

RECENTLY PATENTED INVENTIONS.

Engineering.

SCREW PROPELLER.—Benjamin F. and Millard F. Sparr, New York City. According to this invention there are arranged upon the propeller shaft a series of spiral and tapering blades, with larger auxiliary blades at the rear end, whereby it is designed to increase the speed of a vessel, while the improvement can be applied without materially changing present forms of construction.

BLAST FURNACE HOPPER.—Benjamin F. Conner, Columbia, Pa. Combined with the hopper are two bells, an inner bell mounted to turn within an outer one, openings of the two bells registering with each other, and means for operating both bells and rotating the inner one, to facilitate the distribution of the charge within the furnace as desired.

Mechanical.

SAW FILING AND SETTING MACHINE.—William H. Parry, New York City. Combined with a pivoted guideway and a slide carrying a file holder is a vertically adjustable friction roller engaging the guide, the roller being carried by a lever which is given a swinging motion by a cam, with other novel features, whereby the saw is accurately fed and the teeth made uniform, the invention being an improvement on a former patented invention of the same inventor.

DIE FOR ORNAMENTAL WORK.—William Schumacher, Brooklyn, N. Y. This is a die for ornamenting cardboard, leather, or similar material, and is composed of a suitable body of metal, rubber, celluloid, or other substance, formed with apertures in which are fitted glass projections of any desired form, these projections being polished and covered with gold, silver, etc., to form the lining of a socket made in the material when the die is pressed therein.

WINDMILL.—William Palmer, Jr., Rincon, New Mexico. The construction of this wheel is such that as the wind increases it adjusts a crank pin operating a reciprocating pitman to give an increased resistance, and thus accomplish more work, while preventing the wheel from moving at a dangerous speed, the regulation of the speed being thus automatically effected.

TICKET PRINTING MACHINE.—Gideon B. Massey, Mamaroneck, N. Y. (deceased, Sarah R. Massey and Stanley A. Bryant, administrators). This invention provides a machine to print a ticket from one station to any other station on a road, and at the same time date and consecutively number all tickets issued, and keep a record thereof, the invention covering a novel construction and arrangement of parts and combinations of elements.

Agricultural.

CULTIVATOR ATTACHMENT.—Edward S. Bailey and James M. Coons, Orrick, Mo. A shoe is pivoted to the end of the plow standard, and a peculiarly constructed spring is adapted to bear upon the upper end of the shoe and hold it in place, the shovel or plow being secured to the lower end of the shoe, the improvement being designed to prevent accidents to the plow from the striking of rocks, roots and other obstructions.

PLANTER AND FERTILIZER DISTRIBUTER.—Washington S. Jones, Meridian, Miss. This is a box-like reservoir which may be conveniently attached to any plow stock, with a rearwardly and downwardly curved spout, and a stirrer and feeding device, with means for operating the latter from the supporting wheel, while the seed dropped are covered by blades at the rear of the spout.

Miscellaneous.

BREECH LOADING GUN.—Julian Warnant, Creon, Hoigne-Cheratte, Belgium. This gun has a movable breech block with cartridge-receiving aperture, in which slides a bolt to throw the cartridge and form an abutment, a pivoted locking bar engaging the bolt, which also carries a firing pin, the invention embracing other novel features, and the gun being self-loading and self-cocking, and automatically ejecting the empty shell.

VENTILATING APPARATUS.—George H. Burrows, Somerville, Mass. This invention provides an expansible air tank or reservoir constructed on the principle of a gasometer, in connection with an air supply pipe and pump to draw air from an elevation or other desired point, and a delivery pipe connected with the rooms to be ventilated and adapted to pass the air through a heater if desired.

DREDGER.—Hugo Roessler, Erbach-on-the-Rhine, Germany. The vessel carrying this apparatus has offsets on opposite sides, near which are arranged centrifugal pumps provided with suction and delivery pipes, prolonged pipes having a ball and socket connection with the delivery pipes, for removing sand and similar deposits at the bottom of a river or harbor by directing a powerful stream against the material to be removed.

FENDER FOR VESSELS.—Gustave O. Stein, Pioche, Nevada. The bow or cutwater of the vessel is, by this invention, provided with one or more vertical rollers, hinged in a frame supported by horizontal arms, whereby the rollers will be canted and tilted in one direction or the other and roll along the sides of a vessel against which they may strike, without doing damage.

DRILLING MACHINE.—Thomas Stanley, Pueblo, Col. Combined with the framing, operating mechanism and drill rope, are levers which support a hanger for the drill devices, and ropes connecting the outer ends of the levers with the operating mechanism, the invention covering a novel construction and arrangement of parts for a machine designed to drill wells or to dig post holes, etc.

BOTTLE FILLING APPARATUS.—Amalia M. Donally, New York City. This invention

covers a novel construction and combination of parts in a device whereby bottles may be conveniently and expeditiously filled from a storage tank, keg, etc., while the arrangement is such that the liquid so conveyed to the bottles will be prevented from foaming.

BARREL WASHER.—George A. Bidwell, Pittsfield, Mass. A hollow rotating shaft is adapted for connection at one end with a steam and water supply, its other end being formed as a support for the barrel, while a branch pipe leading from the shaft is adapted to discharge into the barrel, and an adjustable support for the barrel is arranged in line with the shaft.

GRATE SUPPORT.—Charles L. Beers, Scranton, Pa. This is a support for the grates of cooking stoves, furnaces, boilers, etc., designed to be simple and inexpensive in construction, and to be readily attached to or detached from the fire pot, the supporting frames being of such form that they may be cast in the ordinary moulds now in use.

VEHICLE SEAT.—Thomas J. Kerstetter, East Brady, Pa. This invention covers a seat-back support formed from a rod of spring metal bent to form the base part, the side rail, the portion connected with the back, and the upright brace arranged to brace the portion which connects with the back bar, the seat and back bar being of any suitable construction, and the supports being sufficiently yielding to conduce to the comfort of riding.

CLOTHES HANGER.—Emil Sundberg, Eureka, Cal. This is a device of such construction that all the clothes hung thereon may be quickly removed, consisting of a simple and inexpensive rack of novel form, whereby, when the clothes are withdrawn from the rack, they will form into a bundle which may be thrown over the shoulder and conveniently carried.

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FEBRUARY NUMBER.—(No. 64.)

TABLE OF CONTENTS.

1. Handsome plate in colors of an elegant residence on Chestnut Hill, Mt. Vernon, New York, erected at a cost of \$12,000 complete. Two perspective views, floor plans, etc.
2. Colored plate representing an attractive residence at Auburn Park, Chicago. Cost \$7,000. Floor plans, perspective elevation, etc.
3. Plans and perspective view of a carriage house erected at South Orange, N. J., at a cost of \$2,700 complete. H. H. Holly, Esq., architect, New York.
4. A residence at South Orange, N. J. Cost \$11,000 complete. Perspective elevation, floor plans, etc. Architect, H. H. Holly, New York.
5. Handsome residence of Gothic design at Germantown, Pa., erected for Mr. B. P. Wilson. Perspective elevation and two floor plans.
6. Cottage in Sophia Avenue, Chicago, estimated cost \$2,800. Floor plans and perspective elevation.
7. Perspective elevation and floor plans of a recently erected cottage at Stratford, Conn. Cost \$2,700 complete.
8. A colonial residence erected at South Orange, N. J., from plans by Rositter & Wright, architects, New York. Cost \$17,000 complete. Perspective elevation and two floor plans.
9. Cottage at Austin, Chicago. Estimated cost \$3,700. Floor plans, perspective view, etc.
10. Floor plans and perspective view of an elegant cottage at Austin, Chicago. Cost about \$5,000.
11. A corner of a boudoir, designed by J. Armstrong Stenhouse. Half page illustration from a colored drawing, which appeared in the Royal Academy exhibition last year.
12. A picturesque cottage of moderate cost at Austin, Chicago. Two floor plans and perspective elevation. Estimated cost \$900.
13. Miscellaneous contents: Jarrah wood.—Biographical sketch of Henry Schliemann, the archaeologist.—Bronze castings.—The SCIENTIFIC AMERICAN a help to builders.—American stone fields.—How can iron pulleys be papered?—England's favorite hard woods.—Floors.—Plaster.—Developments of construction.—Corrosion of zinc in contact with brick.—Etching upon glass.—Magnesia in cement.—Our last year's volume.—Improved wood-working machinery, illustrated.—A novel calendar, made of tin.—Broughton self-closing basin cock, illustrated.—The Edison recording pressure gauge.—A new gasoline engine, illustrated.—Universal file handle, illustrated.—The Dunning hot water heater.—Improved conduits for electric wires, illustrated.—A thoroughly built parlor door hanger, illustrated.—California fruit.—Labor-saving appliances for the carpenter and builder, illustrated.

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Notes & Queries

HINTS TO CORRESPONDENTS.

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(2832) H. A. B. asks for a liquid stove polish. A. Mix 2 parts copperas, 1 part dry boneblack or drop black, 1 part black lead, with enough water to form a creamy paste. Apply with a dauber. The bone black must be finely ground, and the purer the black lead, the better.

(2833) J. J. L. asks how many grains are intended for one ounce used in photographic formulas? I notice some state particularly 437½ grains to one oz., while others do not mention it. Is 480 grains intended when not otherwise stated? A. Yes; 437½ grains is the standard commercial ounce avoirdupois, at which photographic chemicals are sold by manufacturers. When the number of grains is not mentioned, 480 should be used, which is the Troy ounce.

(2834) W. O. D. asks: What can be mixed with plaster of Paris in order to make it harden slowly? A. Three to ten per cent of powdered marsh-mallow root.

(2835) A. W. R. asks for a recipe for an ink with which to write and draw on glass for lantern slides. A. Use very thick India ink. Also see query No. 2704

(2836) L. L. B. asks: 1. What is the best receipt for laying down eggs from June till December? A. Dipping an instant into melted lard or paraffin, or oiling with linseed oil followed by packing in oats or bran, is recommended. Or make a pickle of 1 bushel of lime, 8 quarts salt, 250 quarts of water. Immerse eggs in it, constantly stirring as they are inserted. 2. What is the best receipt for any person to do up fine shirts and collars, that will polish well and not be yellow when done? A. For laundry work we refer you to our SUPPLEMENT, No. 577, and to the SCIENTIFIC AMERICAN, No. 9, vol. 61. 3. What is the nearest point to the north pole that has been attained by any one yet? A. The highest northerly latitude was reached by Lieut. Lockwood and Sergeant Brainard, in 1883. It was on the northern coast of Greenland, at 83° 24'. 4. Could a pine box be partitioned off, and corners be painted so that it will answer for battery cells? A. Yes; it is often done. Coat with following mixture: 4 parts resin and 1 part gutta percha, with a little boiled oil and enough ground pumice to work well.

(2837) S. E. D. says: 1. Can I make a good stock toning solution, to tone black, one that will keep well, by following formula:

- A
Chloride gold..... 15 grs.
Water 2 oz.
- B
Bicarbonate of soda..... 115 grs.
Water 4 oz.

1 drachm A, 2 drachms B and 8 ounces of water. If not a good formula, please give me one that is. A. The formula is good, but for black tones the horax toning bath described on page 225 of the April 13, 1889, issue of

the SCIENTIFIC AMERICAN is considered better. It should be mixed fresh shortly before using. 2. I would like a formula for a stock developer, one that can be used repeatedly, and that will give density. I want it more especially for instantaneous exposures which are rather under-exposed. I have been using an eikonogen developer similar to one of those mentioned in "Development of Dry Plates," by Mr. Burbank, but it gives very thin negatives, with such faint detail that they have to be printed in the shade. Is there no remedy? A. With any developer that may be devised it is impossible to produce an image if the light has had no effect on the sensitive film, as is the case when a plate is described as being rather under-exposed. Generally such exposures only develop on the surface, as the light has not had time to affect the underlying particles of silver. We advise the use of the eikonogen and potash developer. If this fails to produce an effect, no other developer is likely to. Makethe eikonogen as follows:

- No. 1.
Warm water..... .40 oz.
Sulphite sodium..... 2 "
Eikonogen..... 1 "

- No. 2.
Water..... 3 oz.
Carbonate of potash..... 1 "

Take two ounces of No. 1, and add from one to two drachms of No. 2, or three drachms if necessary to bring out the details, allow from half to three-quarters of an hour's time for the development of one plate, should it be greatly under-exposed, and see that the temperature of the solutions is 70° Fah. Density is only obtained by a strong eikonogen solution and length of time of development. 3. What is the cause of the bubbles which form between the albumen and the paper in silver prints? How can I avoid them? And if they are not to be avoided, how can I cure them? A. Air bubbles in albumen prints are usually due to the difference in temperature of the different solutions; they should all be kept at 70° Fah. If the prints are put into a weak solution of salt and water prior to toning, their appearance may be prevented.

(2838) T. C. B. asks: Is it not a fact that statistics show that the Indians in the United States are increasing in numbers? That is, has not each reservation a larger population than twenty years ago? A. Indian statistics are not very reliable. The point you make has been advanced before. They are decreasing on the reservations. From 1889 to 1890 there was a decrease of over 1000 out of 133,382 reservation Indians.

(2839) A. B. asks how to make a paste for mounting photograph prints. I have tried starch paste by the formula given in books on photography, but in some cases the corners of prints come loose, so should like to have a formula that you could recommend, both as to quality for holding the print on card mount after reasonably rough usage, without corners becoming loose, and to contain no chemical that could in any manner cause the print to fade. I am using Bradfisch aristotype paper. Should the prints be wet or moistened?

- A. Nelson's No. 1 photographic gelatine.... 4 oz.
Water..... 16 "
Dissolve the gelatine in warm water, then add:
Glycerine..... 10 oz.
Alcohol..... 5 "

- Another mountant is as follows:
Arrowroot 150 grs.
Water..... 3½ oz.

Previous to adding the arrowroot dissolve in warmed water 15 grains of gelatine. After boiling them with the arrowroot added, let it cool and add 2½ drachms of alcohol and a few drops of carbolic acid. The prints should be slightly moistened prior to mounting. It is a good plan too to put them in a hand screw copying press for a minute after mounting, which insures even contact of all portions of the picture. 2. Please inform me of a method of producing a good *glace* finish on photographs. A. A *glace* appearance may be given to prints by rubbing over the surface lightly with clean flannel the encaustic paste made by dissolving in 200 grammes of benzole the following ingredients:

- Gum elemi..... 10 grms.
Essence of lavender..... 300 "
Oil of spike..... 15 "
Filter and add
Pure virgin wax..... 500 "

The whole should be set on a water bath, which will aid in dissolving the wax. To make the paste thinner add more of the essence of lavender.

(2840) G. E. asks (1) how to prepare the white that is used by gilders on white and gold frames. A. Soak 4½ ounces fine glue in water, add water to 1½ pints, boil. Mix 8¼ ounces Spanish and 4½ ounces French chalk, triturate with the glue water, and apply in spattering. The mass should be of consistency of syrup. 2. How to make composition ornaments hold to polished shellac surfaces. A. Scrape off the shellac. 3. What is a laminated core? A. A core made of sheet metal in layers. 4. What is vulcanized fiber? A. In general some form of parchmentized paper. Parchmentizing is effected by immersing paper in a cold mixture of 2 volumes oil of vitriol and 1 volume water, washing in water and then with dilute ammonia. 5. How can shellac be dissolved without using alcohol? A. By borax solution, or after long standing by strong ammonia water.

(2841) O. M. says: 1. Will you kindly publish the names of the various photographic printing processes employed at the present time, stating their respective merits, also a brief description of their manipulation? By doing so you will greatly oblige an amateur photographer who is undecided as to the printing method he should adopt. A. We advise you to consult "The Amateur Photographer," by Ellerslie Wallace. Price \$1. Also Wilson's "Quarter Century of Photography." Price \$4. 2. Is the inhaling of vapors arising from the manufacture of oil varnishes deleterious to health? A. If the manufacture is carried on in a confined apartment, yes. 3. Are the lenses such as used in No. 4 Kodaks made from solid pieces of glass? A. We think they are. 4. In any case how many sections are there? A. Claimed to be achro-

matic, two sections in front and rear. 5. Would not the employment of a thicker celluloid film for negatives prevent the same from stretching and losing its true flat surface? A. Yes, but it would be more costly. Carbutt's films are thicker than others.

(2842) M. B. asks: 1. Can you develop dry plates after night by a ruby light in a small room, just the same as in a closet or dark room in daylight? A. Yes. 2. After fixing the negative and rinsing in water, can the plates be exposed to the light while drying, or must they be left in the dark room until perfectly dry? A. Day light will not hurt them. 3. In producing a positive, can you print from the negative without the rays of the sun? If so, in what way? A. Yes; by using bromide paper and a kerosene light.

(2843) J. H. asks: 1. Could you give formula for a ferrotypic varnish which would dry very glossy when applied to the finished tintype cold or warm? A. A varnish may be made as follows:

- Alcohol (95 per cent strong).....50 parts.
White shellac.....12 "

To which add a few drops of oil of lavender. 2. There is a certain varnish sold as celluloid varnish, which smells strongly of bananas; could you give approximate formula of it? Would this last celluloid varnish not answer the purpose for tintype varnish? A. We think it is largely composed of pyroxyline and a solvent. It can be used on ferrotypes without heat, and should give a good gloss. The varnish is made by the Frederick Crane Chemical Company, Short Hills, N. J. 3. Please give a description of how to make the simplest constructed developing rocking machine, that will rock for at least half an hour. A. Suspend a pendulum rod three feet long from a bench, with a heavy weight attached to the lower end. Arrange a flat plate at upper end, on which rest the developing dish. Pushing the pendulum once in a while will keep it in motion, or a clock movement can be attached to do it.

(2844) F. A. H. asks how to prepare views for the magic lantern. A. Use the Eastman or Carbutt lantern slide plates, to be had from dealers in photo. materials. Consult Ellerslie Wallace's book, "The Amateur Photographer," price \$1.

(2845) J. W. F. asks: 1. How to dissolve crude or virgin rubber so it will be perfectly pliable and absorb all waste gold around a finisher's bench in a book bindery. A. You need what artists use under the name of burned rubber. Its manufacture is described in "Rubber Hand Stamps and the Manipulation of Rubber," \$1 by mail. 2. How are the water marks made in silk? A. By hot calendering between engraved rollers.

(2846) C. R. M. says: I have a camera the bellows of which leaks light very badly. What application can I use which would afford an impervious coating, to repair the damage? A. Dissolve some shellac in alcohol, add lamp black till it is black, then apply with a brush until the holes are filled. If this does not answer, paste strips of thin rubber over damaged parts with rubber cement.

(2847) C. M. W. asks: Is the using of condensed steam in a boiler injurious to the boiler? Some claim that it eats the flues out more rapidly after having been condensed, that the acids from animal oil lubricants is the cause, and that mineral oil lubrication does not leave any injurious acid. Others claim it is some natural property of the condensed steam that causes the trouble, and not the fatty acids. Please state whether it is true that condensed steam reused in a boiler is injurious, and if so, please give fully the cause. A. The water from condensed steam does no harm to boilers. If the engine oil or tallow is carried in with the water, it is a damage to the boilers. It collects dirt and scale and forms an oil cake that may lodge on the shell over the fire or on the tubes and cause them to burn or bulge. The acids of fat lubricants are injurious to boiler tubes. If it is necessary to use the exhaust steam, it should be condensed and run into a separating tank, where the oil could be skimmed off.

(2848) M. E. M. writes I want to use an incandescent lamp of one candle power at night to see what time it is on my watch by pressing a button, lamp not to be lighted any more than a minute at a time. A. Use two cells of Leclanche battery. If used for no other purpose, the battery should work well for at least six months without attention.

(2849) T. D. W., Jr., asks: Can you give me any information or any book in which I can find how to place a photograph on a brick so as to use it as a paperweight? I have a brick from an old church that has been pulled down, and the lot sold. On this brick I wish to place a photograph so that it can be easily seen. Would it be possible to make it smooth enough to put a film on it, as in the wet plate process, and if so how could the brick be made smooth enough to do this? A. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 382. Get some stone cutter to polish the surface of the brick, then brush over it a silicate of soda solution; when dry brush over a solution of gelatine 5 grains dissolved in water 10 ounces. Then make a positive print of the picture on Eastman's transferotype bromide paper, and squeeze it on to the brick. After removing the paper and drying, protect with a coating of diamond varnish.

(2850) W. H. writes: You sent me a recipe for a magnesium compound composed as follows: Chlorate of potash.....3 parts.
Perchlorate ".....4 "
Magnesium powder.....3 "
Now I have tried to obtain perchlorate of potash at all the largest chemical places in Boston, without success. One chemist said he could make me some, but it would immediately be converted into chlorate upon exposure to the air. A. It is made by projecting powdered chlorate of potash into warm nitric acid, and on standing, or if necessary after evaporation, the crystals separate, as it is not very soluble. It can be prepared by any competent chemist and will not decompose as stated in your query.

(2851) J. R. W. asks how a deposit of copper deposited from a bath of copper sulphate may be made to adhere permanently to a rod of soft iron. It will deposit rapidly, but is easily washed off. A. You

can only produce adherence of a thin coating by simple immersion. To get a thick one you must use a battery and preferably a cyanide solution of copper. See our SUPPLEMENT, No. 310, for details, etc.

(2852) W. H. asks: Which is the poorer conductor of heat, glass, china, stone, or earthenware, and can they be modeled in any shape or form? A. We should think there would be little difference. Almost any shape can be given them.

(2853) R. M. L. asks in what numbers of SCIENTIFIC AMERICAN he can find good paste solutions for gummed paper, such as will not stain, stick too tight, or be poisonous. A. Gum arabic with enough oil of cloves to give a slight perfume is excellent. See SCIENTIFIC AMERICAN, vol. 53, No. 15. We have many times published postage mailable in the queries. Tight sticking is considered desirable.

(2854) G. F. C. asks: 1. If I place a lighted lamp (oil or spirit) or a candle in a jar or vessel and immediately hermetically seal it, when the light is extinguished, what will the vessel contain? What will the pressure on the inside of the vessel be? Or what fraction of a vacuum will I obtain? A. The pressure will be slightly reduced on cooling, so as to produce a slight vacuum of perhaps one or two pounds to the square inch less than atmospheric pressure. 2. Can I ignite an oil or spirit lamp with a battery? If so, what number of cells will I require? A. You can by arranging a fine platinum wire across the wick, and heating it to white heat. Three or four bichromate cells should suffice. It is not a very practical method. 3. What material could I substitute for a lamp which would readily ignite and take up the oxygen? A. Phosphorus will absorb oxygen without igniting. Nitric oxide and water will do the same. A hydrogen flame will be effectual also. 4. Can a vacuum or partial vacuum be obtained by means of a battery? A. A rod or filament of carbon made incandescent will combine with the oxygen of the air and form carbonic acid gas. If a little caustic soda or lime is in the vessel, this will absorb the gas in question, and on cooling there will be a reduction of pressure of about 3 lb. to the square inch.

(2855) H. B. L. asks: What to put into silver polish paste mixed with water to keep it from drying up. A. Glycerine.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

February 10, 1891,

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers, including: Acid, apparatus for making sulphuric, E. & J. Delph; Air systems, automatic separator for compressed, V. Popp; Alloy, aluminum, J. A. Jeannon; Animal trap, G. R. Smith; Arc light, R. H. Mather; Arc light, S. J. Schwabe; Atomizer, E. T. Kassel; Axes, device for securing wheels to, L. Faris; Axes, dust guard for car, W. McKenzie; Bake pan, A. J. Iden; Baling press, J. W. Brown; Barrel stand and truck, tilting, R. K. Curtis; Bathtub, separable, M. Doelle; Bearings, lubricant lining for friction, W. Friedl; Belt, H. Leck; Belt gear, M. Masters; Bench, See Shoemaker's bench; Bicycle, S. A. Brown; Bicycle, Hibbert & Manuel; Bicycle, J. H. Kane; Bicycle, W. Scantlebury; Bicycle crank, W. Blakely; Bicycle seat, J. A. Lamplugh; Binding strap, L. L. Tower; Blast furnace, S. Parker; Block, See Lubricant block; Board, See Game board, ironing board; Boiler, See Gas fired boiler, Paper pulp boiler; Steam boiler; Bolt or rod cutter, E. A. Munson; Bolts, dye for making, T. J. Bush; Book protector, Becker & Suggree; Book rest or support, adjustable, C. W. Beannon; Book stand, adjustable, A. H. Edgren; Boots of shoes, blacking and burnishing, W. W. Crooker (r.); Boring machine, A. M. Jewell; Bottle cap, ejecting, G. P. Yule; Bottle case, S. E. Hyndman; Bottle case, C. E. Marlow; Bottle, nursing, J. E. Monroe; Box, See Journal box, Letter box, Match box, Multiple call box; Brake, See Car brake; Brake mechanism, automatic, W. R. King; Brick machine, C. V. Hemenway; Brick or tile machines, cutting table for, J. A. & F. E. Frey; Bridge, M. C. Frita; Bridge, suspension, E. E. Runyon; Brush, blacking, W. J. Scott; Brush board spring, W. H. Sparks; Bullet mould, J. H. Barlow; Burner, See Gas or hydrocarbon vapor burner; Button fastener, J. H. Vinton; Cable lifter, automatic, J. B. French; Camera, See Photographic camera; Car for paint, etc., C. F. & C. F. Stiles; Car brake, cable, J. P. Waite; Car coupling, W. Joanson; Car coupling, W. I. & J. E. Lankford; Car coupling, W. H. Lewis; Car coupling, P. J. Walker; Car coupling, G. W. Weller; Car fender and brake, combined street, G. T. Hall; Car, railway, B. S. Henning; Car, railway, H. Marshall; Car roof, A. W. Zimmerman; Car safety platform, railway, S. L. Davis; Car seat, C. G. Hines; Car, sleigh, E. G. Allen; Car track cleaner, oscillating, J. E. Chambers; Cars, center bearing plate for platform, C. T. Schoen; Card or ticket case, A. A. Low;

Table listing inventions with patent numbers, including: Carding machines, flat supporting device for, J. E. Prent; Carpet, J. W. Priestley; Carpet fastener, A. V. Wiskocil; Carpets, manufacturing figured pile, J. Dunlap; Cart, dump, P. Flaminio; Cart, road, F. Weyandt, Jr.; Case, See Bottle case, Card or ticket case, Lock case; Cash indicator and register, J. F. Goodridge; Cash register, C. H. Drury; Cash register and check machine, G. B. Massey; Cash register and indicator, B. Moser; Ceiling, metallic, W. K. Kinnear; Chair, See Reclining chair, Tilting chair; Chair, J. W. Craig; Check book, K. G. Bareis; Churn, J. McBride; Churn closure, S. D. Palmer; Churn operating device, W. J. Knox; Cigar mould, A. Jaenicke; Cigar mould, Meyer & Huppman-Gerard; Cigar or cigarette holder, E. B. Burr; Cleaning rod, See Car track cleaner; Closet, See Crematory closet; Clothes drier, M. L. W. Martinot; Clothes drier, W. A. Newman; Clothes line, H. E. Percival; Clothes line, pinches, H. E. Percival; Cock, for mixing gas and air, R. Guebde; Coin holder and package, J. Hock; Collar fastening, horse, Johnson & Reichert; Colored impressions, producing, R. Schorr; Cooking apparatus, electric, J. O'Meara; Cook, for food, Neubaus & Daus; Cotton stalk puller, L. J. Womack; Cotton, storage of, L. Smith; Countershaft, A. D. Pentz; Coupling, See Car coupling, Shaft coupling, Thill coupling; Cranes, jib, P. L. & A. A. Weiner; Crate, E. H. Flory; Creaming machine, D. M. Weston; Crematory closet, ventilated, W. L. Fuller; Crupper fastener, G. H. Davis; Crushing machines, elevator and screen for, W. H. Baxter; Culinary purposes, time alarm for, W. E. Groves; Cultivator, balanced, J. M. W. Long; Culvert, roofed, W. D. Harris; Cup, See Oil cup; Cutter, See Bolt or rod cutter, Fruit and vegetable cutter, Paper cutter, Vegetable cutter; Cuff, shirt, W. E. Simonds; Cylinder lock, Sargent & Page; Cylinder lock, J. H. Shaw; Davit, boat, G. F. Lawley; Detecting packing composition, J. Fottrell; Door, for rapid, Neubaus & Daus; Door check, F. L. Hablston; Door hanger track, A. L. & A. H. Scranton; Doors, pneumatic apparatus for operating, C. A. Tucker; Drift, See Coal drifter; Drill, See Grain drill; Drilling device, track, B. F. Smith; Dust collector, H. Bittinger; Dust pan, C. L. Bellamy; Dye, yellow, W. Pfitzinger; Dyeing straw goods, etc., apparatus for, A. A. Yarnall; Electric cables, laying, C. H. Wilson; Electric currents, automatic potential regulator for, A. L. Ellis; Electric machine and electric motor, dynamo, E. A. Howland; Electric motor, L. S. Harris; Electric switch, E. A. Sperry; Electrode, secondary battery, M. M. Slatery; Elevator, See Pneumatic elevator; Elevator, C. E. Onley; Elevator, A. Sundh; Elevator, hoisting drum for, P. L. & A. A. Weiner; Embroidering machine, H. Hochreutener; End gate, wagon, B. S. Kearney; Engine, See Rotary engine; Engines, governing the movement of pistons in, H. H. Hagan; Envelope machine, D. Rau; Extractor, See Stump extractor; Fan, automatic, T. R. Evans; Fanning mill, Felsler & Werel; Fastening, S. Richardson; Feeders, for rapid, Neubaus & Daus; Fence, flood, Casselman & Fletcher; Fence machine, Cline & Deltwiler; Fence, portable farm, Clausen & Jones; Fencing machine, silt and wire, R. Hoover; Fender, See Car fender; Fender, C. G. Petherer; Filing papers, etc., cabinet for, S. G. Browne; Filter, H. Goodacre; Filter, J. S. Ronke; Fire armor, Finn & Pappa; Fire escape, G. Muller; Fire extinguisher, S. C. Scantlebury; Fire indicator and extinguishing system, S. Broichgans; Fireplace, J. P. O'Brien; Fishing reel, J. B. Moscrop; Flour bolt, C. A. Schied; Food storing and preserving apparatus, L. Smith; Freezing apparatus, J. Erny et al.; Fruit and vegetable cutter, C. H. Dana; Furnace, See Blast furnace, Hot air furnace; Game board, Brown & Crosby; Gas, apparatus for the reduction of petroleum into, P. Durr; Gas fired boiler, E. C. Jones; Gas mixing machine, J. Taylor; Gas or hydrocarbon vapor burner, G. Roberts; Gas pipe screen, C. W. Weller; Gate, See End gate, Railway crossing gate; Gate, R. C. Cash; Gate, R. S. Taylor; Gearring mechanism, back, B. G. Luther; Generator, See Steam generator; Glass blowing machine, P. Weller; Grain apron, J. E. Vanhorn; Grain drill, W. F. Hoyt; Grain silo, floating, L. Smith; Grain transfer, storage, and preservation station, pneumatic, L. Smith; Grease process of and apparatus for purifying, G. Race; Grinding and polishing machine, B. E. Sperry; Grinding machine, A. B. Jandis; Grinding mill, J. A. & J. Jones; Guard, See Railway cattle guard; Gun safe, device for breech-loading, F. A. Hollenbeck; Handle, See Tool handle; Harrow, Downey & Green; Harrow, M. J. Todd; Harrow and pulverizer, sulky, C. D. Roberts; Hay rake, S. G. Everett; Hay and staple, C. Hancock; Hasp lock, W. R. Morse; Hat making machines, expandible cone for, F. M. Starr; Hay press, J. B. Boreman; Heat regulating apparatus, G. I. Shorey; Heat regulating system, switch board for, C. W. Brieder; Heater, See Hot air, steam, and hot water heater, Water heater; Heel, C. G. Petherer; Heel making machine, Fahney & Taylor; Heel seat forming and edge setting machine, M. I. Wright; Heeling machine, Glidden & Elliott; How trap, N. C. Bader; Hoop, for cigars and cigarette holder, Coin holder, Jar holder, Map holder, Meat holder, Paper holder, Photographic plate holder; Hook, See Check hook; Horse checking device, Wardwell & White; Horse, controlling gear for draught, R. S. Kinross; Horseshoe blanks, machine for forming, W. J. Kent; Hot air furnace, P. C. Hoyt; Hot air, steam, and hot water heater, combined, W. H. Deblow; Hub, anti-friction, C. J. Appiequist; Hub, vehicle, J. T. Hart; Ice machine, E. J. Hardy; Ice making and refrigerating, T. Rose; Ice tong, J. Brinkerhoff; Incubator, C. E. Von Culin; Incubator, A. P. Hazzard; Indicator, See Cash indicator, Fire indicator, Station indicator; Inkstands, fountain attachment for, J. V. Berzen; Insulating coupling block and cut-out, Bergman; Insulator, electric, J. R. Wencil; Iron bars or beams, machine for curving, B. F. Haugh; Ironing board, A. Sommerfeld; Jack, See Pegging Jack, Truck Jack;