Business and Lersonal.

The Charge for Insertion under this head is One Dollar a line for each insertion. If the Notice exceeds four lines, One Dollar and a Half per line will be charged.

Glass Cylinders Tempered in Oil. T. Degnan, 129 Milk St., Boston, Mass.

Wanted-The address of the proprietor and manufac tory of the Counts Fruit Gatherer. Reply to J. C. Stribling, Pendleton, S. C.

Diamond Drills, J. Dickinson, 64 Nassau St., N. Y.

Practical Plumbers wanted as Agents for Improved Hydraulic Engine (highest Centennial award) for Blowing Organs. Address H. L. Roosevelt, Church Organs,

Steam Yachts for sale, new, 14 feet long, 4 feet beam Steam Taches for sate, new, 14 feet long, 4 feet beam, 1 h. p., \$255; 21 feet long, 5½ feet beam, 2 h. p., \$425. Shipping weights 450, 800, and 1,200 lbs. Will carry comfortably 4, 8, and 12 persons. Send for particulars. S. C. Forsaith & Co., Manchester N. H. Manchester, N. H.

Manufacturers can buy or lease Hydraulic Power in any quantity, at very low rates, at Rock Falls, Ill. A. P.

One hundred Salesmen are employed in the Retail Warerooms of Baldwin the Clothier. The branch house in Brooklyn holds there the same relative place that the Broadway and Canal street headquarters hold in New York. The sales are three times larger than any other house can show, and the stock displayed four times greater. The leader of the retail clothing trade is Baldwin the Clothier.

Easy Flowing Silver on Hard Solder and small Metal Tubing. John Holland, Cincinnati, O.

Capital wanted by A. Daul, 363 Morris Ave., Newark N. J., for Postage Stamp Canceller, and Horse Car and Omnibus Control.

Wanted-Proposals to make about 10 Tons Engine Castings, large and small. Address Box 2132, N. Y. city

600 New and Second-hand Portable and Stationary Engines and Boilers, Saw Mills, Wood Working Machines, Grist Mills, Lathes, Planers, Machine Tools, Yachts and Yacht Engines, Water Wheels, Steam Pumps, etc., etc., fully described in our No. 11 list, with prices annexed. Send stamp for copy, stating fully just what is wanted. Forsaith & Co.. Machine dealers, Manchester, N. H.

New Lathe Attachments, such as Gear Cutting, Tap and Spline Slotting. W. P. Hopkins, Lawrence, Mass.

Amateur Photographic Apparatus, Chemicals, etc. Complete outfits, \$5 to \$25. E. Sackmann & Co., manufs.,

Painters.—Send for new prices of Metallic Graining Tools, for "wiping out." J: J. Callow, Cleveland, O.

For Sale.-Combined Punch and Shears, and Engine Lathes, new and second-hand. Address Lambertville Iron Works, Lambertville, N. J.

Gas lighting by Electricity, applied to public and private buildings. For the best system, address A. L. Bogart, 702 Broadway, N. Y.

Power & Foot Presses, Ferracute Co., Bridgeton, N. J

Superior Lace Leather, all sizes, cheap. Hooks and Couplings for flat and round Belts. Send for catalogue. C. W. Arny, 148 North 3d St., Philadelphia, Pa.

F. C. Beach & Co., makers of the Tom Thumb Telegraph and other electrical machines, have removed to 530 Water St., N. Y.

For Best Presses, Dies, and Fruit Can Tools, Bliss & Williams, cor. of Plymouthand Jay Sts., Brooklyn, N.Y.

Lead Pipe, Sheet Lead, Bar Lead, and Gas Pipe, Send for prices. Bailey, Farrell & Co., Pittsburgh, Pa

Hydraulic Presses and Jacks, new and second hand, Lathes and Machinery for Polishing and Buffing metals E. Lyon & Co., 470 Grand St., N. Y

Solid Emery Vulcanite Wheels-The Solid Original Emery Wheel - other kinds imitations and inferior. Caution,-Our name is stamped in full on all our best Standard Beiting, Packing, and Hose. Buy that only, 'The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, N. Y.

Consumption Cured.—An old physician retired from active practice, having had placed in his hands by an East Indian missionary the formula of a simple vegetable remedyforthe speedy and permanent cure for Cobsumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung affections, also a positive and radical cure for Nervous Debility and all nervous complaints, after having thoroughly tested its wonderful curative powers in thousands of cases, feels it his duty to make it known to his suffering fellows. Actuated by this motive, and a conscientious desire to relieve human suffering, he will send, free of charge to all who desire it, this recipe, with full directions for preparing and successfully using. Sent by return mail by addressing with stamp, naming this paper, Dr. J. C. Stone, 32 North Fifth Street, Phila-

Steel Castings from one lb, to five thousand lbs. Inaluable for strength and durability. Circulars free. Pittsburgh Steel Casting Co., Pittsburgh, Pa.

For Solid Wrought iron Beams, etc., see advertise nent. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Wanted - A first-class Wood Engraver. Address Engraver, P. O. Box 271, Cincinnati, O.

Wanted .- A first-class Mould Maker on Undertakers' Hardware. Address Mould Maker, P. O. Box 387, Cin-

Shingle Heading, and Stave Machine. See advertise ment of Trevor & Co., Lockport, N. Y.

See Boult's Paneling, Moulding, and Dovetailing Machine at Centennial, B. 8-55. Send for pamphlet and sample of work. B. C. Mach'y Co., Battle Creek, Mich.

Patent Scroll and Band Saws. Best and cheapest in use. Cordesman, Egan & Co., Cincinnati, O

The Zero Refrigerator was awarded a grand Centennial medal. Send for book. Lesley, 226 W. 23d St., N. Y.

Etterich's Screw Cutting Tools are in great demand. Catalogue free. Frasse & Co., 62 Chatham St., N. Y.

Hyatt & Co.'s Varnishes and Japans, as to price, color purity, and durability, are cheap by comparison than any others extant. 246 Grand st., N. Y. Factory, Newark

N. J. Send for circular and descriptive price list. Best Glass Oilers. Cody & Ruthven, Cincinnati, O.



W. Z.'s query as to the stick of timber is a schoolboy's problem.-W. A. M. will find directions for making liquid glass on p. 225, vol. 23.-A. D. should ade his query as to the high speed engine at the Centennial.—C. A. H. will find directions formaking battery carbons on p. 187, vol. 32. We cannot recommend particular machine makers in these columns.-J. T. K. will find a description of an incubator on p. 273, vol. 33. -J. F. will find directions for making yeast on p. 185, vol. 30.-L. A. K. will find directions for bluing gun barrels on p. 123, vol. 31. For giving a fine brown color to gun barrels, see p. 11, vol. 32.—F. D. will find a good recipe for tooth powder on p. 72, vol. 34.-F. H. B. W. H. C. will find on p. 154, vol. 34, directions for tinning iron castings. As to polishing metals, see p. 57, vol. 34. -J. L. K. will find directions for making mirrors on p. 267, vol. 31.—R. F. W. is informed that the art of graining is too complicated for description in these columns, -A. L. B.'s query as to postage stamps was answered on p. 203, vol. 36.-A. R. D.'s queries are business questions, and should appear in our advertising columns.

- (1) W. E. W. asks: Can sheets of spring steel be rolled out to $\frac{1}{20}$ of an inch thick, 4 feet wide, and 21 feet long, without flaws? A. Yes.
- (2) D. D. asks: How much clearance should a 12 x 20 inch steam engine of good design, running 120 revolutions per minute, have between the piston head and cylinder head? A. About 1 to 1 inch.
- (3) M. G. says: 1. I have an apparatus for alcium light, with which I have some trouble. My reflector is 18 inches in diameter and about 11 inches deep, and set the lamp how I please, I never get a plain, brightly illuminated surface. The whole surface is covered with black and white rings, in the center of which is a large black spot. As soon as I set the lamp in a different way, the black spot disappears and in its place comes an intense bright one, surrounded by darkness. A. Clean, dry, and polish the reflector, and adjust the jet, with its lime cylinder, facing directly into the reflector so as to concentrate all the light upon its surface. For ordinary purposes the ignited surface of the lime should be within about 2 inches of the back of the reflector. Turn on first a good supply of hydrogen (or coal gas) so as to give a flame of about 6 inches length; then immediately turn on the oxygen, and adjust the supply of gases so that neither will be in excess. If too much hydrogen is on, the flame will flare out around the sides of the lime; if toomuch oxygen, it will either make a singing noise or extinguish the light. A little practice will soon teach you when the adjustment is perfect. The lime cylinder should be within about the 16th of an inch of the tip of the jet, and should be turned occasionally so as to present fresh surfaces to the flame. 2. Which is better for the light, common lime or the prepared lime cylinders, and what do the latter contain. that make them preferable? A. Almost any kind of good fresh lime will answer; but the best results are of course obtained with lime that is pure-free from sand and earthy materials-well burnt, perfectly dry, and caustic. The prepared cylinders of lime arc usually made of the finest and hardest quality of lime, and therefore generally give the best results. The cylinders are best small. 3. Which are better, gas bags, or the copper tanks into which the gas must be pumped? A. greater the pressure of gas, the better the light within certain limits. Wrought iron cylinders, containingthe gases under a pressure of about 15 or 16 atmospheres (225 or 240 lbs. to the inch), are safest and best. Gas bags, when used as reservoirs, should have a total weight put on them of about 500 or 600 lbs. 4. Which is preferable for tinting effects, gelatin plates or colored glass panes? A. Use plates of colored glass.
- (4) W. H. R. says, as to snakes catching fish: During the summer of 1872 or 1873, I was residing in Marriottsville, Md. One day we took a small net about 10 feet long and went to the stream that divides Howard and Carroll counties, for the purpose of catching fish. On one of the hauls, we succeeded in catching about a dozen minnows, about 3 inches long, and a water snake, about 2 feet long. Immediately after raising the net out of the water, the snake glided over the netting to one of the fish and swallowed it down without anyapparent difficulty. As we did not appreciate his efforts in that line, we threw him on the land and stopped his fishing career with a stick. My brothertold me that he once saw a snake swimming in a deep pool just below Marriottsville with a troutin his mouth about 10 inches long.
- (5) S. says, as to patterns for fret saw work: have been using a sheet of thin zinc between my pieces of wood; and by sawing out the patterns pasted on one piece of wood, I obtain a stencil with which any number of patterns can be rapidly made. The stencil
- connection only by a feed pipe have different pressures, what would happen if I open the feed pipe? I think that the water will run from the higher pressure boiler till the pressure is equal, and then the water will come to the same level in both boilers. Am I right? I had four boilers, and two others set about 6 feet above the four, 45 feet long with two 15 inch flues, connected with the coal boilers at the middle and at the end, the connections being set on two steam drums across the boilers. The coal boilers were under 75 lbs. pressure; and having too much steam, I went to open the connecting valve. I felt a strong push ahead by the boilers, enough to crack the walls in two or three places. Can youexplain this? A. The steam as it escaped from the boiler, having the higher pressure, acted precisely as it does in the reaction engine, and moved the boiler slightly.
- (7) F. H. B. asks: Please tell me how to find the area of a circle in square inches? A. Square the diameter in inches, and multiply by 0.7854.
- (8) D. H. M. asks: What is sisal? A. Sisal is the prepared fiber of the agave Americana, or American aloe; so called from Sisal, a port in Yucatan. The

out its great length of 7 to 20 inches. The fibers are used, in the rough state, for cordage,

- (9) G. W. H. says: The specific gravity of wrought and cast iron, as given by various authorities, varies considerably. Why is this? A. It is scarcely possible to obtain pure iron. The metal ordinarily known as iron is virtually a combination of the elements iron and carbon. According to the amount of carbon present, the metal is called wrought iron, steel, malleable iron, and cast or pig iron. The specific gravity of electro-deposited iron is 8.139; that of steel bars and plates averages 7.823; that of tilted or hammered iron bars and forgings ranges from 7.76 to 7.798; that of rolled iron plates or bars varies between 7.76 and 7.54. The specific gravity of cast iron ranges between 6.85 and 7.35; that used in construction averaging 7.1. Wrought iron is very bad in quality when its specific gravity is less than 7.5.
- (10) W. H. W. K. asks: Is there any work that will instruct me how to erect a building that will answer as a kind of refrigerator without the use of ice, that will lower the temperature inside to one half of what it is outside? A. We do not know of any. 2. Have you any drawings of the Alden process of drying?
- (11) E. W. H. asks: Can you give me directions for stamping cashmere, broadcloth, etc., in patterns, that will stay on long enough to have the pattern worked in embroidery? A. Try the following: Prepared chalk, 5 parts; dextrin, 1 part. Rub into a paste of the proper consistence with a strong, hot solution of soap and a few drops of glycerin.
- (12) C. R. asks: What is a reliable test for pure gold? A. One of the most reliable tests for the purity of gold is its specific gravity (19.34). It should retain its luster at all temperatures and resist the action of hot nitric acid. Take a clean piece of slate, make a mark or streak on it with the piece of metal to be examined, note the appearance of this with a strong magnifying glass; heat the slate over a gas burner and note if any change has occurred. If not, moisten it with a drop of strong nitric acid free from chlorine. If this does not affect it, and its specific gravity equals 19.34 or 19.4, it may be considered pure gold.
- (13) R. T. L. asks: How can I remove varnish and paint from window glass? A. Remove as much as you can with a suitable scraper, and rub off the remainder with a cloth saturated with strong ammonia
- (14) B. asks: What is the least amount of nercury that will unite with 1 oz. of pure gold, forming an amalgam, so that no free gold will remain? A. The proportion should be about 33 parts mercury to 57 gold.
- (15) J. M. asks: Please give a recipe for oftening muskrat skins. I have dried a dozen of them by putting alum and salt on them, but they are too hard. A. The skins should be thoroughly washed in clean water and treated with the alum bath and albumen mentioned in answerto C. C. F., p. 251, vol. 36.
- (16) J. R. M., Jr., asks: What is the simplest way to obtain iridiated glass? Is it 100 parts of water to 15 of acid, and how can I obtain the required pressure of from 2 to 3 atmospheres? A. Make a solution consisting of 15 parts of strong hydrochloric acid and 85 of pure water. Place this in a glass vessel in a strong metallic receiver capable of standing a pressure of 100 lbs. to the inch. Close all the openings airtight, and pump in air until the pressure gauge with which the receiver must be provided indicates about 50 lbs. Then allow to stand for several days. You will succeed best with soft glass.
- (17) W. G. asks: Can kerosene oil be adulterated with water? During the winter I bought a lot of kerosene oil and put it into my oil safe; and in a few days I was unable to draw any oil, and upon examination I found that the pipe was frozen full of ice. cleared it, but in a few days it was again stopped with ice, which made me suspicious that the oil was adulterated with water, as I never knew oil to freeze solid. A. No. Kerosene oil and water are not miscible. The water must have got into the tank in some other way.
- (18) J. R. McC. says: A brass moulder told me that he had a lot of old brass given him to remelt. It was a very hard composition, and he was asked if he could make it softer without adding any more copper; he said he could not; one of his men said he could, and he did. He was watched, but no one saw how he did it. Can you explain? A. He probably melted the brass and keptit at a very high heat, so that part of the tin and zinc evaporated.
- (19) J. J. W. says: 1. In a recent issue of the Scientific American I noticed an article which stated that coal oil reproduced a full growth of hair on the head of an old servant who had become hald. Is it true? A. Wethink it is very doubtful. 2. Is there any injurious ingredient in coal oil? A. Yes. 3. Can you tell me of a simple preparation that will prevent the hair from falling out, or one that will make hair grow on (6) B. G. S. asks: If two boilers having a bald head? A. See answer to N. R. on p. 251, vol. 26. As a general rule, hair cannot be made to grow again on a bald head, especially if the baldness is due to the natural infirmity of advanced age.
 - (20) A. C. asks: How are indelible pencils made? A. Reduce nitrate of silver to an impalpable powder, add just enough lampblack to give it a black color, and enough of a thick solution of gum arabic in hot water to make the powder coherent. Rub these ingredients well together, form into thin sticks, and

What is moulders' wax composed of? A. Stearin or

(21) R. P. P. says: This morning I send small bottle of grape wine, which soured on my hands. It is well sugared, and on exposure to the air will evaporate to a thick syrup. How can I redeem it, so that it will be fit to use as a beverage? A. Treat it with enough bicarbonate of soda to neutralize the acetic acid. The proper quantity of the carbonate may be ascertained by first experimenting with a small sample of fiber is white, and of nearly the same thickness through in rendering it again palatable by this or any other A. Waterglass may be mixed with dry zinc white (ox

means, as the second fermentation has been permitted to go so far that a great part of the alcohol has been acetified. If the wine be treated with enough slaked lime to neutralize the free acid, and then distilled, the spirituous constituents may be recovered and utilized.

- (22) Mrs. P. R. V. S. asks: How is glycerin A. The greater part of the pure glycerin is obtained by distilling with superheated steam the dilute solution remaining after the saponification of the oil with lime, in the manufacture of stearin candles. Crude glycerin is obtained in a similar manner from residues of soap-making. 2. What is the difference between glycerin and nitro-glycerin? A. Glycerin is converted into nitro-glycerin by treating it with a mixture of furning nitric and sulphuric acids. This treatment causes a substitution of nitric acid for the hydrogen in the glycerin. They are entirely different in their properties.
- (23) E. H. asks: Why does nitrous oxide gas deteriorate by time? Does the water kill its anæsthetic properties by degrees, giving it up to the atmosphere through the space between the water tank and the gasometer? A. Pure nitrous oxide is a permanent gas at ordinary temperatures, and, when isolated, will retain its characteristic properties for an indefinite length of time. The gas is quite soluble in cold water, and if inclosed in a tight vessel, in contact with a quantity of water, it will displace much of the air held in solution therein, which, mixing with the unabsorbed gas, will of course dilute it. Again, if the water or the gas reservoir contains any quantity of organic matters, they will become oxidized at the expense of a portion of the oxygen of the nitrous oxide, liberating at the same time the equivalent of inactive nitrogen. But ordinarily the chief cause of the dilution may be attributed to the gradual diffusion of air and gas through the water, joints, rubberrubing, valves, etc. As the density of nitrous oxide is something more than that of air, the diffusion is in favor of the entrance of the air over the exit of the gas in the reservoir.
- (24) A. E. D. says: How are moulds for cakes of toilet soap made? I made some of plaster of Paris, and ran the soap in them, but the soap did not form smoothly, little holes forming on the surface. A. Use moulds made of tinned iron.
- (25) E. W. asks: Are the glasses which make an achromatic lens ground separately? A. Yes. 2. Will a single lens 11/2 inches in diameter do for a small camera? A. A single achromatic lens will make & picture whose diameter equals 3 the focal length of the lens. The smaller the aperture, the sharper and better the picture.

What size of engine would it require to run a lathe of 6 inches swing? A. Such a lathe will require 1/4 horse power to work it.

- (26) A. S. B.-Red, brown, green, and other colored crayons are made with fine pipeclay, worked into a paste with water and intimately mixed by grinding with earthy or metallic pigments, or in general with a body of surface colors; then moulded and dried.
- (27) C. B. P. asks: 1. How can I find out whether a telescope is achromatic or not? A. Look at some bright white object, say the moon; and if the edge is not fringed with color, but is clear and white, then the telescope is very nearly achromatic. 2. How can I find out the magnifying power of a telescope? A. Set up two sticks one foot apart at a distance of about two hundred feet from you; look at the sticks through the telescope with one eye and outside with the other. See how many feet on the ground outside the one foot in the telescope appears to cover. This will give the approximate magnifying power.
- (28) G. W. M. asks: Is the article on astronomical observations, published in your issue of March 24, which says that the precession of the equinoxes is 50} minutes of arc, correct? A. It should have been seconds of arc, instead of minutes.
- (29) J. S. asks: 1. How long does an elephant live? A. Elephants attain maturity in 30 years, and live to 150, perhaps to 200. 2. How long does it take elephants to breed? A. The period of gestation is about
- (30) J. E. L. asks: How many square miles of territory has England on this side of the ocean? A. About 3,194,690.
- (31) R. H. R. asks: How can I color red nd polish the edges of books? A. When the edges are trimmed, keep the book in the press, and brush on a coating of dilute gum tragacanth (about 1/2 lb. gum to 11/2 gallons), colored to the desired hue with a mixture of 3 parts rose pink with 1 vermilion. Let dry in the press, and burnish with an agate burnisher.
- (32) B. J. asks: What can I use as dryers for coal tar, when applied as paint? A. We do not know of any such substance; but the addition of a little black oxide of manganese will aid in the drying.
- (33) J. McN. asks: What is the best method of whitening the grease obtained from pork scraps, which, on coming from the press, is quite dark in color? I have tried several things, such as carbonate of soda, alum, etc., but have not obtained satisfactory results. A. Agitate the grease with hot water containing 10 per cent of oil of vitriol, allow the impurities to settle, and draw off the fused grease with a siphon.
- (34) C. I. K. says: I have a lot of cast and vrought iron pipes used for steam heating, running through a battery room. The fumes from the batteries cause the pipes to corrode. Is there any paint which will protect this? A. Coat the pipes with good asphalt, thinned down with turpentine or naphtha.
- (35) E. G. S. says: I find that soluble glass, in the state in which it is in when bought, cannot be used or applied as a paint, by reason of its setting too quickly. I desire to apply it to pine boards, that will be subjected to dampness. I wish to prevent the boards from damp, warping, and smelling, by reason of decay, and thereby prevent the tainting of any matter or eatables that the box may contain. Can soluble glass be mixed with paint in any manner without destroying its

Paper bag, A. L. Slager.....

ide of zinc) or other similar metallic oxide, not affected by it, to form a paint. Ground asbestos mixed into the strong aqueous solution also forms a good paint. It should be applied with a flowing brush, and rapidly. It cannot, of course, be mixed with oil paints.

From what kind of wood is the best charcoal, for pre serving and purifying, made? A. Charcoal made from charcoal is to be used, the best is from willow or other

water at a proper height and steam at 60 lbs. pressure, should be closed so that no steam could escape, and principally of clay containing a large quantity of sesfired enough to maintain the same pressure for 1 hour, would the water be any lower in the boiler at the end of that time than at first? Would there not be the same amount of water in the boiler? A friend claims that there would be less, as the water "would dry up?" A There would be no change in the amount of water.

(37) J. K. M. says: Please give me a recipe for reducing quicksilver to a fluid, for plating brass and copper? A. We do not understand you. Mercury (quicksilver) is liquid at ordinary temperatures. Brass and copper may be coated with mercury by applying the metallic mercury directly to the clean surface of the article to be coated. Or an aqueous solution of the bichloride of mercury (corrosive sublimate) may be used as a dipping bath. Corrosive sublimate is prepared by first converting the metal or its oxides into protosulphate of mercury, and then subliming this with common salt. Or the mercury may be converted into the red oxide by cautiously heating the sulphate, and this, dissolved in hydrochloric acid and the solution evaporated until crystallization takes place, gives the corrosive sublimate. In inexperienced hands, these reac tions are dangerous.

(38) H. F. asks: Can you give me a recipe for making red aniline inks for rubber stamp use? How can I make red and blue ink for stamp ribbons? A. For red, dissolve alizarin or aniline red in warm glycerin. For blue, make a glycerin solution of aniline blue. These inks will serve for ribbons as well as for inking pads.

(39) W. H. asks: How can I convert the degrees centigrade to Fahrenheit and Fahrenheit degrees to centigrade? A. To convert centigrade to Fahrenheit, multiply by 9, divide by 5, and add 32. Thus: 100° C.×9=900; divide by 5=180, $+32=212^{\circ}$ Fah. To convert Fahrenheit to centigrade, deduct 32, multiply by 5, and divide by 9. Thus 212° Fah. — 32=180, $\times 5 \stackrel{!}{=} 900$, ÷9=100° C.

(40) G. H. E. S. asks: 1. How can I produce musical sounds from glass tumblers? A. Moisten the fingers with water, and with their tips pressed firmly on the rim of the goblet, move them quickly around it so as to jar the glass and cause it to vibrate. You will probably succeed after a few trials. 2. What is made use of for moistening the fingers, to produce the sound? A. Water is generally used; but a better way is to moisten the finger tips with a drop of turpentine, and then rub them in finely powdered rosin. If rosin is employed, the goblet must be clean and dry.

(41) W. L. Y. asks: How is French mustard prepared? A. Take salt, 11/4 lbs., scraped horseradish, 1 lb.; garlic, 2 cloves; boiling vinegar, 2 gallons. Macerate in a covered vessel for 24 hours, strain, and add sufficient flour of mustard.

(42) S. B. says: I have seen some chimneys tained. on dwelling houses that sweat, or have the appearance of being wet. Please give the cause. A. Damp air when suddenly chilled precipitates water, as is seen by the result of the air of a room coming in contact with a pitcher of cold water; and from this cause the water coming from flues can be accounted for. When the flue is not used for a fire, it still acts as a ventilator, and as the warmair from the interior of the house comes in contact with the cold air falling from the top of the flue, it throws off its moisture and deposits it upon the inte rior surfaces of the flue.

(43) D.D. says: 1. Has a drum with two partitions, utilizing the heat from stove pipe, ever been tried? A. We are not aware of such a device for that purpose. 2. I am informed that, in London, dwellings are constructed with chimneys that return the smoke to the furnace, where it is burned, instead of throwing it out upon the open air. Can you give me any information in regard to the construction of such chimneys? A. We think there must be some mistake as to there being chimneys of such construction in use in dwellings: many factories in England are compelled by law to construct smoke-burning chimneys. We have not at hand the data required to give the precise nature of their construction. 3. What is the cheapest and best preparation for the preservation of shingles? A. Probably a wash of lime, tinted to suit.

(44) J O. says: We desire information in the matter of conveying water in iron pipes. We wish to carry a spring running about 1 miner's inch (12 gallons per minute) of water a distance of about 5 miles over a broken country. The spring is at least 50 feet higher than the point of delivery. Two thirds of the first mile is a regular descent down a mountain side, fall in that distance being about 600 feet. The remainder of the distance is around the base of a mountain broken up by gulches and ravines not very abrupt. The first two miles gradually descend 50 to 100 feet, thence gradually ascending to point of delivery. We propose to use 1 inch (inside diameter) iron pipe, lap weld, providing some means for the escape of air at every summit, but have been told that water cannot run through a pipe of that size for that distance if the grade was on a straight line from the spring to the point of delivery on account of the friction. Please tell us the best mode of conveying said stream of water? A. The greatest difficulty you have to encounter is in the siphons; but supposing these to work well and no leakage to the pipe, the water will discharge at the lower point notwithstanding the friction. The friction is in proportion to the velocity, but the velocity being reduced to a minimum, the water will flow to some extent; it will also soon acquire a momentum that will in a measure compensate for the fricion, and if received in a reservoir it will finally discharge all the water supplied. Water will find its level, and the important condition here is that the point of discharge shall be lower than the spring.

(45) J. H. asks: What is the best way for testing a boiler, to find out how much fuel it burns? A. We think there is only one method that will be satisfactory, to weigh the fuel before putting it into the fur-

MINERALS, ETC.—Specimens have been rebones (bone black) is best for this purpose. If wood | celved from the following correspondents, and examined, with the result stated:

J. A. A.—They consist of sulphate of iron, together (36) E. H. says: If a steam boiler, having with some organic matter, the nature of which we can not undertake to examine.-J. K. W.-No. 1 consists quioxide of iron. It might be used with oil as a cheap paint. No. 2 is a variety of sandstone. No. 3 appears to be powdered basalt, with small crystals of quartz and sulphide of iron.

> F. H. says: We have a lot of postal cards, on one side of which is printed a circular. Is there any cheap preparation that I can make which will take this printing off, and leave the card fit to write on?

COMMUNICATIONS RECEIVED.

The Editor of the Scientific American acknowledges. with much pleasure, the receipt of original papers and contributions upon the following subjects:

On Prismatic Pictures. By J. C. On a New Motor. By A. M. On Glass for the Studio, etc. By T. G. On Scientific Experiments. By J. P. On Kaolin. By H. K. K.

On Blue Glass. By J. S. B On the Welding of a Mill Spindle Point. By H. B., by A. M. W., by W. J. F., by J. H. P., by R. L. C., by

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H. M.-G. H. B.-A. W. S.-C. R.-L. S. B.-S. R. S. -J. W. F.-F. C.-H. R.-J. M.-C. A. S.-J. D. H. -J. H. C.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are 'Who sells a preparation for blasting tree stumps, sent: ' which is safer than gunpowder, dynamite, or nitro glycerin? Who sells telephones, and what do they cost? Who sells rope belting, and what does it cost? Who sells platinum, nickel, tungsten, and aluminum? Whose is the best mangling machine?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously ob-

OFFICIAL.

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Granted in the Week Ending

March 27, 1877,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

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Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garnaces, etc., heating air for, J. Jenks. Garnaces, feeding air to, J. Jenks. Garnaces, J. Garnaces, J. Garnaces, Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gases, purifying furnace, J. Burt. Hass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Ourham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser. Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denholm. Horseshoe calk sharpener, R. Denholm. Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren.	188,763 188,914 188,917 188,917 188,876 188,919 188,876 188,747 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,755 188,755 188,755 188,755 188,871 188,955 188,675 188,955 188,675 188,955 188,675 188,955 188,955 188,675 188,955
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden seeder, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Frain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser Horse hay rake, J. Hollingsworth. Horse hay rake, J. Hollingsworth Horseshoe ails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson.	188,762 188,913 188,913 188,913 188,836 188,919 188,807 188,816 188,745 188
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Grandense, feeding air to, J. Jenks. Grandense, feeding air to, J. Jenks. Grandenseder, hand, M. Johnson. Grandenseder, hand, M. Johnson. Grandenseder, L. Lindsley. Grandenseder, W. W. L. Kemp Grandenseder, W. W. L. Kemp Grandenseder, Grandenseder, Grandenseder, Grandenseder, Grandenseder, Grandenseder, Grandenseder, Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain reseals, unloading, C. J. Mann Grate bar, H. B. Denny Frindingmill, J. S. Detwiler Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer Heater, B. G. Devoe Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, sawing, G. Thompson Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth Horseshoe rails, finishing, R. Bevelander Horseshoe mails, finishing, R. Bevelander Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren Hose coupling, J. Galvin Hose coupling, J. Galvin	188,763 188,914 188,915 188,917 188,876 188,917 188,876 188,747 188,861 188,747 188,861 188,747 188,861 188,752 188,753 188,753 188,753 188,753 188,753 188,753 188,753 188,954 188,954 188,954 188,957 188,958
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden seeder, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Frain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser. Horse hay rake, J. Hollingsworth. Horse how, J. S. Shelly Horseshoe, G. P. Sheffield. Horseshoe calk sharpener, R. Denholm. Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren. Hose coupling, J. Galvin Hose ottaple, C. M. Enderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect trap, B. Sylvester.	188,763 188,913 188,913 188,913 188,836 188,919 188,807 188,816 188,745 188
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins. Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denholm. Horseshoe calk sharpener, R. Denholm. Horseshoe mails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe syle, C. A. Howard. Hose nozzle, C. A. Howard. Hose conduling, T. L. Rankin. Hose cotale, T. L. Rankin. Hose cotale, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect, destroying, J. Schwerter.	188,763 188,913 188,913 188,913 188,836 188,919 188,876 188,919 188,876 188,747 188,861 188,747 188,861 188,757 188,955 188,757 188,955 188,955 188,955 188,955 188,953 188
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Hoop poles, sawing, G. Thompson. Hoop poles, sawing, G. Thompson. Horse brush, C. W. Beiser. Horse detacher, A. B. Roberts. Horse hote, A. B. Roberts. Horsehoe calk sharpener, R. Denholm. Horseshoe calk sharpener, R. Denholm. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe, attachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Insect trap, B. Sylvester. Inside blind, A. T. Elford Iewelsettings, opening, J. Schwerter. Key for locks, C. H. Stewart	188,763 188,913 188,913 188,913 188,913 188,913 188,876 188,919 188,876 188,747 188,861 188,767 188,761 188,767 188,761 188,761 188,763 188,763 188,763 188,763 188,763 188,763 188,763 188,924 188,863 188,763 188,763 188,763 188,933 188,933 188,933 188,933 188,934 188,937 188,938 188,939 188,93
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Garnaces, etc., heating air for, J. Jenks. Garnaces, feeding air to, J. Jenks. Garnaces, Garnaces, Garnaces, Garnaces, Garnaces, Garnaces, Garnaces, J. Burt. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, sawing, G. Thompson Hoop poles, splitting, J. A. Peoples. Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth. Horseshoe, G. P. Sheffield. Horseshoe calk sharpener, R. Denholm. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe calk sharpener, R. Denholm. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Gee machine, T. L. Rankin. Gensects, destroying, Bagnicki & Groeschel. Gensect trap, B. Sylvester. Genside blind, A. T. Elford Gewel settings, opening, J. Schwerter. Key for locks, C. H. Stewart Key for locks, C. H. Stewart	188,763 188,914 188,913 188,756 188,917 188,876 188,917 188,871 188,876 188,976 188,876 188,976 188,876 188,976 188,876 188,971 188,876 188,976 188,876 188,971 188,876 188,971
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden seeder, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Frain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser Horse hush, C. W. Beiser Horse hay rake, J. Hollingsworth. Horseshoe, G. P. Sheffield. Horseshoe calk sharpener, R. Denholm. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson ice machine, T. L. Rankin Insects, destroying, Bagnicki & Groeschel Insect trap, B. Sylvester Inside blind, A. T. Elford Iewel settings, opening, J. Schwerter. Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Korb latch, C. H. Stewart	188,762 188,913 188,913 188,913 188,836 188,919 188,807 188,816 188,745 188
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Garnaces, etc., heating air for, J. Jenks. Garnaces, feeding air to, J. Jenks. Gas regulator, Kipp & Murphy. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, sawing, G. Thompson. Hoop poles, splitting, J. A. Peoples. Horse borse, J. S. Shelly Horse hay rake, J. Hollingsworth. Horse hover, J. S. Shelly Horseshoe calk sharpener, R. Denholm. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe sattachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect trap, B. Sylvester. Inside blind, A. T. Elford Gewel settings, opening, J. Schwerter. Key for locks, Abbott & Parrish Key for locks, C. H. Stewart. Key for locks, C. H. Stewart. Key for locks, O. H. Stewart. Kobs to spindles, attaching, W. Regan. Lamps, D. Whiteford. Lamps, D. Whiteford. Lamps, D. Whiteford. Lassettings, opening, J. Schwetton.	188,762 188,914 188,913 188,756 188,917 188,816 188,919 188,876 188,919 188,876 188,919 188,876 188,747 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,755 188,755 188,755 188,871 188,973 188,874 188,876 188,876 188,876 188,876 188,876 188,876 188,877 188,877 188,877 188,877 188,877 188,877 188,877 188,877 188,877 188,877
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, heating tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Frain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser. Horse horse, J. S. Shelly. Horseshoe, G. P. Sheffield. Horseshoe, G. P. Sheffield. Horseshoe, attachment, M. McBarren. Hose coupling, J. Galvin Hose coupling, J. Galvin Hose hozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Insects, destroying, Bagnicki & Groeschel. Insect trap, B. Sylvester. Inside blind, A. T. Elford Insects, destroying, Bagnicki & Groeschel. Insect, destroyi	188,761 188,913 188,756 188,917 188,836 188,919 188,807 188,816 188,919 188,807 188,816 188,919 188,807
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson. Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denholm. Hoosecoupling, J. Galvin Hose covers, J. S. Shelly Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe sattachment, M. McBarren. Hose coupling, J. Galvin Hose horse, T. L. Rankin Hosecots, destroying, Bagnicki & Groeschel Linsects, destroying, Bagnicki & Groeschel Linsect, destroying, Bagnicki & Groeschel Linsect, destroying, Bagnicki & Groeschel Linsect, destroying, Bagnicki & Groeschel Linsects, destroying, Bagnicki & Groeschel Linsect, C. H. Stewart Key for locks, C. H. Stewart Lamps, D. Whiteford Lamp, S. Whiteford Lamp, S. Welter Landau quarter light, R. Dunn Lawn mower, W. C. Farnum	188,761 188,913 188,756 188,917 188,836 188,919 188,876 188,917 188,861 188,876 188,876 188,876 188,876 188,876 188,876 188,876 188,876 188,955 188,876 188,955 188,876 188,955 188,876 188,955 188,871 188,955 188,878 188,958 188,959 188,896 188,907 188,866 188,907 188,866 188,907 188,878
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, heating tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Frain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, splitting, J. A. Peoples. Horse brush, C. W. Beiser. Horse detacher, A. B. Roberts Horse how, J. S. Shelly Horseshoe, G. P. Sheffield. Horseshoe, G. P. Sheffield. Horseshoe, attachment, M. McBarren. Hose coupling, J. Galvin Hose coupling, J. Galvin Hose coupling, J. Galvin Hose coupling, J. Galvin Hose otals, A. Howard Hot air furnace, W. E. Henderson. Ice machine, T. L. Rankin Insects, destroying, Bagnicki & Groeschel Insect trap, B. Sylvester. Inside blind, A. T. Elford Lewel settings, opening, J. Schwerter. Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Key fole escutcheon, J. Spruce. Knobs to spindles, attaching, W. Regan Lamps, D. Whiteford. Lamp, street, J. S. Hagerty (r) Landau quarter light, R. Dunn Lawn mower, W. C. Farnum Life boat, P. B. Curtis.	188,761 188,913 188,756 188,917 188,836 188,919 188,807 188,818 188,745 188,745 188,747 188,861 188,747 188,861 188,924 188,867 188,787 188,868 188,787 188,868 188,938
Furnace slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson. Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas expureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Horse hay rake, J. Hollingsworth. Horse hop poles, sawing, G. Thompson Horse hop soles, plitting, J. A. Peoples. Horse hay rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denholm. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe, G. P. Sheffield Horseshoe suge, J. Smith Horseshoe, T. L. Rankin. Hose coupling, J. Galvin Hose coupling, J. Galvin Hose hop holes, Genning, J. Schwerter. Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Key hole secutcheon, J. Spruce. Knob latch, C. H. Stewart Key hole secutcheon, J. Spruce. Knob latch, C. H. Stewart Kobs to spindles, attaching, W. Regan Lamps, D. Whiteford Lawn mower, W. C. Farnum Life boat, C. Dickenson Lock for cell doors, J. Sargent	188,762 188,913 188,766 188,917 188,836 188,918 188,876 188,919 188,877 188,861 188,876
Furnaces slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas ergulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, Ourham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough. Hoop poles, swing, G. Thompson. Hoorse hop poles, swing, G. Thompson. Horse brush, C. W. Beiser. Horse detacher, A. B. Roberts. Horse hory rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denbolm. Horseshoe calk sharpener, R. Denbolm. Horseshoe swage, J. Smith Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect, Gery of locks, C. H. Stewart Key for locks, C. Dickenson Lock for cell doors, J. Sargent Locom let-off mechanism, Widdup & Thompson.	188,764 188,914 188,875 188,915 188,917 188,816 188,917 188,816 188,917 188,818 188,817 188,818
Furnaces lag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson. Gas burner, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas sengurator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Horse hay rake, J. Hollingsworth. Horse how poles, splitting, J. A. Peoples. Horse hoy poles, J. Shelly. Horseshoe calk sharpener, R. Denholm. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe suage, J. Smith Horseshoe, G. P. Sheffield. Horseshoe, G. P. Sheffield. Horseshoe, T. L. Rankin. Hose coupling, J. Galvin Hose horse horse horse horse horse horse. Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Key for locks, P. B. Curtis. Life boat, C. Dickenson Lock for cell doors, J. Sargent Locomotive, T. T. V. Smith Loom let-off mechanism, Widdup & Thompson	188,761 188,913 188,766 188,917 188,876 188,918 188,876 188,917 188,876 188,976 188,876
Furnaces slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, etc., heating air for, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough. Hoop poles, swing, G. Thompson. Hoops poles, splitting, J. A. Peoples. Horse detacher, A. B. Roberts. Horse detacher, A. B. Roberts. Horse how a rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denholm. Horseshoe calk sharpener, R. Denholm. Horseshoe swage, J. Smith Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Insect trap, B. Sylvester. Inside blind, A. T. Elford. Insects, destroying, Bagnicki & Groeschel. Insect, Gertoping, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Insect trap, B. Sylvester. Inside blind, A. T. Elford. Issey for locks, Abbott & Parrish Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Key hole escutcheon, J. Spruce. Knob latch, C. H. Stewart Key hole escutcheon, J. Spruce. Knob latch, C. H. Stewart Key hole escutcheon, J. Spruce. Knob latch, C. H. Stewart Loom next fine fire arm, T. G. Bennett. Loom spattern chain for, C. Strobel. Langarine fire arm, T. G. Bennett.	188,764 188,914 188,875 188,915 188,917 188,816 188,917 188,816 188,917 188,818 188,818
Furnaces lag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain separator, D. Butger. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge for awning blinds, J. J. Greenough Hoop poles, sawing, G. Thompson. Horse boven, J. S. Shelly Horse boven, J. S. Shelly Horseshoe calk sharpener, R. Denholm. Horseshoe nails, finishing, R. Bevelander. Horseshoe nails, finishing, R. Bevelander. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoes, attachment, M. McBarren. Hose coupling, J. Galvin Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect, trap, B. Sylvester. Inside blind, A. T. Elford. Gewel settings, opening, J. Schwerter. Key for locks, Abbott & Parrish Key for locks, Abbott & Parrish Key for locks, C. H. Stewart Key for locks, C. H. Stewart Key for locks, C. H. Stewart Key for locks, P. B. Curtis. Life boat, C. Bickenson Lock for cell doors, J. Sargent Locomotive, T. T. V. Smith Lomm, street, J. S. Hagerty (r) Landau quarter light, R. Dunn Lawn mower, W. C. Farnum Life boat, P. B. Curtis. Locomotive, T. T. V. Smith Locoms, pattern chain for, C. Strobel. Magazine fire arm, T. G. Bennett Measuring pump, C. Hildebrand Middlings separator, E. Dolman	188,761 188,913 188,766 188,917 188,866 188,917 188,866 188,917 188,866 188,918 188,767 188,866 188,924 188,875 188,783 188,783 188,875 188,783 188,875
Furnaces alag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas currer, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas ergulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Hass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hoop poles, swing, G. Thompson. Hoop poles, splitting, J. A. Peoples. Horse detacher, A. B. Roberts. Horse hory rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denbolm. Horseshoe calk sharpener, R. Denbolm. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe anils, finishing, R. Bevelander. Horseshoe swage, J. Smith Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect, Responser, J. Schwerter. Key for locks, C. H. Stewart. Koy hole escutcheon, J. Spruce. Knob tach, C. H. Stewart. Key hole escutcheon, J. Spruce. Knob to spindles, attaching, W. Regan Lamps, D. Whiteford. Lamps, pattern chain for, C. Strobel. Jamps, pattern chain for, C. Str	188,764 188,914 188,875 188,915 188,876 188,917 188,861 188,917 188,861 188,976 188,876 188,976 188,876 188,787 188,861 188,787 188,861 188,787 188,861 188,974 188,867 188,878 188,978 188,878 188,978 188,878 188,978 188,988
Furnaces slag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garden weeder, hand, M. Johnson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas regulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Glass, annealing, J. Lowery. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Frindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hinge, J. Spruce. Horse detacher, A. B. Roberts. Horse hay rake, J. Hollingsworth. Horseshoe rails, finishing, R. Bevelander. Horseshoe nails, finishing, R. Bevelander. Horseshoe nails, finishing, R. Bevelander. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe suage, J. Galvin Hose nozzle, C. A. Howard Hot air furnace, W. E. Henderson Gee machine, T. L. Rankin Insects, destroying, Bagnicki & Groeschel Insect, J. S. Hagerty (r) Landau quarter light, R. Dunn Lawn mower, W. C. Farnum Life boat, P. B. Curtis. Life boat, C. Dickenson Lock for cell doors, J. Sargent Locomotive, T. T. V. Smith Loom spattern chain for, C. Strobel Agazine fire arm, T. G. Bennett Measuring	188,761 188,913 188,766 188,917 188,807
Furnaces alag, treating, C. Wood Furnaces, etc., heating air for, J. Jenks. Furnaces, feeding air to, J. Jenks. Garing and centering tool, F. A. Rich. Garden weeder, hand, M. Johnson. Gas currer, J. Anderson. Gas carbureter, W. W. L. Kemp Gas lighter, E. Lindsley. Gas lighter, E. Lindsley. Gas ergulator, Kipp & Murphy. Gases, purifying furnace, J. Burt. Hass, annealing, J. Lowery. Governor, Durham & Howse. Governor, Durham & Howse. Governor, wind wheel, O. P. McDonald Grain binder, H. Curtis. Grain vessels, unloading, C. J. Mann Grate bar, H. B. Denny. Grindingmill, J. S. Detwiler. Hames, holdback for, J. Robbins Harrow, J. H. Dolan. Hat, C. E. Richards. Hat block spinner, C. Sieber, Jr. Hatchway, G. N. Creamer. Heater, B. G. Devoe. Hinge, J. Spruce. Hoop poles, swing, G. Thompson. Hoop poles, splitting, J. A. Peoples. Horse detacher, A. B. Roberts. Horse hory rake, J. Hollingsworth. Horseshoe calk sharpener, R. Denbolm. Horseshoe calk sharpener, R. Denbolm. Horseshoe swage, J. Smith Horseshoe swage, J. Smith Horseshoe anils, finishing, R. Bevelander. Horseshoe swage, J. Smith Hose nozzle, C. A. Howard. Hot air furnace, W. E. Henderson. Gee machine, T. L. Rankin. Insects, destroying, Bagnicki & Groeschel. Insect, Responser, J. Schwerter. Key for locks, C. H. Stewart. Koy hole escutcheon, J. Spruce. Knob tach, C. H. Stewart. Key hole escutcheon, J. Spruce. Knob to spindles, attaching, W. Regan Lamps, D. Whiteford. Lamps, pattern chain for, C. Strobel. Jamps, pattern chain for, C. Str	188,761 188,913 188,756 188,917 188,816 188,918 188,876 188,917 188,861 188,917 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,747 188,861 188,748 188,878 188,785 188,785 188,781 188,911

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Paper bag machine, T. W. Grinter Paper bag machine, Richardson & Gibbs	188,77
Paper box, A. Powers (r)	7,57
Paper, etc., folding, L. C. Crowell	
Paper-folding machine, S. D. Tucker	
Penmanship, teaching J. D. Taylor	
Perambulator, E. G. Allen	188,89
Photograph bath warmer, Fallrath & Schnell Pills, etc., making, T. J. Young	188,78
Pills, etc., making, T. J. Young	189,00
Pipe welding tongs, J. Fieldhouse	188,88
Pitman, D. L. Lewis	100.00
Plating board, S. G. Otis	100.00
Plow, A. B. Farquhar	
Plow, sulky, H. E. Carver	
Plow, sulky, O. D. Hall	
Pocket, safety M. Von Gerichten	188.99
Pocket, safety, M. Von Gerichten	188,89
Preserving meat etc., M. Brenner	188.77
Printer's bodkin, W. Chester	188,77
Printers' rolls, renovating, B. F. Allen	188,76
Pump, J Schrankel	
Pump, T.B. Swan	188,82
Pump handle and rod joint, S. J. Adams	188,7€
Pump, ship's, Eells & Loud	188,87
Punch, numbering, Westcott et al	
Railway curve, D. E. Dutrowd	
Railway rails, leveling, J. Beugger	
Railway switch, D. A. Burr	100 00
Refrigerator, J. R. Reynolds	188 94
Refrigerator car, J. H. Wickes	
Rivet making machine, M. Bray	
Rock drilling machine, T. B. Ford	
Rolling, metal, A. Kloman	188,74
Saddle, H. Ruwart	188,96
Safe, fireproof, W. H. Butler	188,77
Saw teeth, setting, A. Boisnet	
Screwblanks, nicking, American ScrewCo. (r)	
Screws, making, T. Rickett	188,94 7,57
Screws, threading, American Screw Co. (r)	
Seal bolt, A. F. Wniting	
Seed planter, W. D. Miller	188 81
Seed planter, H. J. Robinson	
Sewing machine, G. W. Baker	
Sewing machine winder, C. T. Powers	188,94
Sewing machine, boot, G. McKay	188,80
Sewing machine, boot, G. McKay	188,96
Shovel, J. T. Tyler	188,83
Show case, T. Vaughan	
Sink, B. Wallace	
Skylight bar, J. Henry	188,90
Slate frame, H. C. Goodrich	188,79
State, hinged, R. S. Barnum	
Spark extinguisher, J. J. Gilbert	100,00
Spark extinguisher, J. J. Gilbert	188,73
Spark extinguisher, J. J. Gilbert	.188,73 7,57
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r) Spinning machine ring, W. T. Carroll (r).	188,73 7,57 7,57
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert Spinning bobbin, etc., T. L. Luders (r) Spinning machine ring, W. T. Carroll (r) Spinning quill, J. C. Stanley	7,57 7,57 7,57 188,82
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r) Spinning machine ring, W. T. Carroll (r) Spinning quill, J. C. Stanley Spinning, ring, J. Goulding	188,73 7,57 7,57 188,82 188,73
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis.	7,57 7,57 188,82 188,73 188,92
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r) Spinning machine ring, W. T. Carroll (r) Spinning quill, J. C. Stanley Spinning, ring, J. Goulding	7,57 7,57 188,82 188,73 188,92 189,00
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn	7,57 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh.	7,57 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 189,82
Spark extinguisher, J. J. Gilbert Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r) Spinning machine ring, W. T. Carroll (r) Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers Station indicator, C. Jensen Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby	7,57 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 183,82 188,85
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 183,82 188,85 188,76
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 183,82 188,85 188,76
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh Steering apparatus, power, A. Crosby. Stocking, M. Landenberger, Jr. Stove, H. M. Smith.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 189,82 188,85 188,76
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning mail, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz.	188,73 7,57 188,82 188,73 188,92 189,00 188,91 188,99 183,82 188,85 188,76 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz Straw cutter, J. E. Andrews.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 188,99 189,82 188,85 188,76 188,92 188,97 188,96 188,96
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, tooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 183,82 188,85 188,76 188,97 188,96 188,97 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, tooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands.	188,73 7,57 7,57 188,82 188,73 188,92 189,00 188,91 183,82 188,85 188,76 188,97 188,96 188,97 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope.	188,73 7,57 7,57 188,82 188,92 189,90 188,91 188,99 183,82 188,85 188,97 188,97 188,96 188,87 188,87 188,87 188,87
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag. E. F. Krelwitz.	188,73 7,57 188,82 188,73 188,92 188,92 188,91 188,99 188,85 188,96 188,97 188,96 188,83 188,79 188,83 188,79
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen.	188,73 7,57 7,57 188,32 189,00 188,91 188,92 189,00 188,91 188,95 188,95 188,95 188,95 188,97 188,97 188,97 188,97 188,97 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Sulphurous acid, making, W. D. Jones Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen.	188,73 7,57 7,57 188,52 189,00 188,91 188,92 189,82 188,95 188,95 188,96 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning machine ring, W. T. Carroll (r). Spinning ning, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison.	188,73 7,57 7,57 7,57 7,57 7,57 188,92 188,92 188,99 188,99 188,92 188,95 188,97 188,9
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, J. E. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thilli coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable.	188,73 7,57 7,57 188,92 189,00 188,91 188,91 188,91 188,92 188,92 188,97 188,93 188,75 188,93 188,75 188,93 188,75 188,93 188,75 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable Tobacco transplanter, J. W. Beverly.	188,73 7,57 7,57 188,92 189,00 188,91 189,92 189,85 188,92 188,93 188,76 188,92 188,93 188,76 188,93 188,76 188,93 188,76 188,93 188,76 188,93 188,76 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr.	188,73 7,57 188,82 188,73 188,92 188,95 188,95 188,95 188,96 188,96 188,96 188,97 188,96 188,97 188,96 188,97 188,97 188,98 188,99 188,97 188,98 188,99 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley Spinning ring, J. Goulding Spinning shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, Cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand Toy, musical, C. W. Banks.	188,73 7,57 188,82 188,73 188,92 188,93 188,99 188,82 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley Spinning ring, J. Goulding Spinning shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, Cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand Toy, musical, C. W. Banks.	188,73 7,57 188,82 188,73 188,92 188,93 188,99 188,82 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97 188,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, th. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand.	188,73 7,57 188,82 188,73 188,92 189,00 188,91 188,92 188,92 188,92 188,93 188,99 188,91 188,91 188,93 188,99 188,91 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning ning, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Barker, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher.	188,73 7,57 7,57 188,82 188,73 188,73 188,93 188,90 188,91 188,92 188,97 188,96 188,97 188,96 188,97 188,98 188,97 188,98 188,97 188,98 188,98 188,98 188,98 188,98 188,98 188,98 188,98 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning quill, J. C. Stanley. Spinning shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill, center draft, C. H. Matthiessen. Tobacco, marking plug, E. C. Venable. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock.	188,73
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, tooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Trunk catch, E. Rice.	188,73 7,57 188,82 188,73 188,82 189,90 188,99 188,90 188,91 188,92 188,96 188,97 188,96 188,97 188,96 188,97 188,98 188,97 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treades, etc., attaching, A. Hitchcock Trunk catch, E. Rice.	188,73 7,57 7,57 188,92 189,00 188,91 188,92 189,82 189,95 189,95 189,97
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r).	188.73 7,57 7,57 188,82 189,70 188,92 189,00 188,91 188,92 189,00 188,91 188,92 189,85 188,92 188,97 188,85 188,92 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning machine ring, W. T. Carroll (r). Spinning mill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, etc., C. C. Clay.	188,73 7,57 7,57 188,82 188,73 188,73 188,73 188,90 188,91 188,92 188,97 188,96 188,92 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, etc., C. C. Clay. Vapor burner, J. G. Hobert.	188,73 7,57 7,57 188,92 189,00 188,91 188,92 189,05 188,92 189,95 188,96 188,92 188,97 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, etc., C. C. Clay Vapor burner, J. G. Hobert. Ventilation, car, C. G. Lea (r).	188,73 7,57 7,57 188,92 189,00 188,91 188,92 189,52 188,92 188,93 188,92 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,93 188,94 188,94 188,93 188,94
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, etc., C. C. Clay. Vapor burner, J. G. Hobert.	188,73 7,57 7,57 188,82 188,73 188,73 188,73 188,90 188,91 188,92 188,96 188,97 188,96 188,92 188,97 188,96 188,93
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Unbrella tip cup, O. M. Smith (r). Umbrella tip cup, etc., C. C. Clay. Vapor burner, J. G. Hobert. Ventilaton, C. Y. Co.	188.73 7,57 7,57 188,92 189,00 188,91 188,92 189,00 188,91 188,92 189,05 188,92 189,05 188,92 189,05 188,92 188,97 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning machine ring, W. T. Carroll (r). Spinning machine ring, W. T. Carroll (r). Spinning mill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Station indicator, C. Jensen. Steam perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, of M. Smith (r). Umbrella tip cup, of C. C. Clay Vapor burner, J. G. Hobert Ventilator, G. G. Lea (r). Ventilator, G. G. Lea (r). Ventilator, G. G. Lea (r). Ventilator for chimneys, A. Van Horn. Wasting machine, W. W. Goodwin. Water channels, prevent obstruction, L. H. Beebe.	188,73 7,57 7,57 188,82 188,73 188,87 189,00 188,91 188,99 183,85 188,92 188,97 188,96 188,92 188,97 188,96 188,92 188,97 188,92 188,97 188,91
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, G. C. Clay Vapor burner, J. G. Hobert. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator for chimneys, A. Van Horn. Wasting machine, W. W. Goodwin. Water channels, prevent obstruction, L. H. Beebe. Water closet basin, C. Harrison.	188.73 7,57 7,57 188,92 189,00 188,91 188,92 189,00 188,91 188,92 189,05 188,92 189,07 188,92 189,92 189,93 189,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, etc., C. C. Clay. Vapor burner, J. G. Hobert. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, C. Harrison. Water closet basin, C. Harrison.	188,73 7,57 188,92 189,70 188,92 189,00 188,91 188,92 189,06 188,92 189,97 188,96 188,92 188,97 188,96 188,92 188,97 188,96 188,93 188,97 188,96 188,91
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, nusical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transon lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, C. G. Cea (r). Ventilator, G. Yon. Ventilator for chimneys, A. Van Horn. Wasting machine, W. W. Goodwin. Water channels, prevent obstruction, L. H. Beebe. Water closet basin, C. Harrison. Water elevator, A. Vantrump	188,73 7,57 7,57 188,92 189,00 188,91 188,92 189,90 189,85 188,92 188,97 188,92 188,97 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,93 188,94 188,93 188,93 188,94 188,94
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, G. C. C. Clay Vapor burner, J. G. Hobert. Ventilation, car, C. G. Lea (r). Ventilator, G. Yon. Ventilator, G. Yon. Ventilator for chimneys, A. Van Horn. Wasting machine, W. W. Goodwin. Water closet basin, C. Harrison Water elevator, A. Vantrump Water wheel, S. C. Humphreys.	188,73 7,57 7,57 188,82 189,00 188,91 188,92 189,00 188,91 188,92 189,92 189,95 189,96 188,93 188,96 188,93 188,98 188,98 188,91
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning mobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, etc., C. C. Clay Vapor burner, J. G. Hobert. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, G. Yon. Water closet basin, C. Harrison. Water closet basin, C. Harrison. Water wheel, A. B. Strand. Water wheel, A. B. Strand.	188,73 7,57 188,92 189,00 188,91 188,92 189,00 188,91 188,92 188,95 188,95 188,95 188,93 188,96 188,93 188,
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning mobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, C. G. Lea (r). Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, C. Harrison. Waster closet basin, C. Harrison. Water elevator, A. Vantrump Water wheel, S. C. Humphreys. Water wheel, A. B. Strand. Water wheel and gate, J. W. Ross. Well, driven or bored, J. E. Morrison (r).	188,73 7,57 188,92 189,00 188,91 188,92 189,00 188,91 188,92 188,96 188,92 188,97 188,92 188,97 188,92 188,97 188,92 188,97 188,93 188,99 188,97 188,92 188,93 188,99 188,91
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding. Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steam generator, A. Van Horn. Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, eooking, E. S. Shantz. Straw cutter, J. E. Andrews. Straw cutter, W. S. Gibson. Sugar, treating, Duncan & Newlands. Sulphurous acid, making, W. D. Jones. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz. Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, O. M. Smith (r). Umbrella tip cup, G. C. Clay Vapor burner, J. G. Hobert. Ventilation, car, C. G. Lea (r). Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, G. Yon. Ventilator, C. Humphreys. Water wheel, S. C. Humphreys. Water wheel, A. B. Strand. Water wheel, A. B. Strand. Water wheel and gate, J. W. Ross. Well, driven or bored, J. E. Morrison (r) Whiffletree iron, J. Irvine.	188,73 7,57 7,57 188,82 189,00 188,91 188,92 189,00 188,91 188,92 189,95 188,96 188,92 188,97 188,98
Spark extinguisher, J. J. Gilbert. Speed indicator, W. Heckert. Spinning bobbin, etc., T. L. Luders (r). Spinning pobbin, etc., T. L. Luders (r). Spinning machine ring, W. T. Carroll (r). Spinning quill, J. C. Stanley. Spinning, ring, J. Goulding Spring shaping machine, E. C. Lewis. Stamp, perforating, J. L. Wickers. Station indicator, C. Jensen. Steamgenerator, A. Van Horn Steel, manufacture of, H. Schierloh. Steering apparatus, power, A. Crosby. Stereoscope, A. Beckers. Stocking, M. Landenberger, Jr. Stove, H. M. Smith. Stove, cooking, E. S. Shantz. Straw cutter, J. E. Andrews. Tackle block, Simpson & Pope. Tag, E. F. Krelwitz Thill, center draft, C. H. Matthiessen. Thill coupling, B. P. Morrison. Tobacco, marking plug, E. C. Venable. Tobacco transplanter, J. W. Beverly. Towel rack, S. T. Kanuse. Toy, automatic, W. Baxter, Jr. Toy, automatic, W. Baxter, Jr. Toy frog, E. Durand. Toy, musical, C. W. Banks. Toy ship, G. Taylor. Trace buckle, T. J. Hubbell. Transom lifter, F. A. Reiher. Treadles, etc., attaching, A. Hitchcock Trunk catch, E. Rice. Tubing oil wells, etc., Lewis & Boynton. Umbrella tip cup, ob. M. Smith (r). Umbrella tip cup, etc., C. C. Clay. Vapor burner, J. G. Hobert Ventilator, Gr. Yon. Ventilator, Gr. Yon. Ventilator, Gr. C. Lea (r). Ventilator, Gr. C. C. Lea (r). Ventilator, Gr. C. C. Lea (r). Ventilator for chimneys, A. Van Horn Wasting machine, W. W. Goodwin. Water channels, prevent obstruction, L. H. Beebe. Water closet basin, C. Harrison Water wheel, A. B. Strand Water wheel and gate, J. W. Ross. Well, driven or bored, J. E. Morrison (r). Whiffletree iron, J. Irvine.	188,73 7,57 188,92 189,00 188,91 188,92 189,00 188,91 188,92 189,95 189,97 189,96
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DESIGNS PATENTED.

9,866.—COOK STOVE.—A. P. Corse, Troy, N. Y. 9,867.—PAPER BOXES.—L. P. Heath, Springfield, Mass. 9,868.—BALL ROOM FAVORS.—M. Keppler, N.Y. city, N.Y. 9,869.—MATCH BOXES.—F. Markoe, Philadelphia, Pa. 9,870.—PEN HOLDER, ETC.—P. Schrag, N. Y. city, N. Y. -G. Smith et al., Philadelphia, Pa 9,871.—COOK STOVES. 9,872.-RANGE .- G. Smith et al., Philadelphia, Pa.

For the week ending March 20.

9,857.-TYPE.-D. W. Bruce, New York city. 9.858, -INSULATOR -J. M. Brookfield, Brooklyn, N. Y. 9,859.—PLAYING CARDS.—J. H. Bingham, Hartford, Conn.

-GLASS JARS,-F. L. Bodine, Philadelphia, Pa. 9,861.—FORK HANDLES, ETC.—J. M. Culver, Wallingford,

9,862.—HEAD COMB.—P. J. Cullinan, New York city. 9,863.—ERASER PENCIL.—F. H. Holton, Brooklyn, N. Y. 9,864.—BURIAL CASKETS.—A. H. Nirdlinger, Rochester, 9,865.—PICTURE EXHIBITOR.—J. W. Taft, Chicago, Ill.

[A copy of any of the above patents may be had by