Pins, hair pins, and hooks and eyes, Sterling Pin	34,444
Company	34.457
Printing presses and certain named printers' sun-	
plies, Liberty Machine Company	34.475
dell	34,470
Remedy for certain named diseases, Koch Lung	34.469
dell. Remedy for certain named diseases, Kocb Lung Cure Company. Silver artistes and tableware, sterling, W. B. Kerr	
& Company	34,442
Company	34.476
Trousers, excepting rubber or waterproof trousers, men's, J. Bennett & Company	24 45 2
Whisky, Wilson Distilling Company	34,459

LABELS.

ı		
	"C. Barthelemy's Herbal Extract," for a medicine,	
ı	L. Wolf	7,471
I	ters, H. C. Paulson	7,463
I	Company	7.467
ı	"Craw & Ford's Compounded English Mustard." for a mustard, William H. Crawford Company.	7.473
I	" Daylight Matches." for matches. Safe Harbor	
ĺ	Match Company "Duck's Back Waterproof Fiber," for wrapping	1.9719
	paper. Mallalieu & Company "Eureka Hair Restorative," for a hair restorer,	7,463
	B. M. Riordan. " Prairie Baking Powder," for baking powder, W.	7,410
	W. Walker	7.472
	"Railway Ticket." for cigars, J. Simon	7,465
	"Salt Cod Square." for codfish. I A. Treat "Solid and Reliable Footwear," for boots and	
	shoes. Craddock-Terry Company "Twilight Orange Pekoe," for tea. Bemis Brothers	7,462
	Bag Company	7.466
	Cterme, for a medicine, J. H. De Wolf.,	11410

PRINTS.

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1851, will be furnished from this office for 10 cents. In ordering please state the name and number of the patent desired, and remit to Munn & Co., 331 Broadway. New York. Special rates will be given where a large number of copies are desired at one time.

Canadian patents may now be obtained by the inventors for any of the inventions named in the fore

SAVAGE Hammerless Magazine Rifle

SMOKELESS .303 CAL

Point Blank Range for Hunting. The Only Hammerless Repeating Rifle.

The most reliable and safest rifle ever manufactured. Shoots six different cartridges adapted for large and small game. Write for Descriptive Catalogue A.

SAVACE ARMS CO.

UTICA, NEW YORK, U. S. A.

Ghost of the Glacier

And Other Tales, including Making a Revolution, Sus the World, Feathers of Fashion, and others. A delight ful volume, beautifully illustrated. Ready for distribu-tion about May 1. Send 10 cents to T. W. Lee, General Passencer Agent, Lackawanna Railroad, 26 Exchange Place, New York City. Edition Limited.



nyone sending as ketch and description may ckly ascertain our opinion free whether an ention is probably patentable. Communication is probably patentable. Communication strictly confidential. Handbook on Patents tfree. Oldest agency for securing patents, atents taken through Muin & Co. receive ital notice, without charge, in the

MUNN & Co. 361 Broadway, New York

FOR SALE. -Entire Patent or State Rights of the Enterprise Pocket Fire Escape. Patented Jan. 30, 1900. Enterprise Harness Works, 451 Alisa St., Los Angeles, Cal.

Plating in Gold, Silver and Nickel. Replating and polishing. OGER BROS., 23 Duane St., N.Y. Room 44.

INVENTIONS developed, special machinery con-structed and built. H. C. GRABAU, 143 Centre St., N. Y.

MACHINES, Corliss Engines, Brewers' and Bottlers' Machinery. THE VILTER MFG. CO., 899 Clinton Street, Milwaukee, Wis.

TURBINES JAS. LEFFEL & CO. Springfield, Ohio, U. S. A.

INVENTIONS PERFECTED. ccurate Model and Tool Work. Write for Circular PARSELL & WEED, 129-131 West 31st St., New York.

.... CORK SHAVINGS
O. HEROLD & CO.,
Lisbon, Portugal.

MODELS & EXPERIMENTAL WORK.

Inventions developed. Special Machinery
L. V. Baillard, 106 Liberty St.. New York.

Rare opportunity for a competent brass finisher. The plant and good-will of small manufactory of fine brass tubing and karden syringes of thirty-five years standing for sale, owing to death of head of firm. Important to continue business without interruption. For sale outright or to be operated on shares. right or to be operated on shares.

Apply to E. W. DEAKIN, Ogontz Penn.

D'AMOUR & LITTLEDALE MACHINE CO.
130 WORTH 5T. NEW YORK.
Make Models of Any Machine to Order.

CAPE NOME, CAPE YORK, -ST. MICHAEL, DAWSON

AND ALL POINTS ON THE YUKON RIVER

DIRECT.

Operating ITS OWN Fleet of First-Class Ocean Steamships ST. PAUL, PORTLAND, BERTHA, RAINIER, DORA and others.

Full Line of River Steamers on the Yukon.

Under contract to deliver United States Mails throughout the Territory. First Departure, APRIL 30th, and Fortnightly thereafter.

For new Folders, Maps and further particulars as to Freight and Passage, write to

ALASKA COMMERCIAL COMPANY,

310 SANSOME STREET, SAN FRANCISCO, CAL., for all particular

FOR

OMFORT

The entire plant of THE UNITED STATES PIN CO., located at Seymour, Conn., on the line of N. Y., N. H. & H. R. (Naukatuck Division), consisting of buildings, real estate and valuable water power on Naugatuck River, including all machinery used by the above mentioned company for the manufacture of pins.

For full particulars and price address

UNITED STATES PIN CO.,
Or, OLIN L. DIBBLE, Seymour, Conn.

WANTED.—By a large manufacturing plant in the Middle West, a pattern maker famihar with agricultural implement work. Must be a comparatively young man and tboroughly competent in all departments of his trade. Steady employment for the right man. Address, giving references and experience as well as salary expected, S. B., 68, care Scientific American, New York.

WANTED.—An extensive manufacturing establishment, located between Cleveland and Chicago, has an opening for a young and competent chemist who is thoroughly familiar with up-to-date foundry practice. Must know his business in all its details. State experience, give references, name salary expected and address U. J., 55, care Scientific American, New York.

EVOLUTION OF THE AMERICAN LOcomotive.—By Herbert T. Walker. A valuable series by a member of the National Railway Museum Commit-tive. The locomotive from 1825 to date is described and illustrated by careful drawings, great attention being given to historical accuracy. 21 illustrations. SCIEN-TIFIC AMERICAN SUPPLEMENTS 1112. 1113. 1114. Price 10 cents each. For sale by Munn & Co. and all newsdealers.



CALCIUM CARBIDE EXPORTY, 35 NASSAU STREET, NEW YORK. (A B C Code.) Cable Address: BRYAXE, NEW YORK.

BOYS PAPER FREE if you will send names free. Greatest boys paper published. Address with stamp, THE STAR, Dept. 84, OAK PARK, ILLS.



YOU MAKE BIG MONEY Entertaining CAN MAKE BIG MONEY the Public with Motion Pictures, the new Grapho, Ampliphone Talking Motion Pictures, the new Grapho-Ampliphone Talking and Musical Combination and Panoramic Stereopticon Views \$60 to \$300 per week without previous experience. Only a little money needed to start with, and any man can operate our outifus successfully. Write for catalog. can operate our outfits successfully. Write for catalog. Entertainment Supply Co., 56 & 58 Fifth Av., Chicago.

REGEALED ICE MACHINES

EASE PAYS EXPENSES and per month. Steady position; self-selfer; no experience needed.8end 2e for contract.

PEASE MFG. Co., Cincinnatl. O., Dept. 10.



Ninety per cent of the CAPE NOME GOLD output will be dredged out and saved by

I Dvake's Amalgamators. The only machines that have stood the most exacting tests of practical miners.

KROGH MANUFACTURING CO. 9 to 17 Stevenson St., San Francisco.
Patentees and Builders.

In daily operation at the works. Builders of modern MINING, DRAINING and IRRIGATION MACHINERY of highest efficiency. 13 Send for Descriptive Catalogue.