Notes & Queries

(1) A. F. McA. writes: I send you a scale from a boiler. What will dissolve it? What chemicals is it composed of? I have been using a siphon (steam) for lifting water from my well. Have had great difficulty in keeping my boiler supplied with water since I have been using it. Had none before. Is it because the water is warm in the tank? A. The incrustation consists chiefly of lime carbonate and sulphate, alumina, silica, iron, and organic matter—for the most part readily soluble in hydrochloric acid, which, however, cannot be used in boilers without corroding the iron. The thick portions of the incrustation will have to be removed by mechanical means. It may be somewhat softened by adding a little carbonate of soda to the feed water (about 1 lb. to 40 gallons); but where such addition is made it is necessary to guard against low water and to use the bottom blow out frequently. The proper use of the alkali and the blow out will, in a great measure, prevent the formation of incrustations. If the feed water contains much suspended matter it should be filtered. See p. 107 (31), current volume of the SCIENTIFIC AMERICAN.

(2) J. T. A. asks how the best improved shoemaker's ink is made. A. See pp. 316 (4), vol. 38, and 252 (48), vol. 37, SCIENTIFIC AMERICAN.

(3) Nemo asks for a few hints as to how he can take plaster casts of a human face and hair. A. Place the subject upon his back, with the head raised to the normal position by a pillow of bran or sand, cover the parts intended to be cast with a film of olive or true almond oil, applied with a feather brush or lump of cotton; plug the ears with cotton wool, and insert two quills or pieces of glass tubing in the nostrils and secure the space around them with cotton. When all is ready mix the plaster of Paris with warm water to about the consistence of cream, and with this cover the face from the forehead downward to the lower border of the chin. The eyes should be firmly closed, but in such a manner as not to cause distortion by too violent compression. Then cover the parts of the chest and arms to be represented, carrying the plaster upwards, so as to join the cast of the face. Then (when properly set) carefully remove each, and soak or brush it with linseed oil boiled with a little sugar of lead or litharge. Instead of casting the face and chest in two separate pieces, it is preferable to make the casting in one piece, and to divide it into 4 or 5 sections before removing, by means of threads placed in position before the plaster is applied, and withdrawn when the latter has nearly set. The cast of the back of the head is usually taken by lowering it (well oiled) into a deep trencher partially filled with the liquid plaster, and the back of the neck with the subject face downward. When the mould is finished it is firmly tied together, the joints plugged with a little cotton wool, well oiled on the inside, and a sufficient quantity of tolerably fluid plaster poured in. When the outer portions of the model have nearly set the inner portions are scooped out, and the whole thoroughly dried before removing the mould. The model is trimmed with a sharp knife. If the eyes are not to be represented as closed they must be carved out from the mass.

(4) R. E. A.—See pp. 226 and 395, vol. 37, SCIENTIFIC AMERICAN.

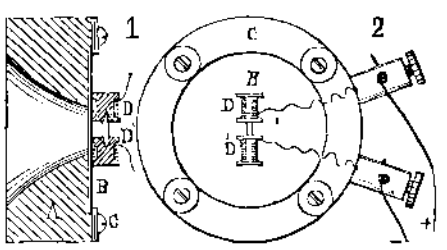
(5) C. C. C. writes: 1. I wish to study chemistry with a view to becoming an analytical chemist and assayer. How long would it take me to complete the course in a university, and is it a good profession? A. The university course (chemical) usually occupies four years; consult the circulars and reports of any of those institutions. The services of ingenious, industrious, and practical chemists are always in demand and command high prices, but many fail in the profession for want of the peculiar natural aptitude or qualifications requisite. 2. Do all large manufacturing establishments have a chemist? A. Not all, but many, in this country.

(6) H. S. C.—You may try the cements mentioned on pp. 171 (3), current volume, and 11 (3), vol. 38, SCIENTIFIC AMERICAN.

(7) E. H. O., Jr., referring to the dynamometer described in No. 9 of the current volume, asks: 1. Will the weight, W, be double the strain on the belt unless the diameter of the gear, D, = ½ that of the pulley, A, and the diameter of the gear, E, = that of D? 2. Must the diameter of B bear any ratio to that of either of the others, and if so, what and why? A. The dynamometer measures the power used in driving a machine by the force or weight necessary to hold in place the graduated lever or balance connected with the shaft of the wheel, W, so as to communicate the motion of the pulley, P, to the pulley, B. The diameter of the bevel gears has nothing to do with measuring the power, and may be more or less than that of the pulleys, provided they are equal with each other. If you place a weight of 1 lb. on each end of a lever or scale beam, it is evident that the point of suspension of the scale beam must support the weight of 2 lbs. So the weight on the graduated lever must be equal to the strain of the belt on the rising side of the pulley, P, added to that on the opposite side of the pulley, B, which drives the machine: therefore each belt bears the strain of half the weight indicated by the balance, the pivot of the shaft of the pulleys being the fulcrum of motion of the balance. In other words, the fulcrum of the lever, which is the shaft of the pulleys, bears not only the weight on the graduated lever, but also the weight lifted at the other end.—S. B.

(8) J. W. S. asks: 1. Would a machine, if it could be made to run within itself, be termed perpetual motion? A. Yes. 2. Some people claim that the United States Government offered a reward to any person that could invent perpetual motion. Is this so? A. No.

(9) W. L. S. writes: I have made several forms of microphone, the most effective of which was constructed as follows: Referring to the accompanying engraving: The mouthpiece, A, was turned from walnut, and a ferrotype plate, B, 2¾ inches in diameter, attached, a light ring of blotting paper being placed on



each side at its edge, and the whole secured by screwing over it a flat iron ring, C. Two little cups of gas carbon, D, D', are securely glued upon the disk as near its center as possible. In their cavities rest loosely the ends of a pointed rod of graphite about $\frac{1}{10}$ inch long and $\frac{1}{16}$ or $\frac{1}{12}$ inch thick. It was cut from the core of an ordinary lead pencil. Around the body of each cup is carefully wrapped the exposed end of a piece of insulated copper wire, the other end of which is in connection with its binding screw. Interposing the microphone thus made, and a Bell telephone, in the circuit of one or two Grenet cells, the slightest scratch or rub of a feather was at once audible. The usual experiments with the microphone have been sufficiently described to obviate the necessity of repetition here. Placing the mouthpiece of the present instrument upon my body, a listener with the telephone at the other end of the line, about 200 feet distant, was able distinctly to hear the beating of my heart. The same was still audible, though more faintly, when merely a single finger was placed on the ferrotype plate, and even when the contact was made by means of a short steel rod held between the fingers, while the further end rested as near as convenient to the middle of the disk. This experiment has been successfully repeated with different auditors. Thus far this form of microphone has not yielded satisfactory results when used as a telephone transmitter of articulate speech. Vocal music is taken up by it, but the reproduction is somewhat harsh. Whistling is transmitted less harshly, but not so satisfactorily as when an ordinary telephone is used. Several different sounding boards have been tried, including the one referred to, the sounding box of a tuning fork and that of a sonometer, a stretched membrane, and a mica plate, but I have found the ferrotype disk best.

(10) N. S. writes: I wish to know if I can electroplate steel or iron with Mexican dollars, and what solution is needed? A. It will be necessary to purify the silver. The best solution for silver plating is the double cyanide of silver and potassium, prepared by dissolving the silver oxide or cyanide in excess of potassium cyanide.

(11) F. W. M. writes: Will you please inform me how large an engine it will take to run a lathe with as much power as an ordinary man? How large a boiler, upright, will it take to supply steam for such an engine? How many and what size tubes should you use? A. Make an engine with cylinder 2 x 3. Boiler 10 inches in diameter, 24 inches high, with 28 tubes, ¾ inch diameter and 12 inches long.

(12) C. T. asks how to prepare steel or brass articles for silver plating, so that the silver will not scale off when burnished. A. Immerse for a few minutes in a hot solution of potash or soda, rinse (without touching) in water, dip in dilute nitric acid, remove, and scour with a stiff brush and fine sand if necessary. Then attach the wire, dip again momentarily in the acid, pass quickly through clean water, and immediately place in circuit in the bath.

(13) L. S. I. wishes to know what are the reactions between the hyposulphite of soda ($Na_2S_2O_3$) and sulphate of lime ($CaSO_4+2H_2O$), and what is the resulting compound. A. If the calcium sulphate is neutral there will be no reaction.

(14) W. H. A. asks: 1. What is the motive power of vacuum pumps, and how is it applied? A. Steam is first condensed, thus letting the water into the pump chamber, from which it is then raised by direct steam pressure. 2. Has the pressure of liquids ever been used (as the principal motive power) for raising water from a lower to a higher level? A. There are numerous hydraulic motors utilizing this principle.

(15) A. M. W. asks whether it is necessary to have a microphone at each end of the line, and in what manner to place them in circuit. A. The microphone is simply a transmitter, and should be placed wherever a transmitter is required.

(16) J. A. P. writes: I have a 12 inch magnet and wish to make a battery. Please inform me in regard to the following: 1. What amount and what number of wire do I need on each revolving spool, and what shape should the spools be? A. It depends on the power of your magnet. We think that 2 ozs. of No. 40 wire on each soft iron core would answer. 2. Must the armature be removed or left on? A. When the machine is in use the armature must be removed. 3. Can the spool be attached to the magnet similar to the telephone, and light steel armature made to revolve before the magnet, with success? A. We think not.

(17) J. B. U. asks: How many tons of ice will an ice house hold, 33 feet long, 33 feet wide, and 22 feet high? A. A ton of ice occupies a space of about 35 cubic feet.

Please inform me where I can get a book containing astronomical calculations. I wish to know how astronomers calculate the distance of the sun, moon, and stars from the earth. A. See the official government reports on eclipses and transits.

Where can I get a book containing a full description of the articles exhibited at the Centennial Exhibition? A. There is no one book containing this information.

(18) S. W. D. asks (1) how the magnetism is retained in the telephone magnet. A. Permanent magnets are used. 2. Can it be done so that the north and south poles of a horseshoe magnet can be separately used? A. Telephones are made in which both poles of a horseshoe magnet are used.

(19) W. F. L. writes: Please explain why I cannot get a current through three or more Callaud cells when using ground wire that runs into moist ground and put around 10 or 12 feet of iron plates, so as to work a call bell on a common sounder. A. Use a return wire or increase your battery power to 6 or 8 cells.

(20) H. W. B. writes: I am making a hydraulic ram, and I want to know what size to make the air chamber. The outlet to the ram is 1⅛ inch. The pipe that conducts the water to the ram 1¼ inch. Is there any rule to determine the size for different sized rams? A. We do not think there is any definite rule. Make the air chamber as large as convenient.

(21) W. R. H. asks: Is common ground oil or petroleum dangerous to use in steam boilers under steam pressure, object being to remove scale? A. We do not advise its use.

(22) B. H. W. asks for the best method of preserving a steam boiler that is not in use in the summer season from rust. Also the name, price, etc., of the best works on heating and ventilation. A. If you cannot keep the interior perfectly dry, leave the boiler full of water. Schumann's "Manual of Heating and Ventilation," price $1.50, will answer your purpose very well.

(23) H. F. asks: 1. Has the steamer Plymouth Rock of New York got a walking beam? A. Yes. 2. What was her price when new? What are her dimensions and speed? A. Address the owners, Jarrett & Palmer.

Can you give me a good remedy for dyspepsia? A. Plain well cooked food and outdoor exercise.

(24) K. B. A. M. asks for a definition of the mechanical term "spline." A. It is identical with the term "feather," or, as defined by Webster, it is "a rectangular piece fitting the key-seats of a hub and a shaft, so that while the one may slide endwise on the other, both must revolve together."

(25) W. R. L. asks: What preparation can be put on a slip of paper which has lead penciling on it, to keep the marks from being erased? A. A thin wash of gum arabic in water is sometimes used by artists. Skimmed milk will also answer very well.

(26) A. B. asks: What can I put in the plaster of Paris to make it harder? I want to use it to make a phonograph as per SUPPLEMENT No. 133. A. Mix the plaster with strong aqueous alum solution in place of water. The mixture requires a somewhat longer time to set, but ultimately becomes very hard.

(27) E. R. writes: 1. There is a cable wire rope 200 feet long from wheel to wheel, and the two sections make it 400 feet. Running on three wheels, with no bearing between them, and when the rope is slack, it has considerable whipping and jumping all the while. Now if there was a tightener half way between the wheels, would it not prevent this trouble, which wears the rope out very fast by rubbing on the flange of wheel? A. Yes. 2. Would it require more power to run the business with those tighteners on? A. A little more. 3. We have had rubber packing for those wheels, but it being so costly, we have tried wood for packing, but when it rains the rope slips on the packing, thereby causing it to have an unsteady motion. What would be the best and cheapest packing? A. India rubber is the best material, but tarred oakum answers nearly as well and is much cheaper.

(28) G. B. C. asks: Can you tell me how to cement vulcanized India rubber stamps to brass? A. Melt together equal parts of good pitch and gutta percha. Use hot.

How is the purple ink made that is used with "Zuccato's papyrograph?" A. Inks are prepared by dissolving any of the soluble aniline dyes in warm glycerine.

(29) C. O. M. asks: 1. How large a reservoir would it require to run an engine, 2 x 4 inch stroke, 75 revolutions per minute, for 10 hours? The reservoir to be filled with compressed air at pressure of 60 lbs. per square inch. A. Multiply capacity of cylinder per revolution by number of revolutions in 10 hours, and add from 10 to 20 per cent. 2. How much weight should be applied to the top of said reservoir to give a pressure of 60 lbs. per square inch? A. Cross section of reservoir in square inches multiplied by 60, with a slight allowance for friction of piston or plunger.

(30) C. W. O. asks: 1. What gives brass castings the bright gold color which we see on valve bodies? A. The application of a gold colored lacquer. See p. 299 (25), and 44 (39), vol. 38, SCIENTIFIC AMERICAN. 2. Is there a book on brass founding? A. Consult Larkin's "Brass and Iron Founder's Guide" and Overman's "Founder's Pocket Guide."

(31) E. F. D. asks how to make a cement that will adhere to glass and hold water. What I want is a cement for an aquarium. A. A good cement is composed of 3 ozs. of linseed oil, 4 ozs. of tar, and 1 lb. of resin. These are allowed to melt together over a gentle fire. If too much oil is used, the cement will run down the angles of the aquarium; to obviate this, it should be tested before using by allowing a small quan-

tity to cool under cold water, and if not found sufficiently firm, allowing to simmer longer, or have more tar and resin added. The cement should be poured in the angles of the aquarium while in a liquid state, but not when boiling, or it would most assuredly crack the glass. The cement will become firm in a few minutes, and the aquarium may then be tilted up in a different position while a second angle is treated likewise. This composition adheres firmly to the glass, is so pliant that it may be pressed into any shape by the fingers, and it does not communicate any poisonous quality to the water.

(32) J. C. D. asks: 1. Is there any method by which drawings or facsimiles of handwriting can be transmitted by telegraph? A. There are several. 2. And if so, why has it not come into more general use? A. On account of the complication of the apparatus and the time consumed in working it. 3. If there is any method, where could I get a description of it? A. You will find several of them described in Prescott's "Electricity and the Electric Telegraph."

(33) J. K.B. asks: 1. How many revolutions must a fan have, 12 inches in diameter, 4 inch buckets? I wish it to blow the trash out of corn as it enters the millstone to be ground. A. If it is well made, you can run it from 5,000 to 6,000 revolutions a minute. 2. The engine that we are using is badly eaten with tallow; if not tallow I do not know what it is. I supposed it to be the tallow. I have recently fitted up the piston and partly the steam chest, and now I am using West Virginia lubricating oil and beeswax, in proportion 2 of oil to 1 of wax. A. The oil alone will answer very well. We do not think the wax will do any harm.

(34) Engineer asks: 1. Is the curve traced through the points found by the method explained by you in No. 29, "Notes and Queries," of the SCIENTIFIC AMERICAN for August 17, adiabatic, or only hyperbolic, having a slightly larger valuation than the one formed from the equation $x\,a'=b\,a$? A. The curve is an approximated one for dry saturated steam. 2. Will you please construct a formula or equation, and give an example, from the symbols $P \propto n^{-\frac{1}{3}\frac{0}{6}}$, as given in Rankine's "Manual of the Steam Engine," p. 385, article 283? A. a=piston stroke (clearance added) to point of release. a'=piston stroke (clearance added) to any other point. P=initial pressure of steam. P′=pressure at point a'. $P'=P\times\left(\frac{a'}{a}\right)^{\frac{10}{9}}$. *Example:* $a=60$. $a'=30$. P=100. $\frac{a'}{a}=0{\cdot}5$.

Log. 0·5 — 1·6989700
Multiply by 10

Log. of 10th power of 0·5 4·9897000
Divide by 9) 4·9897000

Log. of $\frac{10}{9}$th power of 0·5— 1·6655222
Add log. of 100— 2·

Log. of pressure at a'— 1·6655222
Corresponding number, pressure at a', 46·3.

(35) R. C. K.—See p. 139 (11), current volume.

(36) C. K. asks: 1. In vertical engines, how much weight should be counterbalanced, the pitman, piston rod and head, or the pitman and crank? A. Connecting rod, piston rod, crosshead, piston, and crank. 2. Which is the best way to screw crank pins into the crank, by riveting or by nuts? A. Nuts, generally. 3. Can a correct judgment be given as to the merits of an engine by the working of a small one, say a ½ inch bore and 3 inch stroke, double cylinder? A. Many points can be determined in this way, but not all.

(37) J. L. K. writes: Please give me the lifting power of a cask, 100 gallons capacity, attached to a dead weight and pumped full of air, at a depth of 10 or 12 fathoms. A. It will be equal to the difference between the weight of water displaced, and the weight of the cask and its contents. For power of windmills see vol. 32, p. 241.

(38) B. S. & M. ask: Do the driving wheels of a locomotive slip in passing an ordinary curve? I contend that they do not, as the face of the wheels on steam roads is beveled. In curving the inside wheel comes to the small or narrow part of the face, the outside wheel must ride on the high or large part. A. If the curving is right for one curve, it may not suit another having a different radius, so that there may be cases where a slip will occur.

(39) J. M.—We do not know that there is any advantage in placing water at the bottom of the ash pit.

(40) C. O. H. asks: What is the best blacking for dressing up a steam boiler and smoke stack? A. A black varnish made from mineral oil answers very well.

(41) S. P.—It is impossible to make a cheap heliostat with one mirror which will keep a beam of sunlight fixed in any given horizontal direction. The double mirror heliostat, described by Mayer in his work on light, may, however, be cheaply converted into an automatically movable one, by connecting a pulley on its polar axis with another of half the circumference on the hour axle of a common spring clock by means of a band. The theory of the single mirror heliostat in its numerous forms must be sought in special works, *e. g.*, Jamin's "Cours de Physique de l'Ecole Polytechnique."

(42) G. C. L. writes: 1. I want to make a telephone, and hear that I can purchase in New York all the necessary parts ready to put together. A. Full directions for making a telephone are contained in the SCIENTIFIC AMERICAN SUPPLEMENT, No. 142. 2. Do I render myself liable to patent suits? A. See "Rights of Investigators," p. 128, current volume of SCIENTIFIC AMERICAN.

(43) E. G. B. writes: Suppose that we have a line shaft running about 180 or 200 feet, the power at one end and a fan at the other. Now if we would move the fan up close to the power, still leaving the line shaft in its original place, would it require any more power at one place than it would at the other? A. We think there would be no essential difference if the shaft is of sufficient size and well supported.

(44) E. R. D. writes: I have been troubled the same as T. T. writes in your issue of September 21, 1878, and, after trying all the experiments that he relates, have found that the only material that will withstand the action of steam, oil or tallow is pure asbestos. A. This is often good, but we scarcely think that it is the only material.

(45) G. G. L. writes: I propose going from New York to Florida in a staunch 25 foot steam yacht, and I wish to ask if you think it is safe, or if it is a dangerous undertaking. What would I need besides coast charts and compass to aid me? A. It would not be very dangerous with a good boat. You should have lanterns, a sounding line, two good anchors, and some life preservers, in addition to the articles you have named.

(46) M. S.—Weissenborn's "American Engineering" contains full details of beam engines.

(47) I. T. S. asks: What is the composition of a good flux for purifying metals, such as brass, pewter, hard lead, etc.? My object, for instance, is to separate in brass turnings the iron filings. A. The metals cannot be separated by fluxes alone. The brass and iron filings or turnings may be most economically separated by means of good electro-magnets, arranged on the periphery of a wheel or in any other suitable manner.

(48) F. K. asks: 1. Is a Smee battery with center plate of carbon a good battery for silver plating? A. Yes. 2. If so, what surface of zinc and anode is required to a given surface of work? A. Your anode may have twice the surface of the zinc. 3. What is the standard used by platers for 4, 8, and 12 oz. plate, or, in other words, how many table or tea spoons is 4 ozs. of silver puton for a single plate? A. For a 4 oz. plate 4 ozs. of silver are puton a gross of spoons. 4. Is it any more necessary that different cells of a battery should be charged alike for quantity than for intensity? A. No.

(49) O. H. asks: Could you inform me of the existence of any substance which will make metal adhere to wood? A. Melt together equal parts of clear pitch and gutta percha. Apply hot.

(50) G. W. K. asks: What is the best English publication on numismatics? A. Consult Prime's "Coins, Medals, and Seals," Dickinson's "American Numismatic Manual," Faure's "Catalogue de Medailles antiques et Monnaies du Moyen Age composant sa Cabinet."

(51) F. W.—The star Mira Ceti will be found on the horizon at about 5° south of east.

(52) W. R. S.—To secure an artificial mustache you may try the cements recommended on p. 171 (3), current volume, SCIENTIFIC AMERICAN. Also p. 11 (3), vol. 38. These "masks" are, we believe, usually held in position by small springs entering the nostrils.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

J. S. R.—A fragment of quartz.—J. S. R.—Please send larger sample of the ore.—T. S. B.—No. 1. The sample of earth does not contain phosphates. No. 2 is dolomite or magnesian limestone. It may be used for building purposes.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure the receipt of original papers and contributions on the following subjects:

On the Steam Ram. By S. S.
A Climax to Mechanical Invention. By E. L. T.
Egyptian Lotus. By J. S.
Elephantiasis *vs.* Leprosy. By T. C.
How to make a Simple Beam Compass. By M. A. B.
Mechanical Stoker. By D. S.

HINTS TO CORRESPONDENTS.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Many of our correspondents make inquiries which cannot properly be answered in these columns. Such inquiries, if signed by initials only, are liable to be cast into the waste basket.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from $1 to $5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

August 13, 1878,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Advertising card, O. J. Ramsdell 206,969
Advertiser, illuminated, G. H. Chatterton 206,861
Alkali balls, composition for coating, A. Mendleson 206,891
Amalgamator and washer, ore, Firmin & Forster. 207,023
Apple corer and slicer, Pfeifer & Ulrich 206,967
Bag holder, W. B. Allen 206,915
Baking powder, W. P. Clotworthy 207,071
Bale tie, A. Roeber 207,083
Basket, flower, F. C. Tennyson 207,060
Bed, camp, F. J. De Morambert 206,980
Bed, sofa, S. Squires 8,375
Bedstead, table, E. Kiss (r) 207,038
Belt fastener, A. J. Johnson 207,063
Bird cages, fastener for, C. M. Neubauer 206,867
Bird cages, food holder for, B. A. Drayton 206,927
Blasting wedge, O. F. Brockhausen 207,062
Blind stop, A. F. Fuller 207,026
Blind, window, J. E. Goodrich 207,027
Blotter, tablet, C. M. Cott 207,017
Boats, outrigger, etc. for, Roberts & Knight 207,070
Bolt threading machine, T. Thomas 207,084
Boot and shoe, A. Van Wagenen 206,985
Bottle and bottle stopper, H. Codd (r) 8,372
Bottles, pliers for wiring, B. P. Kincaid 206,951
Bung, W. Bender 206,923
Button, F. A. Comey 206,931
Can and vent for oil, jacketed, J. S. Lester 207,046
Can lids, locking device for, W. E. Jenkins 206,879
Can, sheet metal, G. D. Brooks 207,007
Can, sheet metal, Miller & Coll 207,058
Canvas, making artists', W. Levin 206,885
Canvas, painters', W. Levin 206,886
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Car coupling, A. Rice 207,068
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Chimney or ventilator cup or cowl, D. Scott 206,978
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Churn, Tise & Kester 207,065
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Clamp, H. W. Atwater 206,851
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Clasp for supporting garments, S. Porter 206,896
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Coffee, etc., cleaner and polisher, M. Doyle 206,866
Coffee roaster, J. B. & W. H. Wiggerman 206,911
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Cooler, milk, S. R. Bryant 207,008
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Corset, J. K. Ross 206,900
Corset, H. S. Strauss 206,906
Cotton scraper and chopper, Gibson & McDaniel .. 206,871
Crocheting fabrics, machine for, H. A. House 206,878
Cultivator, C. D. Bradley 206,925
Cultivator, C. E. Sackett 206,974
Cultivator, S. R. Stanton 206,903
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Dental purposes, abrading tool for, E. T. Starr ... 207,079
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Evaporator, liquid, J. J. Johnston (r) 8,373
Evaporating liquids, process for, J. J. Johnston (r) 8,374
Excavator, C. Pontez 207,064
Fan, automatic, W. Duchemin 207,022
Fence, J. D. & W. E. Mandeville 207,050
Fence, E. D. Youngs 206,993
Fertilizer and grain distributer, S. S. Morton 207,062
Fertilizer distributer, B. Kuhns 207,043
Filter, water, P. P. Emory 206,938
Firearm, breech-loading, F. J. Mesle 207,056
Firearms, lock for, J. M. Wittman 206,991
Fire escape, C. H. Ames 206,916
Fire extinguisher, H. S. Parmelee (r) 8,376
Foot power, W. F. Lane 206,952
Fork, M. Naumier 206,894
Forks, ferrule for spading, W. H. Buckley 207,009
Fruit drier, A. C. Burdick 206,860
Funnel, measuring, D. Hitchcock 206,946
Furnace, ore roasting, etc., A. Ramage 207,065
Garbage holder, R. Cook 207,016
Gas light extinguisher, Brand & King 206,926
Gas, preparing nitrogen, G. A. Treutler 207,086
Gas regulator for retorts, L. G. McCauley 207,052
Gate, Hastings & Cock 207,032
Gate, farm, H. W. Goodwin 206,942
Gate, farm, S. Schreffler, Jr. 207,078
Glove fastening, A. B. Kittson 206,883
Grain separator, R. Clarke 206,929
Grain separator, M. P. Korsgaard 207,042
Grain separator, A. M. Sutherland 206,982
Grate holder, Howdon & Wood 207,036
Gun, machine, F. L. Bailey 206,852
Harrow, S. Beckner 206,922
Harrow, J. Johnson 207,039
Harrow and seeder, wheel, J. S. Foster 207,025
Harvester, T. S. Brown 206,857
Hay carrier, E. A. Walters 206,987
Hay tedder, E. W. Bullard 207,010
Hay tedder, W. M. Saunders 207,074
Hedges, constructing osage-orange, J. Kline 207,041
Hides, unhairer, scourer, etc. for, J. A. Taipey 207,081
Hinge for folding seats, R. T. Hambrook 206,875
Hinge, lock, H. M. Ralston 206,897
Hog cholera compound, J. P. Cole 206,863
Hoister, tobacco, J. M. Wadlington 206,986
Hoisting apparatus, tobacco, W. A. & W. S. Guy. 207,030
Holdback for vehicles, E. E. Morse 207,061
Honey comb, foundation for, M. Metcalf 207,057
Hops, sack for baling, C. A. Sands 206,976
Horse nail machine, J. Mills 207,059
Horse power, C. E. Macarthy (r) 8,366
Horse power equalizer, L. B. Rowland 206,973
Horseshoe, D. F. Fetter 206,939
Horseshoe nail machine, J. D. Sumner 206,907
Horseshoes, die for making, G. Bryden 206,859
Horseshoes, manufacture of, G. Bryden 206,858
Hot air register and evaporator, W. L. McDowell 206,890
Hydrant for watering stock, J. Compton 207,015
Insect destroyer, J. P. Ruhmann 206,901
Ironing table, W. C. McGill 207,054
Knife scales, manufacture of, W. Baker 206,919
Knitting machine cylinder, A. Greiss 207,029
Lamp, Stephens & Lameraux 206,904
Lamp and stove, R. R. Moore 206,960
Lamp burner, W. O. Lincoln 207,048
Lamp, carbureting, C. E. Ball 206,999
Land leveler, S. Griffin 206,943
Lantern, L. J. Atwood 206,917, 206,918
Lantern, C. H. Viereck 207,088
Lantern, signal, S. Coxon 206,933
Lock, time, J. L. Hall 206,872
Lock, time, S. M. Lillie 206,887
Lock, time, E. Stewart 206,981
Lubricator, C. F. Raymond 207,067
Lumber trimming machine, G. W. Nichols 206,962
Meal, flour, etc., drying, J. T. Maybury 207,051
Medicament, coated compressed, C. Carter 207,013
Middlings separator, W. H. Fruen 206,869
Mill attachment, grinding, C. V. Stevens 206,905
Mill, cider, J. L. Barnes 207,001
Mill, grinding, M. B. Atkinson 206,996
Millstone dress, W. D. Odendahl 206,963
Millstone dressing machine, W. Coplin (r) 8,377
Millstone driver, P. H. Childress 207,014
Mower, lawn, A. H. Rau 207,066
Numbering machine, T. S. Bowman 206,924
Nut lock, W. J. Brassington 207,006
Nut lock, J. C. Lewis 207,047
Odorless closet, W. Glover 206,874
Oil, transporting petroleum, R. A. Wilder 206,990
Oiler for locomotives, O. A. Haynes 207,033
Paper pulp, separating, P. & G. C. Rose 206,971
Paper pulp washer, H. Hollingsworth 206,877
Pen holder, T. B. Jeffery 206,950
Photographs, coloring, Price & Klingaman 206,968
Pins, making wooden, A. M. Kendall 206,882
Pitcher, S. W. Babbitt 206,997
Planter, corn, Goodwin & Hurlburt 207,028
Plow, F. Johnson 206,880
Plow, C. P. McWane 206,958
Plow point, White & Francis 206,910
Plow, sulky, J. C. Welsh 206,989
Pocket books, etc., clasp for, Wolf & Loeb 207,089
Potatoes, removing the skin of, A. R. Davis 206,934
Press, baling, P. K. Dederick 206,865
Press, hop, C. A. Sands 206,977
Printing press, Rosser & Briggs 206,972
Propelling vessels, Cowles & Brewer 207,018
Pump, C. F. & S. Rigby, 3d 206,970
Pump bucket, chain, M. C. Bignall 206,854
Pump bucket chain, J. S. Wilcox (r) 8,370
Pump chains, making, J. Adt 206,995
Pump, oil well, M. Lytle 206,888, 206,956
Punkas, apparatus for working, Parsons & Palliser 206,895
Quilting frame, W. E. Barker 207,000
Railway spike, E. J. Remillon 206,898
Railway switch, street, J. V. McIlroy 206,957
Railway track, A. Herring 206,876
Rake, horse hay, T. S. Miller 206,959
Rein for two horses, driving, G. R. Woolsey 206,912
Rein holder, R. Floryanowicz 207,024
Rice hulling machine, W. G. Stevenson 207,080
Riveting machine, H. Mac Coll 207,049
Roofing, etc., material for, D. S. Armstrong 206,850
Ruling paper, machine for, E. Gouptel 206,873
Sash and frame skylight, J. L. Cox 207,019
Sash fastener, Fogelstrand & Sparks 206,940
Saw handle, crosscut, M. E. True 206,908
Saw tooth, insertible, J. L. Berry 207,003
Screw cutting stock and tool, E. P. Baville 206,920
Sewing machine, T. Lamb 207,044
Sewing machine, Young & Dimond 206,992
Sewing machine, blind stitch, Hoffman & Meyers 207,035
Sewing machine shuttle, E. Bouscay 207,004
Shawl strap, W. T. Butler 206,928
Shirt, G. A. McFadden 207,053
Shirt neck shaper, A. Borchardt 206,856
Shoulder brace, A. Adamson 206,994
Skylight, A. & G. Bickelhoupt 206,853
Spike extractor, J. F. Scribner 206,902
Spinning ring, J. W. Wattles 206,988
Spring, vehicle, W. Chegwin 206,892
Springs, clip for vehicle, J. Bowden 207,005
Springs, retarding recoil of, Dick & Luders 207,020
Springs, retarding recoil of, C. J. A. Dick 207,021
Stamp, branding, W. L. Gamage 206,870
Steam generator, J. G. Baker 206,998
Steamer, feed, Craine & Gaylord 206,864
Stomach and enema pump, E. Rosenzi 207,072
Stove attachment, Lawrence and Strawbridge 206,953
Stove polish, H. J. Dreher 206,868
Stoves, fender for cooking, B. S. Hite 206,947
Swimming, apparatus for teaching, T. H. Monstery 206,892
Table slide, extension, H. W. McIntyre 207,055
Tar, package for, C. H. Leggett 207,045
Target, ball, C. A. Tatum 206,983
Telephone resonator, C. E. Carmon 207,011
Thill coupling, Holdredge & Cowan 206,948
Thill coupling, W. S. Palmer 206,965
Thrashing machine teeth, Richardson & Morgan. 207,069
Toy bank, E. R. Morrison 206,893
Treadle, A. L. Akins 206,914
Truck and bag holder, Bissell & Van Buren 206,855
Turbine wheel, etc., U. S. & W. H. Sheffer 207,076
Twine holder, J. W. Turner 206,984
Type writing machine, E. R. Barron 207,002
Ultramarine, manufacture of red, J. Zeltner 207,093
Valve, globe, J. Powell (r) 8,367, 8,368
Ventilator for blow and dust rooms, J. B. Holmes 206,949
Wagon hound, J. Q. Adams 206,913
Wagon jack, H. Hiestand, Jr. 206,944
Wash board, B. Kaufmann 206,881
Wells, casing head for oil, F. A. Conkle 206,932
Wheel, vehicle, C. S. Carpenter 207,012
Wheelbarrow, J. Lennon 206,955
Whip socket, F. Higgins 206,945
Whitewashing machine, J. P. Weber 206,909
Wrench, axle nut, A. Van Wie 207,087

TRADE MARKS.

Baking powder, C. E. Andrews & Co 6,461
Boot and shoe blacking, Boyer & Co 6,473
Brushes, J. L. Whiting 6,469, 6,470
Condiments, such as pickles, etc., F. & J. Heinz 6,464
Cooking stoves, S. S. Jewett & Co 6,475
Drygoods, C. M. Williams 6,460
Dry hop yeast, Judd Brothers Yeast Company 6,465
Fancy furs, etc., J. E. Bergtold 6,478
Flour, H. F. Harrington 6,454
Flour, Kenly, Jenkins & Young 6,455
Fruit preserving substances, L. P. Worrall 6,459
Medicines, B. F. Rackley 6,467
Medicine for horses, etc., J. Saunders 6,480
Photographic material, E. & H. T. Anthony & Co. 6,472
Prints, Eddystone Manuf. Company 6,457, 6,458
Printing plates, L. Brown & Co 6,453
Salt, R. Evans 6,479
Salve, Schloss & Frech 6,456
Sewing and knitting needles, H. Baylis 6,474
Smoking and chewing tobacco, Maclin & Barkley .. 6,477
Soap, C. F. Bates 6,462
Soap, Day & Frick 6,463
Thrashing machine, Seymour, Sabin & Co 6,481
Water closets, Zane & Roach 6,471
Wines and brandies, Renauld, Francois & Co 6,468
Wood heating stoves, S. S. Jewett & Co 6,466, 6,476

DESIGNS.

Burial caskets, A. H. Nirdlinger 10,776
Carpet, H. Christie 10,778
Carpet, C. Magee 10,779, 10,780
Carpet, J. Neil 10,781
Font of types, D. W. Bruce 10,777
Rocking chairs, S. Willershausen 10,782

[For the week ending August 6th.]

TRADE MARKS.

Baking powder, G. W. Kendall 6,450
Cassimeres, F. Glazier 6,437
Churns, Tiffin Union Churn Company 6,451
Cigars, H. Welsh 6,445
Coffees and spices, J. Prusso 6,439
Fertilizers, H. Duvall & Co 6,434
Flour, G. V. Hecker 6,438