## MARCH 25, 1876.]

add 50 parts shellac, and boil until solution is effected. The stiffening may be applied (to the inside of the hat) by means of a brush. As soon as this is done, the hat should be immediately immersed in very dilute oil of vitriol in order to neutralize any excess of alkali, and to properly fix the shellac.

(27) A. N. asks: Is there any danger of lead poisoning, or other serious consequences, from the use of sugar of lead as a wash for sores? A. The danger depends upon the strength of the solution used and the frequence of the application. Colic sometimes results from the very free use of solutions of acetate of lead. Pereira states that paralysis is caused by using acetate of lead.

(28) J. E. K. says: You gave the following recipe for a liquid for mixing rocket stars: Alcohol  $\frac{4}{3}$  oz., camphor  $\frac{1}{3}$  oz., isinglass $\frac{1}{3}$  oz. How can the isinglass be dissolved in alcohol? A. It cannot. The quantity of alcohol given is just sufficient to render the camphor capable of being properly incorporated with the other ingredients by maceration. Do not add the gelatin until all the other ingredients have been uniformly intermixed by gentle trituration in a mortar.

(29) S. B. asks: In crushing highly sulphurous ores with Cornish rollers at 120 revolutions per minute, will the sulphur have any effect on the iron or face of the rolls so as to injure its texture? A. We think not.

(30) A. B. asks: 1. Of what is Indian ink composed? A. Indian or Chinese ink is formed of carefully purified lampblack and size, or animal glue, with the addition of perfumes, not necessary, however, to its use as an ink. 2. In what substance is lampblack soluble? A. Commercial lampblack always contains more or less resinous and tarry matters, that are soluble in oil of turpentine, benzine, naphtha, etc.; but the purified lampblack (carbon) is itself insoluble in any menstruum.

(31) C. K. asks: What metal or alloy expands the most and quickest at a temperature within 300° Fah.? A. Zinc. Taken at 32° Fah., a rod of zinc 25 feet 4 inches long will have a linear expansion at 212° of about one inch.

(32) V. C. T. says: I have a lot of thin malleable iron castings, which I am havingground, polished, and nickel plated, but they all have a dull leaden appearance after being plated. They tell me the fault is in the casting, that the malleable iron was burnt. Can this be true? A. Malleable iron may be readily nickel plated if the work be first properly finished. If the castings are burnt, it will be necessary to refinish them before a satisfactory deposit can be obtained.

(33) E. S. T. asks: Why do preserves, that are in perfectly airtight jars, mold? A. If the preserves be placed in the jars while hot, so as to completely fill the jar and expel the air, the preserves will not mold.

(34) E. S. H. asks: How can I make colored fires? A. Try the following: For light blue 61 per cent of chlorate of potash, 16 of sulphur, 23 of strongly calcined alum. Fordark blue,60 per cent of chlorate of potash, 16 of sulphur, 22 of carbonate of copper, 12 of alum. For deep blue, use 54 per cent of chlorate of potash, 18.5 of charcoal and 27.5 of ammoniacal sulphate of copper. It is hardly necessary to mention that great care is required in mixing these materials, and that each ingredient should be pulverized separately. For red fire use 29 7 parts chlorate of potash, sulphur 17.9, charcoal 1.7, nitrate of strontia 45.7, black sulphuret of antimony 57. For green, chlorate of potash 32.7, sulphur 9.8, charcoal 5.2, nitrate of baryta 52.3. For yellow, sulphur 23.6, charcoal 3.8 nitrate of soda 9.8, saltpeter 62.8.

(35) T. L. asks: Is a large deposit of soda, such as is generally deposited from soda springs, of any value? A. Yes. It might be profitably used as a flux in reducing ores.

(36) R. S. asks: How should bodies of cellular structure, being saturated with nitrate of silver to become conductors of electricity, be treated with bydrogen gas? A. Enclose in an atmosphere of pure bydrogen and heat to redness. Solutions of copper are preferable to silver, as they are much cheaper.

How is the double sulphate of nickel and ammonia prepared ? A. See p. 139, vol. 29.

(37) G. S. says: I have a drum head that has lettering on it, done in black. How can I take the marks off without injuring the head? A. You should have stated, if possible, the character of the pigment employed in the lettering. The following is a list of the solvents commonly employed

(40) E. B. J. says: I desire to make a mucal instrument, the sound being produced by striking wooden strips, of uniform thickness and varying length. Supposing the shortest strip is 4 inches long, what will be the length of the others down to 2 octaves below the note sounded by that one? What is the best material for the hammers, and what kind of wood gives the best sound? A. The relative lengths of the pieces, for an octave on the natural scale, are as follows:  $1, \frac{5}{9}, \frac{4}{5}, \frac{3}{5}, \frac{5}{5}, \frac{5}{15}, \frac{1}{15}, \frac{1}{2}, \frac{1}{2}$ . This progression is upward, the  $\frac{1}{16}$  length sounding a note one octave above the 1. Another octave upwards can be formed by halving the figures, thus:  $\frac{4}{9}$ ,  $\frac{2}{8}$ ,  $\frac{8}{8}$ ,  $\frac{1}{8}$ ,  $\frac{3}{10}$ ,  $\frac{4}{15}$ ,  $\frac{1}{4}$ , and so on as long as desired. We believe they are generally laid on straw, and struck with wooden hammers. Some of our readers, however, may be familiar with the use of the instrument, and will correct us if in error. Given a set of conjugate diameters of an ellipse,

how can the axes be found so that the curve can te conveniently constructed? A. Let e b and cd te

the given conjugate diameters. From d draw a line perpendicular to e b, and make its length, d E, equal to eO. Join the points, O and E, by a straight line, and upon O E, as a diameter; describe a circle. Draw a straight line, d H, through d and F, the center of this circle. G and H, where the line cuts the circle, are points in the principal axes, and G d, H d, are the lengths of the semiaxes, so that A B and C D are the axes required.

(41) J. B. asks: How can I produce a gloss on hard rubber? A. Ebonite may be worked, in all respects, like any hard wood. Pumice powder and rottenstone are commonly employed as finishers.

(42) E. P. J. asks: 1. What is the precise diameter of the piston of a reciprocating engine, presenting 144 square inches of area? A. Calling  $\pi$  the ratio of the circumference of a circle to a diameter, the diameter in question is equal to 24 divided by the square root of  $\pi$ . As, however, the value of  $\pi$  cannot be precisely expressed in numbers, it is impossible to give the precise diameter of the piston. 2. What would be the horse power of such an engine with 2 feet stroke, running with 100 lbs, boiler pressure to thesquare inch at 100 revolutions perminute, and cutting off at 1 foot, or 1/2 troke? A.The data sent are insufficient for an accurate calculation. See p.33, vol. 63. 3.What is the calculation as to the percentage of power lost by friction in the reciprocating engine? A. It varies in different engines from 10 to 40 per cent, From 20 to 25 per cent would possibly present a fair average. 4. What would be the increase of power in the above named engine if the steam both before and after the cut-off, were always operating at 1 foot leverage from the center of the shaft, as it now is at the half stroke, without commencing near one dead center and losing its expansion in the other? A. The mean leverage throughout a revolution is about 0.6366 of the length of the crank, and the center of the crank pin moves 1.5708 times as far as the piston in a revolution: so that the whole power exerted by the piston is transmitted to the crank, except what is lost by friction. It would seem impossible to do more than this, whatever the leverage might be.

(46) P. S. says: I saw a meteor in Kansas on December 27, 1875, and I wish to know of what kind of matter such bodies are composed. A.Mateoric bodies are of two classes. Some are composed of entirely combustible, while others are of combustible and incombustible, matter. They revolve around the sun in orbits more elliptical than the orbit of the earth, so that parts of their orbits are internal and parts are external to the earth's orbit. When the earth and the meteoric bodies come near enough together so as to bring the latter within the earth's atmosphere, they are ignited by the resistance, and are either wholly or partially consumed. If their course and the attraction of the earth would bring them to the earth's surface, then the combustible ones would probably be whoily consumed before reaching it, while the others fall in the form of iron, etc. At times they only pass through the upper portion of the atmosphere, and, after receiving a very warm reception for a few moments, are allowed to go on, but not in their old paths.

(47) J. C. C. asks: What are the ingredients and proportions of the wax used by electrotypers for taking impressions of type? A. Yellow beeswax will do very well.

(48) L. & G. M. Co. ask: What preparation can be applied, with a pen, to mark numbers on the surface of tin plate? A. Squeeze the juice of a lemon into a cup, and put in a bit of copper, of the size of a cent. Let itstand for a day or two, then use it with a quill pen.

(49) J. H. says: I have a material containing free sulphur. By applying heat I drive the sulphur off in the form of gas. How can I condense those fumes, so as to obtain flowers of sulphur? A. It is necessary that the sulphur vapor should not come in contact with the air, otherwise a portion of it will be oxidized and converted into sulphurous acid gas. Sulphur may be volatilized or sublimed at a temperature of 732° Fah. If it then be condensed in suitable vessels, we have the substance commonly known as flowers of sulphur. This is done, says the United States Dispensatory, by allowing the fumes to condense on the walls of a brick chamber.

(50) R. E. says: J. H. P. states on p. 114, current volume, that no chimney burners are safe on account of the shortness of the wick tube, and he expects to do better with a tube 4 incheslong instead of 11/2. He is certaicly mistaken. Every coal oil burner should, and most of them do, contain a little flat tube, which serves for the escape of gas formed by heated oil. With this tube a nochimney burner is just as safe, if notsafer, than a burner with chimney. Lamps with chimneys get a great deal hotter than those without, for two reasons: The chimney, producing a better draft, causes a more perfect combustion of the oil, and consequently a whiter light and more heat from the same amount of oil burnt; and the chimney, being always near the flame, gets a great deal hot ter than the constantly changing air would without a chimney, and will consequently radiate heat to all the surrounding objects, of which the oil reservoir gets its share. If J. H. P. wants to use a wick tube 21% inches longer than generally used, he will find that oil of 150 gravity, as the law now requires in most of the States, will not rise at all so high in sufficient quantity to feed the flame : his wick will therefore get charred, and he will be obliged to burn lighter oil, and so increase the danger of explosion.

(51) J. M. S. says: In a recent issue you recommended strips of plank to be used beneath the window assh for the purpose of ventilation. I have used the same, but for applying or removing expeditiously I hinged them at the center, and covered them above and below with felting or rubber to keep out the cold.

(52) M. W. L. says, in reply to C., who asks as to the weight of the 20 and 15 inch guns: They weigh respectively 115,200 and 49,100 lbs.

(53) J. J. B. says, in answer to a correspondent who complained of heating of millstones: To avoid hot grinding, reduce the speed of your millstones and grind slower; and in staffing the stone, put in a piece of writing paper, and let the stone be just so tightly fixed that the paper will slip out from under the staff, near the eye of the stone.

(54) J.J. B. says: Tooil a mill spindle at the bush, bore a % inch hole through the wood block in bush, next to spindle. Take a piece of % inch in org gas pipe, bend, and insert it, bringing under the stone up through the floor, outside of the curb. Let the outside end be the highest. Use castor oil in oiling, as it never congeals, and you need never have any trouble in oiling millstones with in the coldest weather.

(57)" D. F. J.' says, in reply to J. A. H., who says that the carrying boards of his reels are flat, and that the flour sticks on them: If you give your carrying boards enough pitch, keep your stones in good order, and do not grind hot, you will nothave any further trouble in that line. Sandpaper the boards and then put shellac on them.

(58; J. B. J. says, in reply to H. M.'s query as to the line of the magnetic meridian : Since the latitude and longitude of the piace are not given, the question may be considered under two hypotheses: 1. The line may be in Maine or thereabouts, where the declination of the magnetic needle from the meridian has varied from 14° to 17° during the last40 years. 2. It may be in some of the Western States, where an equal declination, but opposite in direction, has existed during the same period. If the first supposition be true, then the first surveyor made due allowance for the declination, and located substantially a true meridian. The subsequent surveyors, neglecting the declination, located a magnetic meridian, which is con-stantly and indefinitely fluctuating. If the line in question is west of the Alleghanies, it would seem that the first surveyor ran the line parallel with this needle, disregarding declination: hence it would not be a true meridian, the two subsequent surveyors being in this case approximately cor-The amount and direction of the discreprect. ancy between these two latter appear to favor the first hypothesis; it is readily accounted for, however, under the second, when it is remembered that the deviation of the magnetic needle from the true meridian is a constantly varying quantity.

(59) D. C. R. says: S. H. B. and many others desire information as to building boats. In the first place, make the keel of required length and about 1¼ inches thick and 4 inches wide, with a rabbet to receive the edge of garboard strake. Put on stem and stern as required, and fasten them on some good support about 2 feet from floor; then place molds of the shape required, in about 5 sections, across the keel and secure them, and cut the first strake to fit keel and stem and stern. Nail on, and conlinue to cut and nail on until of the depth required; then bend in ribs and put in seats and other inside finish.

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

J. M. M.-It is ramie fiber.-T. T. R.-It is sulphide of lead (galena) accompanied by sulphate of baryta (heavy spar).-W. P. T.-It is sulphuret of iron, irised by a superficial oxidation.—J. L.—It is iron pyrites, at present not of much commercial value.-W. A. J.-It is bituminous shale, impregnated with sulphuret of iron, to which the glistening metallic appearance is due.-G D. M.-It is impossible to make an analysis of any value on 2 ozs. of water. One gallon is needed, carefully sealed up in a perfectly clean bottle of white glass. -G. J.-No. 1 is alunogen, a variety of native alum consisting of sulphuric acid, water, alumina, a little iron, etc. It may be purified by solution in water, and then, by saturation with alkali and crystallization, be converted into common alum. No. 2 is blende or sulphide of zinc. No. 3 is black argillaceous shale. No. 4 is ferruginous quartz .--M. R.-There appears to be no market in New York for sand of this character which has to be transported any distance.-J. R. M.-It is calcite or crystallized carbonate of lime.—C. E. G.—The metal is lead: the mineral is muscovite (potash mica.)

J. W. S. says: I am taking a carbolate of iodine inhalant for catarrh, and it scents my clothes with an unpleasant odor. Can you tellme of something to mix with it to produce a pleasant odor?-W. McD. says: How can I get a smooth surface on planished copper plates?-T. J. asks: How are the inches, etc., put on wooden rules?-W. S. says: R. W. R. states that he is carrying 20 horsepowerby a cottonrope. How does he maintain the proper tension during dsmp or dry weather?

## COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acsnowledges, with much pleasure, the receipt of original papers and contributions upon the followng subjects:

- On Thermometrical Tables. ByJ. B. G.
- On the Sargasso Sea, etc. By M.
- On Bored Wells. By L. L.
- On Windmills. By A. McL. On a Registering Barometer. By W. A. B.
- On Projectiles. By R. H.

where this is not known : Water, ether, ether and	of wat
alcohol, benzole, naphtha, chloroform, bisulphide	out reg
of carbon, caustic alkalies, diluted acids, solution	of a lit
of cyanide of potassium. They should be applied	true th
consecutively in the order given. It must be borne	feet pe
in mind that many of the abovementioned solv-	mate v
ents are extremely injurious to the material of the	
drum head, and care should be exercised to pre-	the cir
vent any unnecessary contact.	equal t

(38) J. H. B. asks: How can I renovate a sponge mattrass that has become hard by use and dampness? A. This has not been satisfactorily accomplished.

(39) C. & Co. ask: 1. In the manufacture of fluid magnesia, to what pressure would you charge the fountain with carbonic acidgas? A. To 12 ozs. water add  $\frac{1}{2}$  oz. magnesia and add citric acid to slightly acid reaction. Such aoidity is generally found more palatable than a neutral solution. Sweeten, add a few drops oil of lemon to flavor, and 18 grains potassa bicarbonate. This is the proper fluid magnesia. Many sell a spurious article made of tartrate of soda with a little soda bicarbonate flavored with lemon. 2. How is the magnesia bottled? A. Bottle in the ordinary way, not using the carbonic acid apparatus. f water, with 15 feet head, enter a vacuum, withut regard to friction in the tube? A. At a rate f a little more than 56 feet per second. 6. Is it rue that air enters a vacuum at the rate of 1,300 eet per second? A. This is an average approxitate value.

(43) H. E. E. asks: 1. What is squaring the circle? Is it finding a square with an area equal to the area of a circle of given diameter? A. Yes. 2. If so, does not the whole trouble lie in finding the area of a circle? A. Yes. 3. Does not geometry demonstrate the process beyond the possibility of error? A. No.

(44) H. D. P. asks: How is the bronze made that is used for bronzing statuary, etc.? A. Bronze statuary does not require the application of any bronze. Make your castings of: Copper88 parts, tin 9 parts, zinc 2 parts, lead1 part. You can then polish the castings to suit your taste.

(45) T. H. says: I saw in a recent issue of your paper a statement that man appeared on the earth 150,000 or 200,000 years ago. Will you refer me to the evidence of the existence of pre-adamite men? A. Sir Charles Lyell's work on "The Aniquity of Man" is a complete *resumi* of the whol subject, which is too extensive for our columns.

(55) W. L. S. says, in reply to an inquiry as to why a telegraph sounder connected with the bell of analarm clock does not work : Every telegrapher knows that a quick tap on the key, no matter how hard, will not affect the sounder, as it does not give time for the magnet to work. The atroke of the alarm striker is exactly of this na-

ture, and therefore cannot repeat itself on the sounder.

(56) J. C. Says, in reply to L. S. C.'s queries as to the effect of dampness on unused boiler furnaces: Into a closed vessel place 5 to 10 gallons heavy oil (petroleum parafin); place the vessel at a safe distance, with a pipe to lead the vapor of the oil under the boilers. Close up every crack or crevice by luting, put a fire under the vessel, and evaporate the oil. The whole of the fire surface, and even where the brick is in contact with the boiler, will be sweated or covered with the condensed vapor of the oil. To protect the inside of the boiler, first dry it by a very light fire under it; then put a few gallons petroleum in each boiler. As the oil vapor condenses, the whole inside of the boiler will be coated with a rust-proof coat of oil

Also inquiries and answers from the following: H. C. N.-J. D. M.-O. A.-C. F. E.-E. W.-L. H. Q. -L. D. D.-A. N. W.-W. M. R.-W. S. R.-J. M.-D. M. H.-A. G.-A. W.-C. M.-F. B.-J. E.-F. W. -!. F. E.

## HINTS TO CORRESPONDENTS.

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

Enquiries 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; butwe generally take pleasure in answering briefly by mali, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Whose is the best smut mill for wheat? Who sells incubators? Who makes fuses for blasting? Who makes small copper tubing? Who sells crushers for treating copper ores? Whosells railroad spike machines? Who sells ear trumpets? Who makeselectrical musical reporters?" All such 204

## Scientific American.

[Малсн 25, 1876.

personal inquiries are printed, as will in the column of "Business and Pers is specially set apart for that purpor	sonal," which	Gas apparatus, D. L. Westcott	174,039 173.730	Separator, middlings, W. J. Merritt Sewer trap, A. Ely Sewing machine, J. Keith	173,925 173,967	HOISTING
the charge mentioned at the head of Almost any desired information can		Gas retorts, closing, N. Jamin Gaseller, drop light, C. Deavs Gate, V. R. Cole	173,773		173,837	TO Cheap, simple, durable, and effective. art
be expeditiously obtained.		Gate, J. S. Winsor Grain drill, B. ●wen	173,839 178,809	Sheet metal moldings, F. Hoeltge	173,954 173,957	CAR WORKS FOR SALE, AT PETERSBURG, VA.
[OFFICIAL.]		Grating apparatus, F. W. and W. F. Graeve, Jr. Grating apparatus, F. W. and W. F. Graeve, Jr.	173,941	Shoes, etc., wooden, E. W. Shippen Shovel, fire, J. Edgar Shovel, onow, C. Jones	173,920	The Petersburg Car Works, tully equipped with r Machinery of latest style, with a capacity for makin Cars per day, and operated by the Company's wa power, will be sold at public Auction, on the premia
INDEX OF INVEN	TIONS	Guns, machine, F. L. Bailey 178,751, Harness pad, coach, R. M. Selleck	183,752 173,819	Shovels, back strapfor, E. A. Barnes	173,893	be had by addressing, at Petersburgh, Va.
Letters Patent of the United St		Harness trimming, W. Davis Harrow, W. S. O'Brien (1) Harrow, G. M. Titus	6,947	Shutter worker, A. Bishop.	173,886	T. L. H. YOUNG, President, or WINFREE & MEACHAM, Auctioned
Granted in the Week En February 22, 1876,	-	Harrow, G. M. Huss Harrow and seed sower, wheel, E. R. Powell Harrow, revolving, W. H. Culver	173,810	Shutter, plate metal, G. Hayes Side stick and quoin, C. W. Packard Single tree clip, F. E. Walker	173,992	11x36 CORLISS ENGINE & BOILER, \$1, 16x16x38 Belden Planer. 13x4 Pratt & whitney Lathe
AND EACH BEARING THAT		Harvesters, W. F. Cochrane 153,899, 173,900, 153,901, Harvesters, W. N. Whiteley	173,902 174,041	Soap composition, J. McEvoy Sole-channeling machine, A. E. Chickering	173,982	<ul> <li>1 Large Vol. 2 Root Blower, Steel Shatts</li> <li>1 Stats 38 Belden Planer.</li> <li>1 Stat &amp; Whitney Lathe.</li> <li>Also Shapers and other tools. Send for list.</li> <li>E. P. BULLARD, No. 48 Beekman St., New Yo</li> </ul>
[These marked (r) are reissued part Air compressor, G. Westinghouse, Jr		Harvester, guard plate, W. F. Cochrane Hat frames etc., binding, M. H. Aghakhan Heater, feed water, T. W. Hayes	173,841	Sole-channeling machine, J. E. Wheeler Sole edges, trimming, N. S. Thompson	173,830	A Gift Worthy of a Rothschi
Anchor, J. D. Fewkes	173,929 173,942	Heater, tire, H. B. Sloe Heel-burnishing machine, W. B. Lambert	173,821 173,971	Spark extinguisher, J. G. May Spool and bobbin, J. Baldwin Stamp, hand, J. Sigwalt. Jr	173,880	ONE CENT
Apron, double, W. G. Heaney Auger, earth, W. W. Jilz Auger, hollow, A. Berry	173,794	Hog scraper, P. Johnson Hoisting apparatus J. Dorman Horse collar guard. Boyden & Van Nest	173,917	Staples, making, Coutz and Rennard Stave-crozing machine, I. Graves	173,909 173,781	A conv of Brown's lilus trated Shaksperian Almanac.
Bag, shawl, . Bender Baggage seal, C. G. Schneider	173,712	Horse's foot weight. Strawbridge & Stevenson	73,874	Stave-sawing machine, Cornish and Hunt Stay end clip, D. Wilcox	174.046	A cony of Brown's lilustrated Shaksperian Almanac, gether with a copy of his illustrated paper, the Grown Wown D. which is devoted to natural history, will be s to any one free who will send us their addression a
Bale tle, S. Callanan Bale tle, G. W. Moulton	173,843 173,737	Horses, interfering pad for, H. G. White Horseshoes, manufacture of T. Dollard	73,838 73,916	Steam brake, etc., G. Westinghouse, ., r. (r) Stencil-cutting machine, S. Matthews Stereotype plates, etc., shaving, E. T. Jameson.	173,732	to any one free who will send us their address on a cent postai card. Address DR. • P. Bit•WN, 21 Grand St., Jersey City, N
Barrel-crozing machine, Herman & Lewis Bath, electric vapor, E. Smith Bed bottom, J. W. Smi h	174,018	Hub and axle, W. H. Ward 1 Hydrant, J. P. Kenyon Hydrant, fire and drinking, D. C. Cregier	73,796	Stove, D. L. Stiles Stove, cooking, W. P. Abendroth	173,827 173,875	
Bed bottom, spring, J. W. Case Bedstead, sofa, L. Schonter	173,896	Iron, melting and purifying, W. Batty Jack, lifting, G. W. Hunter	173,884	Stove, gas, Gleason and Bowler Stove, gas, A. W. Morton Stoves, cooking, E. B. Patten	173,985	
Belts on machinery, running, E. T. Thomas Bench dog, W. G. Tilton	173,831	Key ring, P. Brooks Ladder, fireman's, W. B. Crane	173,910	Straw cutter, I. S. Bunnell	173,892	-0.2330322303, CONTROLOGINA Y 🖤
Billiard cue. R. Phillipson          Billiard cue holder, G M, Rising       Billiard table chalk holder, G. M. Rising	173,816	Lamp chimneys. crimping, W. H. Maxwell Lamp, street, C. K. Deutsch	73,914	Sugar-cutting machine, W. Doscher Surveyor's leveling ta-get, E. A. Gieseler	173,938	Small Tools of all kinds; also GEAR WHEELS, pr of MoDELS, and materials of all kinds. Casting: Small Lathes, Englacs, Silde Reats, &c. Catalogues fi 600DNOW & WIGHTMAN, 23 Cornhill, Boston, Ma
Binder, temporary, W. H. Russell Bird cage perches, E. C. Ford	174,(09 173,934, 173, <b>9</b> 35	Lamp shadeholder, etc., E. Stevens	174,022 173,853	Syringe, R. V. Emde Table leaf support, P. J. Liljeholm Tea pot, J. W. Brewster	173,976	
Blind stop, J. Q. Newhall Blinds, panels for, G. Hayes	73,788, 173,789	Leather, etc., uniting, G. V. Sheffleid	73,872	Telegraph, automatic, C. Batchelor Telegraph, printing, G. L. Anders	173,754 173,750	FOOT LATHES Foot Dri Send for Circulars to H. L. SHEPARD, 602 W. 5th St., Cincinnati
Boat, life, G. Hudson Boiler heads, flanging, R. C. Nugent Boiler arch plate, G. & G. Fox, Jr	173,803	Level, plumb, T. O'Hagan I Lighting lamps, etc., J. W. O'Donnell Lightning rods, H. L. Coe	171,053	Telegraphy, automatic, T. A. Edison Tire heater, H. B. Sloe	173,7 8 173,821	BLAKE'S PATENT
Bolt, king. G. W. King Bolting reel, J. L. Row	173,797	Lightning rod, Johnson & Price Lock for prisondoors, S. A. Denio	173,968 173,775	Tobacco press, S. B. Minnich Tongue support, J. A. Bussert Trace gearing, E. B. Winslow	173,894	Stone and Ore Break
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	173,741	Raker and tedder, D. A. Calkins	173,895	<ul> <li>n each Caveat</li> <li>n each Trade mark</li> <li>n filing each application for a Patent (17 years)</li> </ul>	\$25	
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Engine, rotary, J. C. Titus Envelope machine, H. D. and D. W. Swift	173,754 t 173,870	Refrigerator, E. K. Howes	73,791	On appeal to Commissioner of Patents      On application for Reissue      De aligned Dissibilities	\$30	CHEMISTRY AND METALLURGY, MECHANICS AND ENGINEERING, ELECTRICITY, LIGHT, HEAT, SOUND, TECHNOLOGY, THE USEFUL ARTS, BOTANY AND HORTICULTURE, AGRICULTURE, RURAL AND HOUSEHOLD ECONOMY, MATERIA MEDICA, THERAPEUTICS, HYGIR NATURAL HISTORY AND ZUOLOGY, METEOROLOGY, TERRESTRIAL PHYSICS, GEOGRAPHY.
Equalizer, draft, E. A. Beers (r) Explosive mixture, W. F. Johnston	6,949 173, <b>9</b> 61	Roof, tile, J. Smith Ruler, parallel, J. B. Price	74,021 73,812	<ul> <li>n filing a Disclaimer</li> <li>n an application for Design (3½ years)</li> <li>n application for Design (7 years)</li> </ul>		METEOROLOGY, TERRESTRIAL PHYSICS, GEOGRAPHY, GEOLOGY AND MINERALOGY, ASTRONOMY, ND NUMBERALOGY,
Fabric, waterproof, G. E. Block Fare box, H. H. Johnson Fare register, W. H. Hornum (r)	173,960	Saddler's horse, H. H. Huntington 1 Sash holder, S. E. Miner Sash holder, J. J. Talbott	173,803	•n application for Design (14 years)		BIOGRAPHY AND NECROLOGY.
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