

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

CULTIVATOR.—THOMAS OLDHAN, Leipsic, Indiana. In this invention devices are combined for plowing, harrowing, dragging and rolling the soil, the devices being so constructed that by certain rearranging and adjusting of the parts the implement may be adapted for all the various phases of cultivating. The implement is supported at the front by a small wheel, and at the rear by a land roller, and is guided by moving the roller to the right or left. A novel arrangement of cultivator frame, drag and adjusting device, is provided, whereby to raise and lower the cultivator frame and drag.

The same inventor has patented a double cultivator embodying the same principles as that referred to above. In the double cultivator for cultivating two or more rows of plants, the two land rollers are mounted in a manner to be simultaneously turned to the right or left and means are provided for simultaneously raising or lowering the several cultivator frames, drags and their appurtenances.

DEVICES FOR GATHERING PRUNES.—OLIVER S. HOOVER, of Stanford University, and MORRIS T. HOOVER, Mount View, California. These inventors have produced an apparatus, constructed on radically new lines, for gathering from the ground the prunes which have fallen from the tree. A series of gathering tubes are provided, which are pneumatically controlled in their movements, and a suction is produced to gather up the prunes. The gathering tubes adjust themselves to the irregularities of the ground and the apparatus is rendered automatic in its several operations of gathering, handling and depositing the prunes in a receptacle.

COMBINED HAY AND STOCK RACK.—THOMAS A. RAPSON and HERBERT J. FURNESS, Filion, Mich. As indicated by the title, this invention consists of a rack which may be adjusted to a wagon body either to constitute a stock rack, by so arranging it as to form vertical extensions of the wagon body, or folded outward to constitute a hay rack. The novelty lies in the new arrangement of braces and connecting members to strengthen the rack and permit of its quick adjustment to the different positions.

Steam, Gas and Water.

PISTON VALVE.—WILLIAM BUCKLEY, Sheffield, England. Having in mind the danger of excessive compression taking place in the cylinder with the risk of bursting the cylinder or breaking of valve rings, the present invention provides in the piston valves themselves a means of relieving any undue pressure as may occur, for instance, when the engine is reversed and the steam ports closed after the cylinder has received a charge of steam. The object is effected by means comprising valve bodies having a novel arrangement of openings and steam passages, in connection with which passages spring-pressed relief valves are provided, the arrangement being such that the relief valves open only when the pressure on their faces from within the cylinder exceeds the boiler pressure, plus the strength of the valve springs.

GAS-COCK.—ANDREW J. WIEGAND, Baltimore, Md. A new construction of self-lighting gas burners has been patented by this inventor. A special holder is provided for the lighting substance, such as platinum sponge lighting by contact with the gas, and a spherical valve having main and auxiliary ports, is rocked on its seat by means of a handle extending through the valve casing. The rocking of the valve in one direction directs the gas through the auxiliary port to the igniter and upon releasing the handle a spring pressing thereon returns the valve to close the auxiliary port and open the main passage leading to the burner tip. The devices may be employed in connection with ordinary tips or with incandescent mantles.

ACETYLENE-GAS-GENERATING APPARATUS.—CHARLES W. METCALF, El Paso, Texas. The general construction of the apparatus enters into this patent. A prominent and novel feature is the feed devices for regulating the charge of water to the carbide chamber, which is located beneath the gasometer tank and receives water from said tank. The pipe leading to the carbide chamber has two valves, one opening by the falling of the gasometer bell to supply the water and the other to be closed by the continued falling of the bell. Thus, if the carbide is exhausted and the bell continues to fall, the water will be automatically shut off.

CISTERN-VALVE FOR WATER CLOSETS.—CHARLES SMITH, New York City, N. Y. A valve and appurtenances have been devised by this inventor, designed to prevent leakage from the tank or cistern into the flushing pipe. The outlet pipe rises above the water level, is open at the top and has a partition and a side opening forming the pipe into a siphon, the partition terminating short of the top. A float valve rests on the upper end of the pipe and a suspended sliding cup surrounds the pipe and is open at its bottom for entrance of water from the tank. By pulling the usual chain the cup rises and its water floats the ball valve and starts the siphon. All valves below the water level are thus done away with.

Mechanical Devices.

PROPELLER.—SYLVANUS C. LITTLEFIELD, JR., Brunswick, Ga. This inventor has designed a propeller having blades of a special form with respect to the edge lines and the lines of curvature given the face of the blade. The object of the invention is stated to be to reduce the suction or "drag," to throw the strain close to the shaft with a view of preventing lateral vibration of the vessel, and also to overcome any tendency of the propeller to settle the vessel deeper when at high speed, and to enable the propeller to work effectively even though not wholly submerged.

FLOORING-CLAMP.—ARTHUR L. STOWELL and ARTHUR H. ROUNDS, Gay Mills, Wis. The clamp, designed by these inventors for clamping flooring-boards, siding, or the like where a tight joint is required, is manipulated by one hand, and comprises a base plate adapted to rest on the edge of the board last laid, a short arm having a spur at its end to be pressed into one side of the joist, and a handled bar journaled on the plate in a position parallel with the short arm, the said bar having a dog with a series of teeth which engage the

joist at the side opposite the spur. The rotation of the handle bar exerts the desired pressure on the board.

Miscellaneous Inventions.

DISINFECTING-BLOCK.—SAMUEL EDEN, Brooklyn, New York city. The block is composed of mercury bichloride, disinfecting oils, talcum, and Portland cement. It is designed to prevent obnoxious gases from passing into a room through sinks; to produce a healthful, invigorating atmosphere; and to minimize the danger of infection.

DRILL-TOOL SHAPER.—LOUIS F. NELL, 2558 W. Thirty-second Avenue, Denver, Colo. The inventor has devised a very simple and ingenious apparatus for enabling prospectors engaged in rock drilling who are unable to make their own bits to produce them quickly without the exercise of skill or to enable those who are skilled to produce the bits in less time and with less labor.

SHAFT-TUG.—JAMES O'CONNELL, Mount Sterling, Ky. The O'Connell shaft-tug consists of a shank having a shaft-bearing on its lower end. On the shank a spring-pressed tongue is pivoted, having a cross-piece extending from one member of the bearing to and through the other. The tongue is held against upward movement, when pressure is exerted on it by the shaft, to relieve the pivot of the tongue of undue strain. The cross-piece of the tongue is curved upwardly to give sufficient room for the shaft to play in and to allow an easy disconnection of the tug from the shaft in unhitching. This is done in the ordinary manner by loosening the traces and unbuckling the belly-band and then walking the animal out of the shafts, the closed bearing sliding off the shaft. The shafts disengage readily from the bearing without the tug's hanging back or dragging, as so frequently happens in other tugs. It is not absolutely necessary, however, to unbuckle the belly-band.

AX.—SIEVE T. JOHNSON, Trinidad, Cal. This invention relates to axes having the cutting edges formed on parts removable from the ax-head, and the inventor has provided a new form for the mating portions of the head and removable blade and a special arrangement of securing keys.

SAND SHIELD FOR VEHICLE-AXLES.—EDWIN H. WILSON, Globe Village, Mass. This inventor provides an effective sand-shield arranged to be thrown upward and away from the hub when removing the wheel. The shield has a shank pivoted on the stock of the axle and a plate-spring is provided to hold the shield in the raised or lowered position. The outer end of the shield is curved to shed the sand, and it extends over a flanged ring which is driven into the end of the hub and revolves with the latter, the shield and ring serving to prevent entrance of sand to the hub-box and spindle.

EYEGLASSES.—AUGUSTUS B. CRITZER, San Antonio, Tex. The attachments devised by this inventor are adapted to any make of eyeglasses and provide for holding and steadying the eyeglasses in proper position, by means of arms which effect a bearing above the eyes, against the frontal bone, thus relieving the usual nose-pieces of any pinching action. The arms are adjustable to different positions and will retain a given adjustment, so as to always assume the same position before the eye.

NECKTIE-FASTENER.—PHILIP N. SCHUYLER, Bellevue, Ohio. This invention relates particularly to neck-bows and string-ties. The fastener, which is made of wire, includes a loop or yoke for engaging the collar-button and ingeniously arranged hooks at the side or sides of the yoke, the hooks serving to be engaged by eyes on the ends of the neckband. The band may or may not be entirely separable from the bow.

BADGE-PIN.—GEORGE H. BROOKS, Louisville, Ky. The pin and backing plate, which relate to campaign badges and the like, are given a novel construction to insure a firm and positive fastening of the pin by spring action.

RIBBON-HOLDER.—LLOYD E. HAMILTON and JOHN W. MILLER, Hudson, Ind. In this ribbon-holder, in which the ribbon-roll revolves, a spring clamp presses on the free end of the ribbon to prevent a too free unwinding, and the form is such as to permit of moving the spring-clamp bodily toward the center of the roll as the roll becomes smaller, so that the clamp effectively holds the ribbon until the roll is entirely unwound.

NOTE.—Copies of any of these patents can be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

VERRES ET EMAUX. Par L. Coffignal. Paris: J. B. Baillière. 1900. 129 illustrations. Pp. 332. Price \$1.25.

This volume presents in concise form the most important process in the manufacture and enameling of glass. The work discusses the physics and chemistry of glass, its refractive properties, its varieties and their manufacture, and other necessary and valuable information. The latter part of the book discusses enamels.

THE NAVAL WORDBOOK. (Die Seemanns-sprache.) Ein systematisches Woerterbuech marine-technischer Ausdruecke in englischer und deutscher Sprache. Von N. W. Thomas, M.A. Second edition, revised and enlarged. Pp. 177. 12mo. Limp cloth. Price \$1.25.

We have used the first edition of Mr. Thomas' dictionary more or less constantly for the last six months and have found it a very serviceable little book. The work has been considerably improved by the correction of a few errors and the addition of an excellently compiled list of English words. Under the heading of "ordnance" slight revisions might still be profitably made. "Laffettenwand" is usually known as a "cheek"; "Wiegelafette," as a "spring-return carriage." The German equivalent for "gravity-return carriage" (Rahmenlafette) should also have been inserted. On the whole, Mr. Thomas has performed a very creditable task which deserves the thanks of all who have to translate naval terms from German into English or English into German.

Business and Personal.

Marine Iron Works. Chicago. Catalogue free. For mining engines. J. S. Mundy, Newark, N. J. "U. S." Metal Polish. Indianapolis. Samples free. Yankee Notions. Waterbury Button Co., Waterbury, Ct. Write Baker Mfg. Co., Racine, Wis., about pushing any new article. Facilities excellent.

Most durable, convenient Metal Workers' Crayon is made by D. M. Steward Mfg. Co., Chattanooga, Tenn. Machine Work of every description. Jobbing and repairing. The Garvin Machine Co., 141 Varick St., N. Y.

Ferracuta Machine Co., Bridgeton, N. J., U. S. A. Full line of Presses, Dies, and other Sheet Metal Machinery. The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable times should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7931) C. M. asks: 1. Can you give me any advice how to vulcanize bicycle tires? A. The process of vulcanizing rubber is described in the SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 251, 252, 731 and 895, price 10 cents each by mail. 2. Will a fan motor, having permanent magnetic fields, need the same number of batteries to drive it, as the same motor with electro magnet fields? A. The power is less with permanent magnets by the small amount of current to magnetize the field, of course. 3. Is telephoning allowed during a thunder storm, and why are the lights turned on during the same on a trolley car? A. The telephone exchanges do not cut off subscribers during a thunder storm. They depend upon the lightning arresters for protection. For the same reason the trolley service is not interrupted. Once in a while a burn-out occurs, but very rarely in comparison with the number of telephones and cars. Lamps are only lighted when it is dark enough to require their light.

(7932) W. W. S. asks: Does a piece of iron have more or less cubical contents when magnetized? I have tried to find out by using water and hair tubes, but I can see no change whatever. A. We should not expect to demonstrate any change in contents of an iron bar by magnetizing it. The change is of an infinitesimal order at the largest. The question has at most a theoretical interest. According to theory, the molecules are turned with their lengths in the same direction while the magnetizing current flows. They occupy no more space in this condition. We should, therefore, think that the bar as a whole would occupy no more.

(7933) L. C. S. writes: 1. As I understand it the resistance is what makes the field coil get hot. In order to avoid the heating more wire is added; now, if resistance is what heats the coil, how do you account for the coolness of the fields after adding more wire, consequently more resistance? A. Your statement that resistance causes the heating of an electric circuit is less than half right. The exact statement is that the heat developed in a circuit is directly proportional (1) to its resistance in ohms, (2) to the square of the current in amperes, (3) to the time that the current flows in seconds. Now one ampere flowing through one ohm develops 0.24 calories in one second. Putting these facts in a formula we have: Heat in calories = 0.24 C<sup>2</sup>Rt. It can now be seen why the heating of a coil can be remedied by adding more wire. The increase of resistance cuts down the amperes in the same ratio as the increase. But the reduction of the amperes affects the heating power in the ratio of the squares of the amperes. Thus, if the resistance were doubled the amperes would be halved, but the heat produced would be reduced to one-fourth of what it was, since the square of 1/2 is 1/4. 2. What is the cause of the humming in the field coils and pole pieces of an induction motor when the armature does not revolve, but the current is passing through the fields? A. The alternations of an electric current produce vibrations which are heard as sound. These can be heard near an arc light run by an alternating current, or near an alternating electro magnet. 3. What changes are necessary to reverse the running of an induction motor? Crossing the positive and negative wires at the binding posts will not do it. A. Of course, merely reversing the main wires will produce no effect upon the direction of rotation of a motor. If the induction motor is two phase, the direction of rotation will be reversed by changing the two leads of either phase. If it is three phase, it will be reversed by changing any two of the leads. The different phases are a fraction of a period behind each other, and the direction of rotation depends upon the direction in which the phases lag behind around the rotating part of the motor, whether clock-wise or contra-clock-wise. To reverse the motor the direction of the lag in phase must be reversed. 4. Would it be possible to illustrate and explain the induction motor in the SCIENTIFIC

AMERICAN some time in the future? A. The induction motor has been fully treated in several books recently published: Ondin's "Polyphase Apparatus," price \$3 by mail; Thompson's "Polyphase Currents," price \$5 by mail. These, with Thompson's "Elementary Lessons," price \$1.40, will put you in possession of quite a complete library of the subject at present.

(7934) C. B. M. writes: I have a small motor which has a magnet in place of field winding. An electrical engineer told me if I put it on a large machine it would give greater power. I did so, and it does not give any power at all. It will run without a load, but will not run backward when current is reversed as it did before. A. A motor requires the proper current, that is, a current of the number of volts for which its winding was made. It will then develop under this pressure the power it was intended to yield, for the reason that it will take the proper number of amperes from the line. A current less than this will not run the motor up to its limit, one greater than this will overheat its coils. It would appear that you must have put the motor upon an alternating current, when it was intended for a direct current, since it would not reverse nor develop power.

(7935) E. H. W. writes: I read with much interest the article on M. Tommasina's automatic coherer, in your issue of June 16, 1900, page 376, and would like to ask if it is not possible that the decoherence of the carbon particles after the spark has passed may not be due to the return of the iron diaphragm in the telephone receiver to its original position, as there is a perceptible jar due to the vibrations in a receiver on both making and breaking the circuit. A. The vibrations of a telephone diaphragm can hardly have energy enough to effect the decohesion of the particles mechanically. The point could, however, be determined by placing a coherer containing metallic powder in the same position. If it will work as well as the carbon coherer, it would justify the theory of our correspondent.

TO INVENTORS.

An experience of over fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending JULY 31, 1900.

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including items like Air cooling apparatus, Alarm for low water, Albuminoids, Allo citral, Article applicable for various purposes, Bag lock and catch, Bags, satchels, etc., Ball car, Ball tie, Baling press, Barrel, keg, or tierce, packing, Bathing device for producing artificial waves, Battery, Bed bottom, spring, Bed, folding guard frame for children's, Bedstead, Belt fastener, Belt tightener, Beverage dispensing device, Bicycle lamp holder, Bicycle lock, Bicycle saddle, Bicycle support, Bicycle wheel, Block, Blowers, in peller for rotary, Blowing engine, compound, Gasche & Foote, Boiler, See Domestic boiler, Steam boiler, Boiler incrustations, composition for preventing, Book, account, Book, pocket record, Borax, making, Boring apparatus, Boring tool, Bottle finisher, Bottle neck finishing machine, Bottle stopper, Bottle stopper for aerated beverages, Bowling alley, Box, Stuffing box, Bracelet, Bracket, Bracket, L. W. Mazy, Brake block, automatic, Brake shoe, automatic, Brick machine with sander attachment, Brooch, Brush, horse, Bubbler pipe, soap, Building block, Building material, Bunk, C. Strassheim, Burner, See Gas burner, Gas lighting burner, Hydrocarbon burner, Button collar, Button, cuff, Button, cuff, Button, machine, Cabinet, kitchen, Cable hanger, Cables, means for connecting, Cake box, Calcining furnace, Camera front gripping device, Camera, photographic, Camera, roll holding, Camera side arm bracket spring, Can attachment, Can caps and collars together, machine for brazing, Can stripper, Car construction, steel, Car coupling, D. Bowers, Car coupling, M. A. Brown, Car coupling, T. Harrison, Car door, L. A. Hoerr, Car fender, G. D. Smith, Car, freight, S. J. Johnson, Car gear, motor, J. J. Heilmann, Car loading apparatus, Car mover, Taylor & Oglesby, Car, railway, T. L. State.

(Continued on page 94)



**ELECTRICAL ENGINEERING TAUGHT BY MAIL** Thousands are successful and gaining better positions and salaries studying at home by our mail system. We teach Electrical Engineering, Mechanical Engineering, Mechanical Drawing, Electric Lighting, Short 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, 240 W. 23d Street, New York.



**THE** whole history of the world is written and pictured week by week in Collier's Weekly. So well written and so well pictured that it is now the leading illustrated record of current events and has the largest circulation of any periodical in the world that sells for three dollars or more per year.

On sale at all newsstands. Price 10 cents per copy. Sample copy free. Address COLLIERS WEEKLY, 525 West 13th Street, New York City.

**THE Batchelors WIFE? A New Button**

THE BEST THING YET!

Is simple and durable, and can be put on and taken off at will. Nothing like it in the world. Try a set and be convinced. If your dealer does not keep them send 25c to us for sample doz.

**THE L. & H. SUPPLY CO.,**  
35 Commercial Avenue,  
Blghampton, N. Y.

**SUBMARINE TELEGRAPH**—A POPULAR article upon cable telegraphing. SCIENTIFIC AMERICAN SUPPLEMENT 1134. Price 10 cents. For sale by Munn & Co. and all newsdealers.

**Magneto for Gas or Gasoline Engine Igniters**

No batteries used. Self-lubricating bearings. Dust and moisture proof. Brushes self-adjusting. Material and workmanship the best. 25¢ per unit. For one year. Send for circular and price list.

**GIDDINGS & STEVENS, Rockford, Ill.**

**NICKEL AND Electro-Plating Apparatus and Material.**

**Hanson & VanWinkle Co.,**  
Newark, N. J.,  
138 Liberty St., N. Y.,  
30 & 32S Canal St Chicago.

**The Ideal Hunting Shoe**

The concentrated product of fifty years of shoemaking skill. The inches high, Bellows tongue, uppers gray color, soft as a glove, tough as steel, cannot harden. The best storm-proof shoe ever placed on sale for Klondike, miners, surveyors, engineers, and any one requiring perfect foot protection. Thousand of pairs sold to satisfied patrons.

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

**REVERSING STEAM TURBINE**—PARSON'S recently perfected turbine for boats. Illustrations showing details. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 1158. Price 10 cents, by mail, from this office, and from all newsdealers.

**ONLY THE SUNART CAMERAS MEET ALL REQUIREMENTS**

28 STYLES. PRICES \$5 to \$50

SEND FOR CATALOGUE TO  
**SUNART PHOTO CO., ROCHESTER, N. Y.**

**NOW READY.**

**Gas Engine Construction**

By HENRY V. A. PARSELL, Jr., Mem. A. I. Elec. Eng., and ARTHUR J. WEED, M. E.

**PROFUSELY ILLUSTRATED.**

Price, \$2.50, postpaid.

This book treats of the subject more from the standpoint of practice than of theory. The principles of operation of Gas Engines are clearly and simply described, and then the actual construction of a half-horse power engine is taken up.

First come directions for making the patterns; this is followed by all the details of the mechanical operations of finishing up and fitting the castings. It is profusely illustrated with beautiful engravings of the actual work in progress, showing the modes of chucking, turning, boring and finishing the parts in the lathe, and also plating showing the lining up and erection of the engine.

Dimensioned working drawings give clearly the sizes and forms of the various details.

The entire engine, with the exception of the fly-wheels, is designed to be made on a simple eight-inch lathe, with slide rests.

The book closes with a chapter on American practice in Gas Engine design and gives simple rules so that anyone can figure out the dimensions of similar engines of other powers.

Every illustration in this book is new and original, having been made expressly for this work. Large 8vo. 296 pages.

Send for Circular of Contents.

**MUNN & CO., Publishers,**  
**SCIENTIFIC AMERICAN OFFICE,**  
361 Broadway, NEW YORK.

Upholstering apparatus, J. A. Staples.....	654.055
Upholstering, tufted, A. Freschl.....	654.886
Upholstery, A. Freschl.....	654.618
Urinal, W. Bunting, Jr.....	654.801
Valve closing mechanism, automatic, E. F. Van Vechten.....	654.770
Valve for bathing apparatus, mixing and controlling, W. Bunting, Jr.....	654.602
Valve for engines, governor cut-off, F. A. Large.....	655.096
Valve mechanism, E. F. Van Vechten.....	654.771
Valve operating mechanism, W. Bunting, Jr.....	654.000
Valve relief mechanism, piston, G. R. Henderson.....	655.040
Valve, retaining, J. S. Lapsch.....	654.987
Vehicle, motor, E. P. Cowles.....	654.716
Vehicle, motor, H. J. Lawson.....	654.797
Vehicle, motor, H. W. Libbey.....	654.741
Vehicle spindle protector, B. F. Nickerson.....	654.754
Veneer package divider, G. A. Gage.....	654.724
Vessel drag brake, marine, F. Wendler.....	655.140
Violin, J. Swenson.....	654.859
Violin shoulder rest, F. Schmidt.....	654.678
Voting booth, folding, C. Emert.....	654.362
Wagon, six and hay rack lifter, M. J. Sasgen.....	654.842
Wagon rack, A. L. Sipe.....	654.757
Wagon reach coupling, G. V. Whitehead.....	654.753
Wall tie, H. S. Humes.....	654.733
Washing fibrous material, E. Koppelman.....	654.647
Washing machine for beets, etc., L. Hirt.....	654.733
Watch mainspring fastener, D. H. Church.....	654.873
Water elevator, pneumatic, M. N. Schaufeleberger.....	654.764
Water tower, E. F. Steck.....	654.814
Water wheel, H. T. Lawrence.....	654.654
Weeding device, G. F. Marchant.....	654.864
Weighing mechanism for refrigerators, Dodds & Robertson.....	655.066
Welding, C. G. Wibor, C. Emert.....	654.819
Well, artesian or oil, R. D. Green.....	654.729
Well, tube, A. D. Cook.....	654.855
Wheel, See Bicycle wheel. Trolley wheel. Water wheel.....	654.854
Winding machine, J. C. Anderson.....	654.824
Window blind, H. E. Schultz.....	655.122
Window support, L. Pare.....	655.068
Wire of tubular shells of gold, reduction of hollow, H. R. Baker.....	654.590
Wire stretcher, H. C. Werner.....	654.772
Wood cutting machine, Hindley & Harding.....	654.635
Wrapper, E. E. Housh.....	654.732
Wrench, L. Smith.....	655.724
Wrench, G. S. Tilton.....	654.761
Wurtzite method and product, R. M. Thompson.....	655.131
Wurtzite, treating, R. M. Thompson.....	655.130
Yoke, neck, H. W. Spring.....	654.958
Zinc from materials containing zinc, obtaining oxid and carbonate of, G. Rigg.....	654.804

**DESIGNS.**

Automobile frame, G. T. Turner.....	33.043
Badde, J. Russell.....	33.015
Belt body, K. Steuerewald.....	33.017
Box, covered, J. Leo.....	33.033
Button, cuff, G. Wood.....	33.018
Charging block, Z. E. Barkalow.....	33.038
Clamp member, E. H. Walle.....	33.025
Clothes pounder, Levitin & Rosen.....	33.057
Coffin handling book, A. A. Hallock.....	33.055
Crank arm repair, L. Liljeqvist & Durant.....	33.024
Fireplace regulating plate, H. Pannill.....	33.040
Fire pot, D. S. Richardson.....	33.039
Garment, bifurcated, A. A. Scriven.....	33.021
Handle bar member, L. Larsen.....	33.025
Harness loop, J. F. Button.....	33.028
Hook, garment, H. Grant.....	33.019
Knife, R. S. Harper.....	33.031
Lamp holder, electric, W. Roche.....	33.036
Level case, ship's, E. C. Akers.....	33.034
Listers, substit. attachment for corn or cotton, A. G. Newman.....	33.042
Mattress link, wire, McIntyre & Nichols.....	33.030
Nut lock washer, A. B. Beall.....	33.022
Pin, safety, A. Unzfeldt.....	33.018
Plate, A. S. Higgins.....	33.032
Stove, cooking, Kennedy & King.....	33.029
Thill coupling, arrattler, W. H. Purdes.....	33.027
Trousers banger, H. R. Williams.....	33.020
Twisting machine guide wire, thread, H. G. Beede.....	33.029
Window lock member, D. L. Harsbner.....	33.023

**TRADE MARKS.**

Agricultural implements, Janesville Hay Tool Company.....	34.997
Boots and shoes, Barton Brothers.....	34.969
Boots, shoes, and leather, Rice & Hutchins.....	34.967
Bronzing liquids, varnish, and lacquer, A. Wulff.....	34.963
Candy, Rochester Candy Works.....	34.981
Cement, Portland, Germania Portland Cement Co.....	34.982
Cement Works.....	34.985
Eye water, E. Nolzen.....	34.990
Fabrics, certain named, Taylor & Lockett.....	34.965
Fish in hermetically sealed tins, Alaska Packers Association.....	34.978
Germicides or disinfectants, W. B. B. Co.....	34.989
Gum, chewing, Meyer Brothers Gum Company.....	34.982
Hats and caps, Bill & Caldwell.....	34.986
Medical compound, J. M. Collins.....	34.987
Medical compounds, certain named, Forbes & Coxe Drug Company.....	34.992
Noodles and vermicelli, W. Boehm.....	34.980
Paint powder, W. D. Warner.....	34.994
Photographic developers, Firm of G. Gennert.....	34.972
Photographs, certain named, F. T. Butler.....	34.971
Remedy for certain named diseases, Judge & Dolph Pharmaceutical Company.....	34.988
Rubber goods, certain named, Peerless Rubber Manufacturing Company.....	34.974
Rubber goods, except dental rubber, druggists' Ideal Rubber Company.....	34.976
Rubber hose, Bowers Rubber Company.....	34.975
Sheetings and drills, H. Norden.....	34.964
Shoes, Lyons Shoe Company.....	34.970
Stomachic and appetizer, certain named, Merck & Company.....	34.986
Syringes, V. A. Wilhoit.....	34.977
Telephones and telephone supplies, Century Telephone Construction Company.....	34.973
Tobacco, chewing, Rucker & Witten Tobacco Company.....	34.983
Toilet preparations and articles, certain named, H. Corlette & Company.....	34.991
Vessels, J. F. Johnson & Company.....	34.998
Whisky, L. McCormick.....	34.984
Whisky, Taylor & Williams.....	34.985

**LABELS.**

"El Gato Grande," for cigars, cigarettes, etc., S. L. Engel.....	7.721
Eureka Whooping Cough Remedy, for whooping cough remedy, B. F. Spangler.....	7.722
Gold Bond Shoes for Men," for boots and shoes, J. B. Hunter Company.....	7.719
"Minnekahtha Mineral Water," for bottled mineral water, Hot Springs Bottling Works.....	7.720
"Savoy Hair Restorer," for hair restorer, E. F. Smith.....	7.723

**PRINTS.**

"A Razorless Shave," for a chemical compound, Shaving Cream Manufacturing Company.....	246
Cut No. 10, National Platform Computing Scale for computing scales, National Computing Scale Company.....	249
Cut No. 11, National Platform Computing Scale for computing scales, National Computing Scale Company.....	250
Nervewin, for carbonated beverages, A. Schlueter & Company.....	245
"The Nation's Capital Washington D. C. Souvenir Playing Cards," for playing cards, Waters Souvenir Company.....	248
"The White Pass and Yukon Route Playing Cards," for playing cards, S. M. Irwin.....	247

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1865, will be furnished from this office for 10 cents. In ordering please state the name and number of the patent and refer to Munn & Co., 361 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 inventors of the United States at a cost of \$40 each. If complicated the cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.

**The Brunswick Cigar**

The Brunswick Cigar is now and always will be the best Cigar for the money—consistent in quality, quantity and price. Try them once—you will smoke them always.

**JACOB STAHL, JR. & CO., Makers, 168th St. and 3rd Ave., N. Y. City.**

**Look for Arrow Head on Every Cigar.**

**PROPOSALS.**

SEALED PROPOSALS WILL BE RECEIVED AT the office of the Light-House Engineer, Tompkinsville, N. Y., until 12 o'clock M., August 7, 1900, and then opened for the metal work and erection of Green's Ledge Light-House, Norwalk Harbor, Conn., in accordance with specifications, copies of which with blank proposals and other information, may be had upon application to D. P. HEAP, Lieut.-Colonel, Corps of Engineers, U. S. A.

**An Invention of Great Importance For Sale.**

An apparatus in very large demand, having large sales all over the world. It carries a handsome profit, and requires but few simple tools for its production. It is far away ahead of anything of its kind, and has no competition. This is a real chance for anyone wanting to manufacture a cut and dried article. Sells at about \$50. Apply to PATENT, care International News Company, 5 Breems Buildings, Chancery Lane, London, E. C., Eng.

**50 YEARS' EXPERIENCE**

**PATENTS**

TRADE MARKS  
DESIGNS  
COPYRIGHTS & C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbooks on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

**Scientific American.**

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers.

**MUNN & Co., 361 Broadway, New York**  
Branch Office, 625 F St., Washington, D. C.

**Daus' "Tip-Top" Duplicator**

100 SHARP AND DISTINCT COPIES IN BLACK FROM PEN AND 50 COPIES FROM TYPEWRITER. NO WASHING, NO PRINTERS' INK, NO STENCIL. Price, Complete, \$7.50.

SENT ON TEN DAYS' TRIAL TO RESPONSIBLE PARTIES

The "Tip-Top" reproduces the handwriting so exceedingly faithful that copies duplicated in Black Ink on this apparatus are often taken for ordinary written letters and not duplicates.

The Felix F. Daus Duplicator Co. (Inc.), 1 to 5 Hanover St., New York

**JAS. P. SILO, Auctioneer,** announces an important sale of **VALUABLE PATENT RIGHTS** at Auction, to be held on **Tuesday, Sept. 4, 1900,** at one o'clock, P. M., at 43 Liberty Street, New York. Models and Drawings now on exhibition. Catalogues ready August 25th.

**A. W. FABER**

Manufactory Established 1761.

LEAD PENCILS, COLORED PENCILS, SLATE PENCILS, WRITING SLATES, STEEL PENS, GOLD PENS, INKS, PENCIL CASES IN SILVER AND IN GOLD, STATIONERS' RUBBER GOODS, RULERS, COLORS AND ARTISTS' MATERIALS.

78 Reade Street, New York, N. Y.

Manufactory Established 1761.

**A BIG INCOME**

Can be made GIVING PUBLIC ENTERTAINMENTS in Churches, Halls and Theatres with MOTION PICTURES the new Grapho-Amphiphone, MUSICAL and Talking Combination and Panoramie Stereopticon Views, \$40 to \$300 PER WEEK. Pleasant employment and any man can operate them. COMPLETE OUT-FITS, including large illustrated Advertising Bills (18x24), admission tickets, instruction book, beautiful program, most interesting and sensational subjects, just out. Will be sent C.O.D. subject to examination. Write for catalogue and copies of letters from exhibitors who are MAKING BIG MONEY with our outfit.

ENTERTAINMENT SUPPLY CO., Dept. AA.56-585th Ave. CHICAGO

Agents wanted in foreign countries.

**N. Y. CAMERA EXCHANGE.**

50% Saved on all makes of Cameras

Headquarters for Buying, Selling and Exchanging Cameras or Lenses. Large assortment always on hand.

Developing, Printing, etc.

Photo supplies of every description at lowest prices.

Send 2c. stamp for bargain list.

**N. Y. CAMERA EXCHANGE, 114 Fulton St., NEW YORK**

**INVENTORS' MERCANTILE BUREAU.**

Manufacturers and Introducers of PATENT NOVELTIES.

We have special facilities for the manufacture of NOVELTIES and undertake to make models and the finished product for the market at reasonable prices. Having offices in foreign countries as well as in different cities of the United States, our advantages for the introduction of salable novelties cannot be excelled. We buy novelty patents outright or will sell them on a royalty. No county or state rights bought. We can find a ready sale for meritorious Advertising Novelties. References, Mechanics and Traders Bank, N. Y.

**INVENTORS' MERCANTILE BUREAU, 320 Broadway, New York, U. S. A.**

**ROAD BUILDING MACHINERY**

AND SUPPLIES OF EVERY DESCRIPTION

ACME ROAD MACH'Y CO. — FRANKFORD N. Y. U. S. A.

**IF YOU SHOOT A RIFLE**

Pistol or Shotgun, you'll make a Bull's Eye by sending three 2c. stamps for the Ideal Hand-book "A," 126 pages FREE. The latest Encyclopedia of Arms, Powders, Shot and Bullets. Men tion SCIENTIFIC AMERICAN. Address IDEAL MFG. CO., NEW HAVEN, CONN., U. S. A.

**ICE MACHINES, Corliss Engines, Brewers' and Bottlers' Machinery.** THE VILTER MFG. CO., 820 Clinton Street, Milwaukee, Wis.

**STEEL WHEELS, MODELS & EXPERIMENTAL WORK, SMALL MACHINERY NOVELTIES & ETC.** NEW YORK STENCIL WORKS 100 NASSAU ST. N. Y.

**BABBITT METALS.—SIX IMPORTANT** formulas. SCIENTIFIC AMERICAN SUPPLEMENT 1123. Price 10 cents. For sale by Munn & Co. and all newsdealers. Send for 1897 catalogue.

**D'AMOUR & LITLEDALE MACHINE CO.**  
130 WORTH ST., NEW YORK.  
Make Models of Any Machine to Order.

**TURBINES** Send for Circular "M." **JAS. LEFFEL & CO.** Springfield, Ohio, U. S. A.

**SPARGER'S WELDING COMPOUND.** Equal to The Art to Borax. Manufactured in Virginia and Colorado. D. I. Bachman, Sole Agent, Drawer 771, Roanoke, Va.

**AUTOMATIC MACHINERY BUILT** to order. Our facilities and experience in this line are exceptionally advantageous. We invite correspondence from inventors of mechanical devices.

**OTT. MERCHANTILE COMPANY,**  
Incorporated, Baltimore, Md.

Printing Press Machinists wanted for England. American wages paid. Men having had experience with Campbell and Miehle machines given preference. Address Printing Machinery Co., Ltd., 15 Tudor St., London, England.

**D. L. HOLDEN**  
1336 BEACH ST. PHILADELPHIA PA.  
SOLE MANUFACTURER  
**REGELED ICE MACHINES**  
SEE FIRST PAGE SCIENTIFIC AMERICAN SEPT. 2, 1899.

**Models and Experimental Work**

Inventions Developed. Special Machinery.

**E. V. BAILLARD, Fox Bldg., Franklin Square, New York.**

**Practical ELECTRICAL Engineering** exclusively taught. Course complete in one year, opens September 30th. Catalogue on application. **LOUIS D. BLISS, Principal, Bliss Electrical School, 614 12th Street, N. W., Washington, D. C.**

**Why Make Rubber Stamps?**

Not

Our "New York" Rubber Stamp Vulcanizers received the only medal awarded any Vulcanizer, World's Fair, Chicago. Simple process. Large profits. Circulars free.

**Barton Mfg. Co., Dept. A, 338 B'way, New York, U. S. A.**

**MERITORIOUS INVENTIONS**

financed or patents sold outright. Capital furnished for good enterprises at 5 per cent. Stock companies formed and influential directors procured. Stocks and bonds sold. We transact all business on commission strictly. No advance fees. **PETER WHITNEY, 100 Broadway, New York.**

**WANTED.—MAN COMPETENT TO PLAN,** superintend building and operate a plant for beating, tempering and jappanning light, flat, steel springs in large quantities. Address, with full particulars as to ability, giving references if possible.

**H. N. N., Box 773, New York.**

**FOR SALE**—Three valuable articles in the hardware line. Full sets of brass patterns metal core boxes, etc., with shop right. Patents also for sale. No experimental work—ready to manufacture. Address **LOUIS HECK, 35 N. J. R. L. Ave., Newark, N. J.**

**GAS ENGINE CASTINGS.**

Materials and Blue Prints. Write for Catalog.

**PARSELL & WEBB, 129-131 West 31st St., New York.**

**Brass Band**

Instruments, Drums, Uniforms, & Supplies. Write for catalog, 445 illustrations, FREE; it gives information for musicians and new bands. **LYON & HEALY, 88 Adams St., CHICAGO.**

**ELECTRICAL MACHINERY BARGAINS**

ARC LAMPS, ALL KINDS AND SIZES OF DYNAMOS, ENGINES, MOTORS ETC.

CORRESPOND WITH US TO BUY OR SELL  
**THOMPSON SON & C. 105 LIBERTY ST. N. Y.**